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Mr. Gary Gill, Director  
Office of Environmental Quality Control  
235 South Beretania Street  
State Office Tower, Suite 702  
Honolulu, Hawaii 96813

Dear Mr. Gill:

SUBJECT: Final Supplemental Environmental Impact Statement (FSEIS)  
Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
TMK: 2-6-03: por. 01 and 21, and 2-6-04: por. 38, por 40, por. 45, Kauai,  
Hawaii

The County of Kauai Planning Department has accepted the Final Supplemental Environmental Impact Statement for the Kukui'ula Bay Resort as satisfactory fulfillment of the requirement of Chapter 343, Hawaii Revised Statutes. Therefore, we request publication of the acceptance of the subject FSEIS in the October 8, 1998 OEQC Environmental Notice. Attached please find the following items:

Acceptance letter from the County of Kauai Planning Department to Kukui'ula Development Company, Inc. dated September 25, 1998  
FEIS Acceptance Report

If you have any questions, please feel free to contact Keith Nitta of my staff at 241-6677.

DEE M. CROWELL  
Planning Director

Enclosures

1998 FEIS KAUAI  
KUKUIULA BAY RESORT

**FILE COPY**

**FINAL**

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***SUPPLEMENTAL ENVIRONMENTAL  
IMPACT STATEMENT***

**KUKUIULA BAY RESORT  
Kukui`ula Planned Community  
Koloa, Kauai, Hawaii**

For: Kukui`ula Development Company, Inc.

By: Townscape, Inc.

August 1998

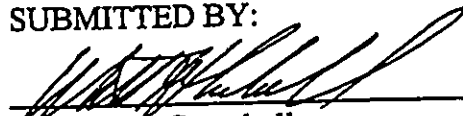
**FINAL  
SUPPLEMENTAL ENVIRONMENTAL  
IMPACT STATEMENT**

**KUKUI'ULA BAY RESORT  
Kukui'ula Planned Community  
Koloa, Kauai, Hawaii**

**TMK: (4) 2-6-03: Por. 1, 21  
and 2-6-04: Por. 38, Por. 40, Por. 45**

This document has been prepared pursuant to  
Chapter 343, Hawaii Revised Statutes

SUBMITTED BY:

  
\_\_\_\_\_  
William H. Campbell  
Executive Vice President and Manager  
Kukui'ula Development Company, Inc.

8/25/98  
\_\_\_\_\_  
Date

For: Kukui'ula Development Company, Inc.

By: Townscape, Inc.

August 1998

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## **SECTION 1 – INTRODUCTION AND SUMMARY**

### **1.1 INTRODUCTION AND PURPOSE**

This Supplemental Environmental Impact Statement (“SEIS”) has been developed to provide essential supplementary environmental impact analysis for a portion of a 1,040-acre planned community on the Island of Kauai: “Kukui`ula Planned Community”.

The project will be developed on lands owned by A&B-Hawaii, Inc. (“A&B”) and McBryde Sugar Company, Limited (“McBryde”). Kukui`ula Development Company (“KDC”), a wholly owned subsidiary of A&B, will manage the development. The project site is located on the southern coast of the Island of Kauai, in the vicinity of Kukui`ula Bay (see Figure 1-1). The town of Koloa is located about one mile northeast of the site, and the resort area of Poipu is located about one mile to the east (see Figure 1-2). The well-known scenic attraction “Spouting Horn” is located just seaward of the western end of the planned project. Lawai Valley, with its internationally known Allerton Estate Garden and National Tropical Botanical Garden is located just west of the site.

The SEIS is required by the Kauai County Planning Department (“Planning Department”) as part of the documentation for a proposed amendment to the County General Plan. The proposed amendment would change a 77-acre portion of the “Kukui`ula Planned Community” from General Plan “Urban Residential” to General Plan “Resort”.

A complete Environmental Impact Statement (“EIS”) for the entire 1,040-acre project was completed in April 1989 (hereinafter referred to as the “1989 EIS”), and was accepted by Kauai County in May 1989. The Planning Department has determined that the proposed amendment to the General Plan does not require a new EIS, and that an SEIS would be appropriate.

Generally, the SEIS addresses recent changes that KDC has made to the plans for a resort at Kukui`ula. For those environmental issues where impacts will remain essentially unchanged from the impacts disclosed in the 1989 EIS, the SEIS provides brief summaries of the findings presented in the 1989 EIS. Readers interested in the details of these unchanged impacts are referred to the 1989 EIS, which is on file at the Planning Department and at the State Office of Environmental Quality Control.

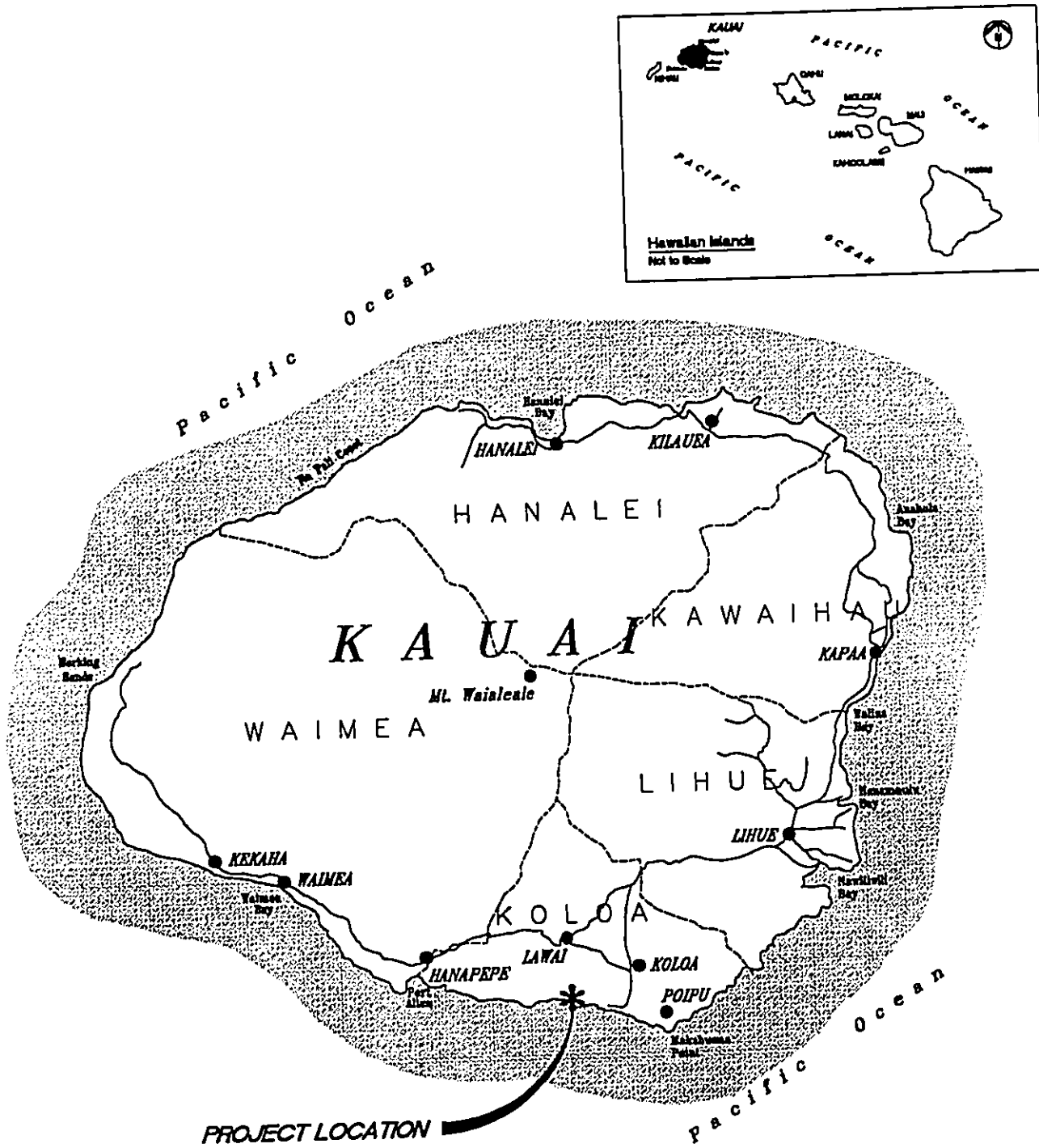
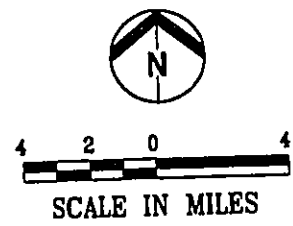
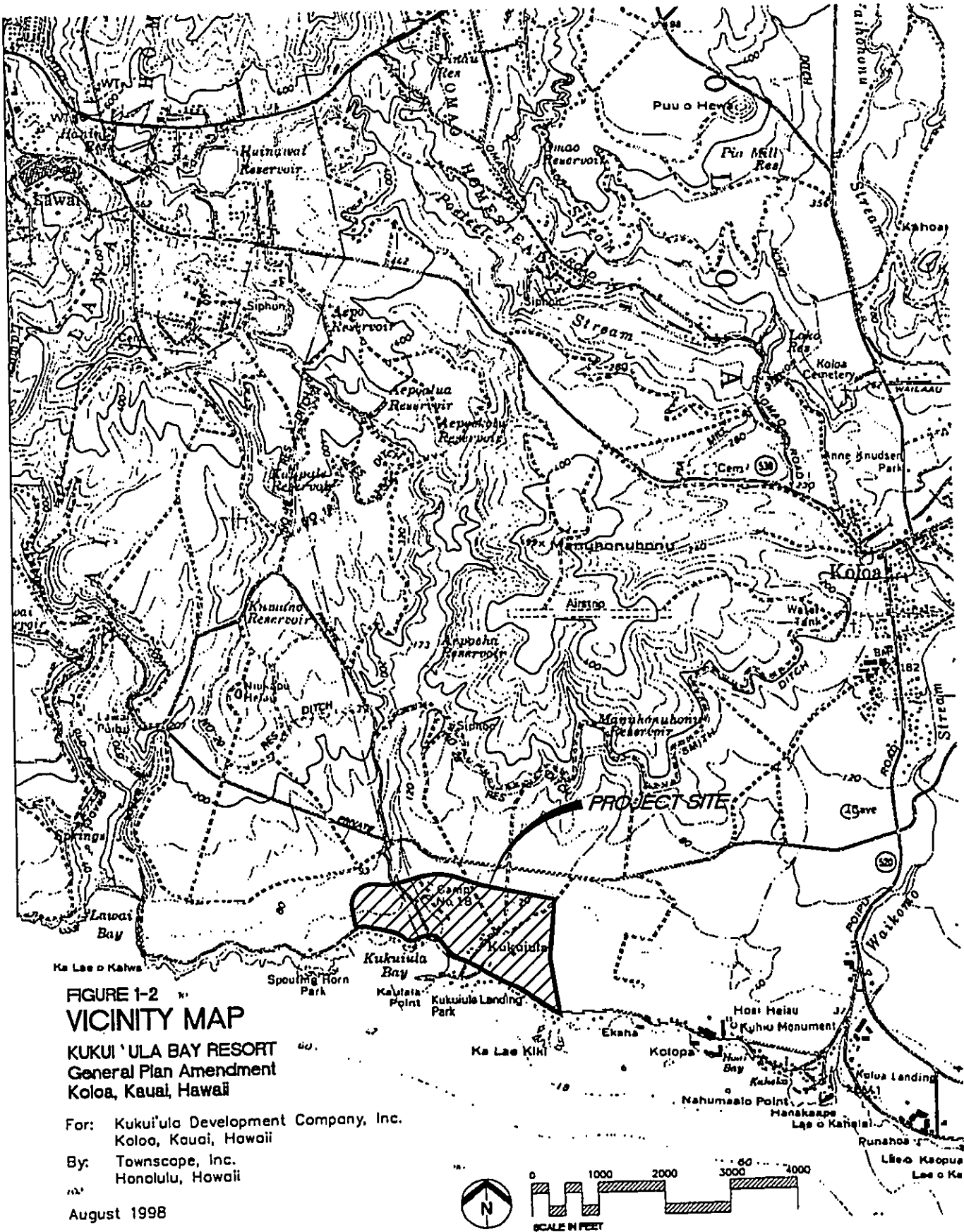


FIGURE 1-1  
**LOCATION MAP**  
KUKUI'ULA BAY RESORT  
General Plan Amendment  
Koloa, Kauai, Hawaii

For: Kukui'ula Development Company, Inc.  
Koloa, Kauai, Hawaii  
By: Townscope, Inc.  
Honolulu, Hawaii

August 1998





**FIGURE 1-2  
VICINITY MAP**

**KUKUI'ULA BAY RESORT  
General Plan Amendment  
Koloa, Kauai, Hawaii**

For: Kukui'ula Development Company, Inc.  
Koloa, Kauai, Hawaii

By: Townscape, Inc.  
Honolulu, Hawaii

August 1998

## 1.2 BACKGROUND

The Kukui`ula Planned Community was first conceived of some 40 years ago. In 1958 a "conceptual plan" for a residential/resort development at Kukui`ula Bay was developed under the direction of McBryde. This conceptual plan showed the potential development of approximately 600 acres. Project elements were envisioned to include resort hotels, vacation condominiums, principal and secondary residences, a shopping center, a golf course, a small boat marina, and related parks, open space, landscaping, and infrastructure.

These initial development plans were not further pursued until 1982. During the period from 1982 to 1998, the project master plan was re-evaluated and redrawn in response to a complex range of forces, including the strong real estate market of the 1980's, the devastating impact of Hurricane Iniki in 1992, and the economic downturn the State of Hawaii and the County of Kauai have experienced during the 1990's. A brief summary of the important stages in this evolution of the master plan is provided here as a context for the SEIS.

- 1983      A&B Properties, the land development subsidiary of A&B, reviews the 1958 conceptual plan for Kukui`ula and decides to move forward with the major land use entitlements for the development of about 200 acres at Kukui`ula. A&B develops a preliminary conceptual plan for a 219-acre project. The preliminary plan is for 810 single-family homes, a 5-acre commercial center, and related infrastructure. At about this time, the County of Kauai begins a comprehensive update of the County General Plan.
- 1984      The County of Kauai enacts changes to its County General Plan. Included is a change from General Plan "Agriculture" to General Plan "Urban Residential" for 219 acres of A&B land at Kukui`ula.
- 1985      A&B Properties, acting on behalf of McBryde, files a petition with the State Land Use Commission (LUC) to change the State Land Use designation of 219 acres at

Kukui`ula from "Agricultural" to "Urban". LUC approves this land use change in December 1985.

1986 A&B decides to consider the possibility of a larger project at Kukui`ula. The preliminary development program for this larger project includes a resort hotel, a golf course, a small boat marina, and more vacation and residential units. Some conceptual planning work for this larger project begins.

1987 A&B completes a Conceptual Master Plan for about 1,000 acres at Kukui`ula. A&B then proceeds with the preparation of a zoning application for a 219-acre "Phase 1" area. In November 1987, A&B submits to the County of Kauai a zoning application for Phase 1 that includes 612 single family units, 1,142 multi-family units, a 5-acre commercial site, and park sites.

1988 In August 1988, A&B Properties receives County zoning approval for the 219-acre Phase 1 project containing 1,738 single family and multi-family units, a 6-acre commercial site, and a cultural park. Also during 1988, A&B continues internal discussions and planning for the larger 1,000+ acre project area.

1989 A&B Properties develops a County General Plan Amendment Petition and related Environmental Impact Statement for an additional 822 acres of land at Kukui`ula. The Petition and EIS are filed with the County in April 1989. The General Plan amendment request is for a change from "Agriculture" and "Open" designations to "Urban Residential" and "Resort".

The County accepts the EIS in May 1989. In October of 1989, the County Council approves, over a veto by the Mayor, the General Plan amendment request for the change from "Agriculture" and "Open" to "Urban Residential", but the requested "Resort" designation for approximately 40 acres is amended by the County Council to "Urban Residential" because the designation of lands at Kukui`ula for resort purposes is considered "premature at this time".

- 1990 Kukui`ula Development Company ("KDC"), a wholly owned subsidiary of A&B, is formed to manage the detailed development of the project. KDC now proceeds with engineering design for some of the major infrastructure elements of the Phase 1 area: drainage structures, mass grading, and the wastewater treatment plant.
- 1991 KDC contracts for the construction of Phase 1 improvements, including mass grading, drainage structures, and the wastewater treatment plant. KDC also develops detailed subdivision plans for the first increment of single family homes.
- 1992 The mass grading and construction of the drainage system and the wastewater treatment plant is near completion. The subdivision plans for the first increment of homes receive tentative County approval. KDC issues a "Request for Proposals" for architectural design for this first increment of homes.
- September: Hurricane Iniki devastates the Island of Kauai. The inundation line from the storm extends into the Kukui`ula site.
- 1993 Mass grading and construction of the drainage system and wastewater treatment plant are completed. After assessing the damage caused by Hurricane Iniki to the site and to neighboring lands and homes, KDC decides that the overall 1,040-acre Master Plan must be revised. Areas of the site makai of the inundation line are to be changed from residential to open space uses. Additional "urban" acreage will be required. KDC develops a revised Master Plan, and then prepares and submits a new State Land Use Boundary Amendment petition to LUC requesting a change from State "Agricultural" to "Urban" for 822 acres of the Kukui`ula site.
- 1995 In May 1995, the LUC approves KDC's petition. LUC decides that the "urban" acreage approval should be in increments, with Increment I consisting of 537

acres and Increment II, to be developed after Increment I infrastructure has been substantially completed, consisting of 285 acres.

KDC then proceeds with the preparation of a zoning application to the County of Kauai for the rezoning of 727 acres of land to residential, commercial, and park uses.

The Kauai County Council approves KDC's zoning application in December 1995. Before proceeding with the development of homes an updated market assessment is undertaken.

- 1996      Based on the updated market assessment, KDC examines various options for proceeding with the project. Hawaii is now in its sixth year of economic stagnation.
- 1997      KDC determines that the resort component of the project needs to be moved up in the phasing sequence. Originally slated for the area designated by LUC as "Increment II", the resort component is now seen as a critical priority for establishing marketing and sales momentum for the project overall. To implement this new direction, the LUC Decision and Order needs to be amended to change the resort acreage from its "Increment II" designation to "Increment I". Work on the LUC motion commences. KDC also discusses with the County the need for a County General Plan amendment to change the resort area's designation from "Urban Residential" to "Resort".
- 1998      KDC assembles a consultant team to examine development concepts for the resort area. A revised Conceptual Plan for a 77-acre resort component is developed. The Kauai Planning Department determines that an SEIS is required for the proposed General Plan amendment. KDC accordingly undertakes the development of this SEIS document.

### 1.3 THE 1989 PROJECT DESCRIPTION

The 1989 EIS presented a project description for a 1,040-acre planned community that was to be developed on lands that were, at that time, used for sugarcane cultivation and marginal pasturelands. The proposed land uses included single-family homes, multi-family units, an 18-hole golf course, a resort complex, a small boat marina, three neighborhood parks, a school expansion site, a wastewater treatment plant, two commercial areas, walkways and bikeways, greenbelts, open space buffer areas, and related infrastructure including roads, drainage systems, sewage collection systems, water distribution systems, electrical power, and communications lines (see Figure 1-3). The project was proposed to be developed in two phases: a Phase 1 of 219 acres that had already received County General Plan and State Land Use approval, and a Phase 2 of about 800 acres that was still designated "Agriculture" by both the State and the County.

The planned unit count presented in the 1989 EIS was:

- Phase 1: 1,738 units
- Phase 2: 2,800 units

The total planned unit count was thus 4,538 units. By general type, these units were:

- Single Family Units: 2,638
- Multi-Family Units: 1,400
- Resort Units: 500

The single-family units would provide housing for full-time residents and second homeowners, whereas the multi-family units would target a combination of full-time and resort-oriented markets, such as vacation homebuyers or investors.

The 500 resort units were planned to be developed on a 20-acre site adjacent to Kukui`ula Bay. The planned 10-acre small boat marina and 10-acre commercial area were intended to complement the resort and provide a special experience for visitors. Thus, the overall Resort/marina/commercial complex totaled about 40 acres.



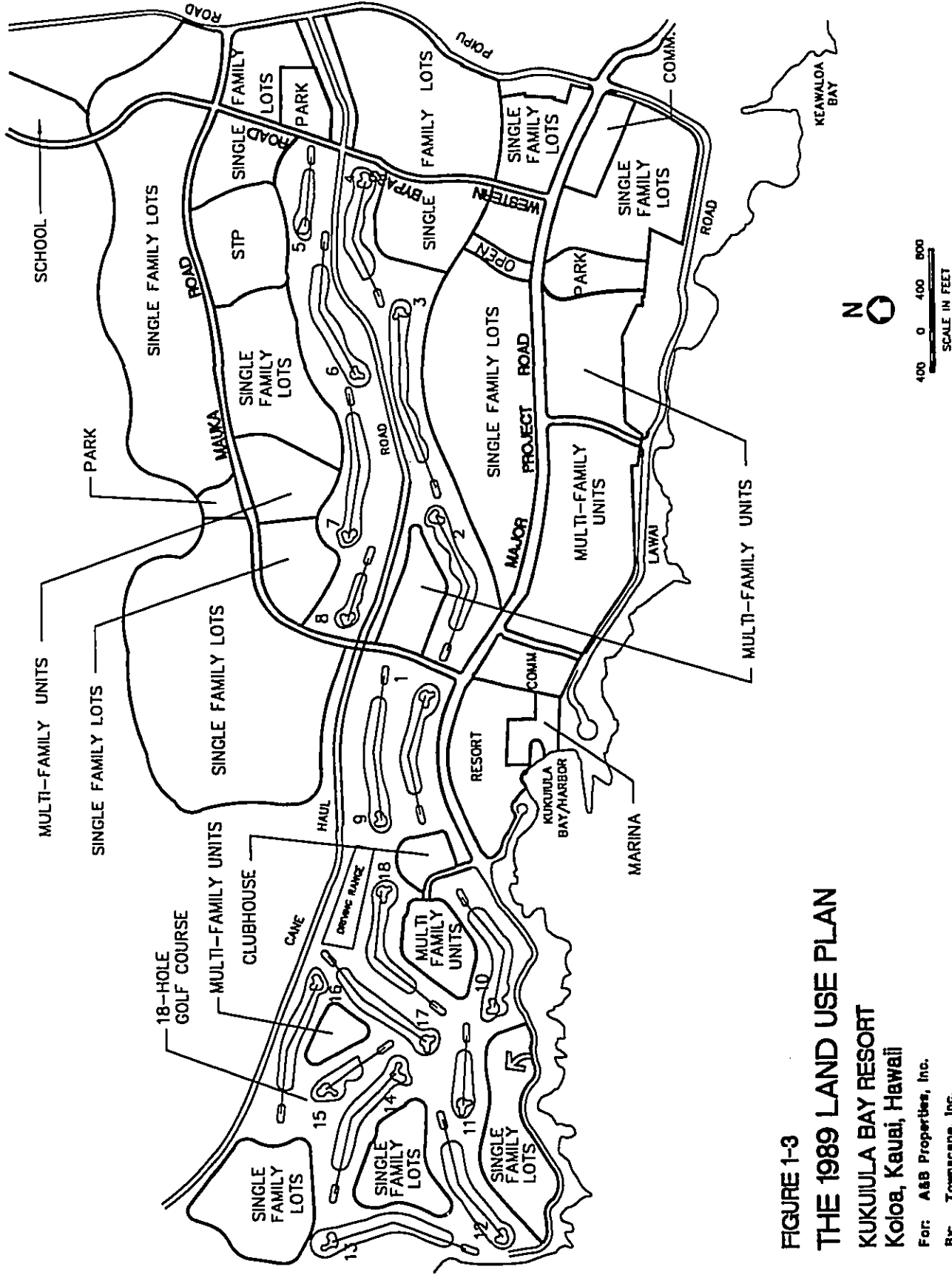


FIGURE 1-3  
 THE 1989 LAND USE PLAN  
 KUKUI'ULA BAY RESORT  
 Koloa, Kauai, Hawaii  
 For: A&B Properties, Inc.  
 By: Townscape, Inc.  
 June 1988

#### 1.4 CHANGES TO THE 1989 PLAN

As discussed in Section 1.2, economic conditions and the impact of Hurricane Iniki have necessitated certain modifications to the Master Plan for the Kukui`ula Planned Community.

The basic land uses contained in the current Master Plan remain largely the same, and include single-family units, multi-family units, a resort area, a golf course, commercial areas, parks, open space, and related infrastructure (see Figure 1-4). The location of some of these uses has been modified, and densities have been lowered for many of the residential areas. The current estimated unit count for the entire Kukui`ula Planned Community project is about 3,400 units – some 1,000+ units less than covered by the 1989 EIS.

The more significant of these changes to the location and type of land uses are as follows:

- The golf course has been re-designed such that golf course fairways are in the hurricane surge inundation zone, rather than the multi-family units as shown in the 1989 Plan.
- A 10-acre natural preserve has been designated in the east-central sector of the project site, on lands that were originally planned for single-family homes. This preserve is intended to protect the habitat of the rare Kauai blind cave spiders and cave amphipods.
- A 10-acre site for a Visitors' Center for the National Tropical Botanical Garden has been located in the southwestern sector of the property, on lands originally planned for a portion of the golf course. This site was conveyed to the Garden and the Visitors' Center, which was completed in March 1998, is now open to the public.

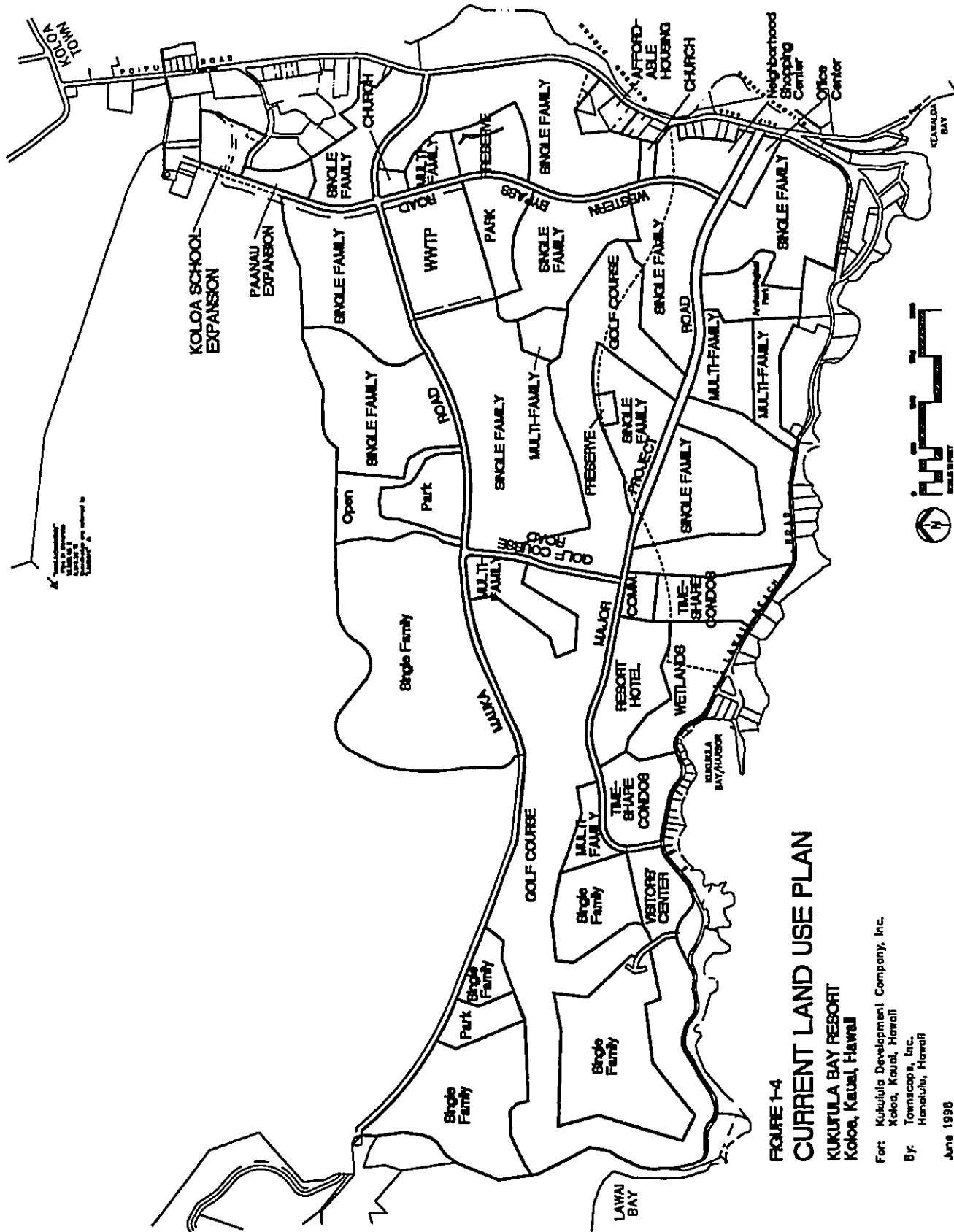


FIGURE 1-4  
**CURRENT LAND USE PLAN**  
KUKUI'ULA BAY RESORT  
Koloa, Kauai, Hawaii

For: Kukulua Development Company, Inc.  
Koloa, Kauai, Hawaii  
By: Townscape, Inc.  
Honolulu, Hawaii  
June 1998

- The concept of a small boat marina has been eliminated from the plan. The marina was found to be uneconomic, and the required permits would have taken many years to obtain.
- The resort concept has been modified to include a 200-unit hotel, two 150-unit timeshare condominiums, a 4-acre commercial site, and a 20-acre constructed lagoon/wetland ("lagoon") area that will serve as a wildlife habitat and central design feature for the resort. The new concept for the resort includes 77 acres of land, as compared with the 1989 concept of a 40-acre resort complex. The unit count is 500 units, with a potential effective unit count of about 700 units, if some of the timeshare condominium units are designed to be used as two separate visitor accommodation units ("lock-outs"). The details of this modified resort component are provided in the next section.

With the exception of the modifications to the resort area, and the planned lagoon, none of the changes to the 1989 Plan is considered to be significant in terms of changes to the environmental characteristics of the Plan. The relocation of golf course fairways into the storm surge inundation zone, the establishment of the lagoon, and the elimination of the marina should result in fewer impacts to the natural environment.

## **1.5 OVERVIEW OF THE PROPOSED ACTION**

Kukui`ula Bay Resort (the "Resort") is proposed to be developed on approximately 77 acres in the vicinity of Kukui`ula Bay. The Resort will consist of a hotel, two timeshare condominiums, a commercial site, a lagoon, and supporting landscaping, resort amenities, roadways, and infrastructure. The overall density of the site is about nine (9) units per acre. The proposed Kukui`ula Bay Resort is illustrated in the accompanying "Kukui`ula Bay Resort Land Use Plan" dated March 1998 (see Figure 1-5).

The hotel is planned for approximately 20 acres in the central area of the project site. This hotel is expected to be relatively low in density, and will have approximately 200 rooms.

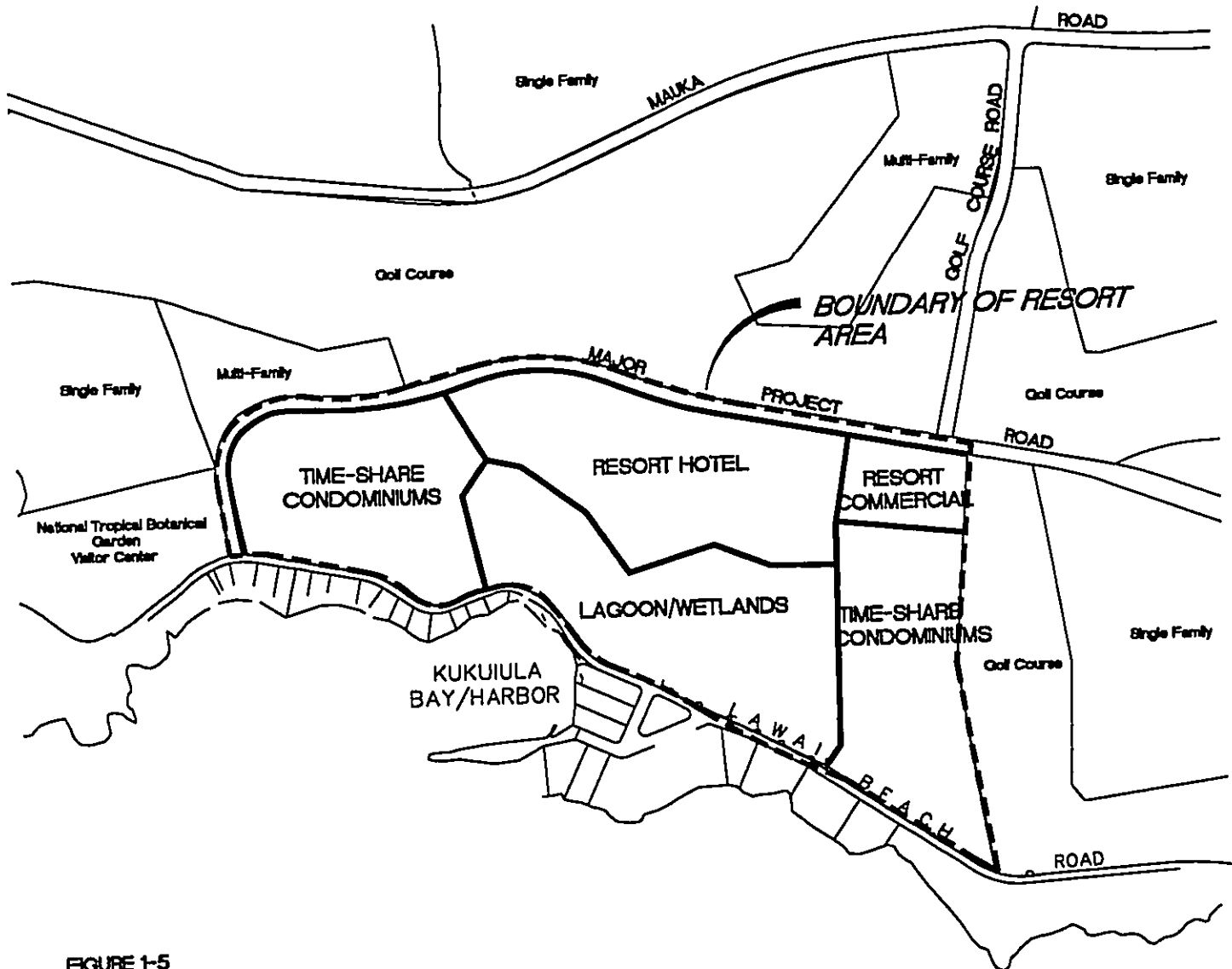


FIGURE 1-5  
KUKUI'ULA BAY RESORT  
LAND USE PLAN

KUKUI'ULA BAY RESORT  
Koloa, Kauai, Hawaii

For: Kukui'ula Development Company, Inc.  
Koloa, Kauai, Hawaii

By: Townscape, Inc.  
Honolulu, Hawaii

March 1998



Two timeshare condominiums are planned on the east and west side of the hotel. These two sites are approximately 15 acres each in size and are planned for approximately 150 units each for a total of 300 units. If "lock-outs" are provided for two-thirds of the units, an additional 200 units, for a total of 500 units, could be provided by the timeshare condominiums.

A commercial site is planned to be located between the hotel and the east timeshare condominium. This 4-acre site is envisioned to contain approximately 30,000 to 40,000 square feet of Resort-related retail, food service, and commercial space.

The unique component of this Resort complex is a lagoon in the central and makai area of the site. The lagoon is envisioned as the focal point of the Resort complex. The hotel, timeshare condominiums and commercial uses will all have frontage on the lagoon.

The lagoon site currently serves as a drainage detention/retention basin and will continue to serve that purpose. The 20+-acre lagoon site will be excavated to the groundwater table to provide a permanent water feature. This excavation will increase the stormwater runoff holding capacity of the basin.

The lagoon will be landscaped with wetland plants and stocked with fish. Islands will be created within the lagoon to provide habitat for endangered water birds, such as the Hawaiian Stilt, Koloa Duck, Common Moorhen, and Hawaiian Coot. A few of these birds frequent the site for foraging and it is expected that once construction of the lagoon is completed, many more endangered water birds will utilize this site.

## **1.6 ALTERNATIVES CONSIDERED**

The site of the proposed Resort was conceptualized for a number of alternatives. However, due to the site's relationship with Kukui`ula Harbor, the two most prominent alternatives were a Resort with a marina and a town center with a marina. These two alternatives were eventually eliminated because the marina proved too costly to construct in relation to the marginal economic benefits that would accrue and the uncertainty and great length of time needed for the approval process.

The “no action” alternative to keep the land in “Urban Residential” designation would mean that eventually, the site would be developed into other urban uses, most likely as multi-family units and commercial properties.

## **1.7 SUMMARY OF IMPACTS AND MITIGATION MEASURES**

### **1.7.1 Geography and Climate**

No adverse impact on the geography and climate are anticipated. Structures will be built at a minimum elevation of 15 feet above mean sea level to avoid damage from potential storm surge. The U.S. Army District Engineer preliminarily mapped the highest point of storm surge from Hurricane Iniki at approximately 15 feet. Also, structures will be built to post-Iniki building code standards that have been adopted by the County of Kauai.

### **1.7.2 Land Uses and Ownership**

A portion of the site is being used as a drainage detention/retention basin. When the lagoon is constructed, the drainage detention/retention function will be maintained. The detention/retention capacity of the drainage basin will also be increased.

A portion of the site is also being used temporarily to grow papaya and corn under short-term agreements. The Resort will replace the current agricultural use of the site.

To minimize impacts on surrounding land uses, a 100-foot building setback along Lawai Beach Road has been established fronting the Resort. This 100-foot setback area serves as a buffer to existing residential uses located along the shoreline in the vicinity of the Resort. The lagoon will also provide an additional buffer between existing residential areas and the Resort.

### **1.7.3 Soils**

The site contains Waikomo and Lihue soil series, of which a large portion has been graded for drainage facilities for the overall Kukui`ula project. The Waikomo soils normally might be difficult to grade because of their stoniness and shallow depth to bedrock. However,

extensive mass grading in 1992 has alleviated this problem, which will facilitate future grading work. Lihue soils are typically deep and are not expected to be difficult to grade.

The constructed drainage system will mitigate impacts on nearshore water quality from soil erosion. An erosion control plan will be developed for construction operations.

#### **1.7.4 Noise**

Short-term noise impacts will occur during construction. The establishment of start and stop curfew times, and use of mufflers on construction equipment and vehicles, will mitigate these impacts.

Long-term noise impacts from increased traffic and noise from the Resort are not expected to exceed allowable noise levels based on State Department of Health (DOH) criteria. However, landscaping, berms and walls could be used to buffer noise generated from the site.

#### **1.7.5 Air Quality**

With the closure of McBryde Sugar Company, the burning of sugarcane in the immediate vicinity of the project is no longer a source of air pollutants.

Short-term air quality impacts are associated with construction from dust and construction vehicle emissions. These impacts will be mitigated by implementing dust control measures in accordance with DOH regulations, such as frequent watering of the site.

Long-term air quality impacts will result from increased traffic and electric power generation. To mitigate increased emissions from motor vehicles, new and improved roadways will minimize idling time. Solar energy could be used to minimize the demand on electric power. Landscaping to provide shade would also reduce the use of air conditioners or fans for cooling.

#### **1.7.6 Flora**

The Resort site does not contain any rare, endangered or threatened plant species. The existing drainage basin area has been grassed and a portion of the site, mauka of the drainage basin, is temporarily planted in corn and papaya. The existing vegetation will be replaced with



landscape materials for the Resort and special wetland plants for the lagoon. No adverse impacts on the botanical resources are expected.

#### **1.7.7 Fauna**

A mauka retention basin on the site is frequented by endangered water birds as a foraging area (Hawaiian Coot, Common Moorhen, Koloa Duck, and Hawaiian Stilt). Construction of the project will cause a temporary impact on the available foraging grounds for these birds. However, once the lagoon has been constructed, the number of birds that currently visit the site will increase. The lagoon will thus have a positive impact on the bird population. The U.S. Fish and Wildlife Service and the State Department of Land and Natural Resources will continue to be consulted during the development of the lagoon to create a healthy environment for water birds and to minimize adverse impacts.

#### **1.7.8 Archaeology**

No archaeological sites of significance occur on the Resort site. However, if subsurface archaeological resources are uncovered, construction will stop and the State Historic Preservation Division and the Kauai Historical Review Committee will be consulted.

#### **1.7.9 Groundwater**

The lagoon will be excavated down to the ground water table to maintain a permanent shallow body of water. Non-potable water from existing reservoirs will be used to replenish water lost through seepage and evapotranspiration. The lagoon is located below the underground injection control (UIC) line and will not adversely impact the potable water aquifer.

Applicable permits for maintenance dredging of the lagoon or for lowering the water level after storm events will be prepared.

#### **1.7.10 Agriculture**

With the closure of sugar plantations on Kauai, including McBryde Sugar Company, large acreages of agricultural land on Kauai that were previously cultivated in sugar are being converted to diversified crops, but much land remains fallow on the island. State Department of Agriculture's survey results from farmers indicate that there are 214,000 acres of agricultural

land on Kauai. Of this total, only 43,000 acres are under cultivation. Thus, the Resort is not expected to significantly impact the availability of agricultural lands on Kauai or have a significant adverse impact on the agricultural industry.

Although McBryde Sugar Company closed its sugar operations in 1996, it has diversified into coffee through its Kauai Coffee Company subsidiary. McBryde has also placed previously cultivated sugar cane lands into pasture use and other diversified agricultural uses, including corn, papaya, bananas, and vegetables. A&B's 277-acre agricultural park northwest of the Resort site is also being used for growing papaya, bananas and vegetables.

Approximately 30 acres of the Resort site are temporarily being used to cultivate papaya and corn. Although these lands will no longer be available for cultivation, when the project is constructed, these agricultural activities may be relocated to other available sites on the island. In addition, these lands are designated for urban use on the Kauai County General Plan and by the State Land Use Commission.

#### **1.7.11 Visual Resources**

A small segment of mauka views from some of the existing residences along the makai side of Lawai Beach Road may be partially obscured when the project is constructed. A 100-foot building setback along the mauka side of Lawai Beach Road has been established to buffer the Resort from existing residences.

The ocean views from existing residences will not be affected because the Resort is mauka of these homes.

Once developed, the landscaping for the Resort and the large lagoon is expected to enhance the visual quality of the area. The lagoon will also increase the distance between the Resort structures and existing homes along Lawai Beach Road, further minimizing any adverse visual impacts.

#### **1.7.12 Population Characteristics**

The rate of population increase on Kauai is believed to have declined since Hurricane Iniki. This decline is in great part due to the poor economic climate in the State of Hawaii, and

particularly Kauai. Prior to Hurricane Iniki, the population of Kauai increased by an average of over 1,200 people annually. After Hurricane Iniki, the average population increase dropped to less than 700 people per year.

A study to assess community concerns was performed by Earthplan in April 1998. This study involved interviews with 47 community people who represented a wide cross section of interests to identify issues of concern relative to the Kukui`ula Bay Resort.

Concerns raised by the interviewees included increased traffic, crowding of beaches, influx of newcomers, and marketability of the Resort. The people wanted assurances that roadway improvements that are planned will be constructed. Suggestions were made to provide amenities at the Resort to alleviate the need to travel to nearby beaches.

The issue relating to the influx of newcomers received both positive and negative reactions. Some felt that the presence of newcomers had led to a weakening of community cohesion. Others felt that newcomers were an important resource in the community because newcomers were viewed as being financially or professionally successful people.

Some interviewees questioned the feasibility of a "non-beach" Resort. They felt that marketing efforts are important to compensate for the lack of beach frontage.

Generally, the interviewees felt that construction of this project would have a positive effect both socially and economically. They believed that the Resort would foster a feeling of hope and security in the community by contributing towards the economic revitalization of Kauai. Short-term and long-term employment would be created, and the project would provide a unique visitor accommodation that would enhance the visitor industry. Creation of the lagoon to support wildlife was also viewed as having a positive impact. Based on the study, the project is perceived to have a positive impact on the community.

### **1.7.13 Economic Characteristics**

Kauai's economy is largely dependent on the visitor industry, although agriculture still plays an important role. As a result of Hurricane Iniki, several hotels remain closed and it is uncertain when they will re-open. This Resort will provide unique visitor accommodations with its ecological theme.

Development of the Resort will support the visitor industry and assist in Kauai's economic revitalization. It is estimated that the Resort will create direct and indirect short-term construction employment of about 1,513 man-years of employment during the construction period. Full-time direct employment at the Resort is estimated at 460 jobs.

Construction of the Resort is estimated to cost \$125 million as follows:

a) Hotel	\$36 Million
b) Timeshare Condominiums	\$80 Million
c) Resort Commercial	\$6 Million
d) Lagoon/Wetland	\$3 Million

Use of public funds or lands is not expected.

#### **1.7.14 Market Assessment**

In light of the poor economic conditions in Hawaii and particularly on Kauai, a market assessment was recently conducted for the overall Kukui`ula project. The study concluded that the project's Resort component should be developed in the initial stages to create a "magnet" for both visitors and residents. Visitors would be attracted to this Resort because of the unique ecological theme and mid-price accommodations. Residents will be attracted to this area because it provides employment, thus creating a market for the residential component of the overall project.

#### **1.7.15 Flooding and Drainage**

Construction of the primary drainage system for the overall Kukui`ula project is largely completed. It consists of grass-lined drainage swales, detention/retention basins, and three 7' x 25' arch culverts at Kukui`ula Bay. The drainage system has been designed to retain excess stormwater runoff created by impervious surfaces within future developments. As the Resort is developed, a system of catch basins, underground pipes, box culverts, surface swales and retention basins will be installed.

As a beneficial result of the primary drainage system, it is estimated that silt entering Kukui`ula Bay has been reduced from 19,000 tons per year to 3,380 tons, thereby significantly improving the bay's water quality. The constructed drainage system for the overall Kukui`ula project has had a positive impact on coastal waters because it filters out silt prior to discharging storm runoff into Kukui`ula Bay.

Short-term adverse impacts from soil erosion could occur during construction of the Resort. However, these impacts can be mitigated by the implementation of erosion control measures using Best Management Practices approved by the County of Kauai.

#### **1.7.16 Potable Water**

The existing County potable water system is inadequate to service the demands from the Resort. To meet this demand, a new potable water well in Omao was developed by KDC. The estimated yield of this well is 1,050 gallons per minute (gpm). Two wells previously used by McBryde that produce over 4.0 million gallons per day (MGD) of potable water may also be added to the potable water system. At complete build-out of the Resort, potable water demand is estimated at 257,000 gallons per day (gpd).

To minimize demands on the potable water system, non-potable water will be used to satisfy water requirements for the lagoon and for irrigation of landscaped areas. Xeriscape plant material could also be used where appropriate to decrease the frequency of irrigation.

Plumbing fixtures throughout the Resort will be outfitted with low-flow devices to lessen water usage.

#### **1.7.17 Wastewater Treatment and Disposal**

A wastewater treatment plant was constructed by KDC for the overall Kukui`ula project. This wastewater treatment plant has a capacity to treat 1.2 MGD of wastewater and currently treats sewage generated from the Paanau Affordable Housing project in Koloa. The treatment plant has been designed to have an eventual capacity of 3.0 MGD to service the regional needs of the Koloa district.

Sewer lines and a sewage pumping station will be constructed to service the Resort. The alignment of the sewer lines will follow along roadways proposed for the overall Kukui`ula project.

#### **1.7.18 Circulation**

An updated traffic study was prepared for the overall Kukui`ula project to address potential impacts from the revised Resort plan. The study basically concluded that the changes in the Resort plan would result in only a nominal increase in traffic. Therefore, new and improved roadways that were described in the 1989 Plan are still generally valid.

Since the Resort is now planned to be constructed at an earlier stage of the overall project, the traffic study looked at alternative roadway access to the Resort. The analysis indicated that Lawai Beach Road has capacity to accommodate additional traffic. The Major Project Road and the Mauka Road, as shown on Figure 1-4, are also planned to provide access to the Resort.

A portion of the Mauka Road will be constructed in the near future as part of a 32-lot subdivision that is the first of the residential components to be developed for the overall Kukui`ula project. Signalization of the intersection of the Mauka Road with Poipu Road will be needed when 800 units are occupied.

When the Major Project Road is constructed to provide access to the Resort, the intersection of this road with Poipu Road and Lawai Beach Road will need to be reconfigured to form a cross intersection.

Roadway improvements identified in the traffic study will be implemented at the appropriate time.

#### **1.7.19 Solid Waste**

The Resort will utilize a private collection service to dispose of solid waste. Approximately 5 tons per day of solid waste will be generated by the Resort, assuming 100 percent occupancy of the hotel and timeshare condominiums (including the lock-outs), and 3 persons per unit producing 5 pounds of refuse per day, which is typical for most residential units.

The Resort units would be expected to produce less solid waste than a residence, and therefore the above estimates are considered conservatively high.

Recycling of paper, glass, plastics and metal will be encouraged at the Resort. During construction, recycled materials such as glassphalt or lumber made of recycled plastic could be used in lieu of traditional construction materials. Locally produced compost or compost made from plant trimmings from the Resort could also be used to reduce the volume of solid waste.

#### **1.7.20 Power and Communications**

Electric power is generated at the Port Allen Power Plant and overhead power lines have been installed in the vicinity of the Resort. Telephone and cable TV lines are also installed on the utility poles near the site. As part of the overall Kukui'ula project, including the Resort, a new electric substation and telephone switching station may be needed. If these facilities are needed, space will be provided within the overall Kukui'ula project.

To reduce electrical consumption, solar water heaters could be installed. Buildings could be designed with appropriate ventilation or tinted windows to reduce indoor heat. Landscaping around the buildings to provide shade will also reduce the use of air conditioners or fans.

#### **1.7.21 Fire Service**

The Koloa Fire Station, located a little over a mile to the east, will provide fire protection services for the Resort. To mitigate impacts on the Fire Department, structures will be designed with sprinkler systems and fire alarms in accordance with fire code requirements.

#### **1.7.22 Police Service**

The island of Kauai is divided into 10 sectors for police protection service. Each sector is assigned one police officer. The Koloa-Poipu area contains 2 sectors. To mitigate impacts on the Police Department, the Resort is expected to provide private security personnel and security systems to augment County police protection services.

### **1.7.23 Medical Facilities**

Medical facilities in the Koloa area consist of a branch of the Garden Island Medical Group and the Koloa Medical Group. Ambulance service is dispatched from an office near the intersection of Koloa Road and Poipu Road. No significant adverse impacts on medical facilities are anticipated as a result of the Resort development.

### **1.7.24 Schools**

Public school children in the Koloa District attend Koloa Elementary School and Kauai Intermediate and High School. As part of the overall Kukui`ula project, a 7-acre site has been set aside for expansion of Koloa Elementary School. A 12-acre school site will also be located within the overall project. The Resort will not impact school enrollment in the area.

### **1.7.25 Recreational Facilities**

Popular recreational activities in the Koloa district occur along the coastline. Development of the Resort will increase usage of these coastal recreational areas. However, the Resort and the rest of the Kukui`ula project will include recreational facilities for use by visitors. The most significant passive recreational facility at the Resort will be the lagoon. Recreational facilities planned as part of the overall Kukui`ula project include an 18-hole golf course, an archaeological park, several historical preserve areas and active and passive parks. These on-site facilities will help to mitigate impacts on existing recreational facilities.

## **1.8 UNRESOLVED ISSUES**

There are no known unresolved environmental issues associated with this Resort project. Major issues that have been identified can be adequately mitigated to reduce adverse impacts on the environment.



## 1.9 COMPATIBILITY WITH LAND USE PLANS AND POLICIES

The proposed Resort is generally compatible with the overall goals and objectives of the County and State. The site has been designated for urban development by both the State and County.

The Resort is expected to enhance the Kauai economy by providing a unique visitor facility that can be enjoyed by visitors as well as local residents. The project will also create short-term and long-term employment that will benefit the people of Kauai.

All necessary infrastructure will be developed to service the site to create a safe and healthy environment.

Creation of the lagoon will also have a positive impact on the environment by providing an enhanced habitat for endangered water birds. The population of such endangered water birds at this site is expected to increase due to the new habitat.

## 1.10 PERMITS AND APPROVALS

The following permits or approvals are expected to be required for the Resort.

<u>AUTHORITY</u>	<u>APPROVAL REQUIRED</u>
<u>Federal Government</u> Corps of Engineers	Wetland Certification for the detention/retention basin
<u>State of Hawaii</u> Department of Health	Dewatering Permit (if water is discharged into Kukui'ula Bay to lower the water level in the lagoon after a storm)
<u>County of Kauai</u> County Council, Mayor, and Planning Dept.	General Plan and Zoning Amendment Zoning Permit SMA Permit Subdivision Approval Visitor Destination Area Designation
Dept. of Public Works	Grading Permit Subdivision Plat Map Approval Erosion Control Plan
Building Department	Building Permits

### **1.11 PURPOSE AND NEED**

The proposed Resort has several purposes. The Resort will provide diversity in the type of visitor accommodations currently available to tourists on Kauai, it will provide for a secondary beneficial use of the detention/retention basin as a wildlife habitat, and serve as an "anchor" for the overall Kukui`ula project that will improve marketability of other planned uses. This project will also provide jobs and attract tourists to the island, thereby enhancing the visitor industry on Kauai. The Resort will contribute to the economic revitalization of the island, which is greatly needed.

## SECTION 2 – DESCRIPTION OF THE PROPOSED ACTION

The preceding section provides a context for this SEIS and describes changes made to the Kukui`ula Master Plan up to the present (April 1998). As described, the focus of this SEIS is on the changes made to plans for a 77-acre Resort. This SEIS is required because a change in the County of Kauai General Plan designation from “Urban Residential” to “Resort” is being sought.

The 77-acre site for the Kukui`ula Bay Resort is close to the shore of Kukui`ula Bay, but does not actually include any shoreline or beach frontage. The existing Lawai Beach Road separates the site from the shore. This lack of beach frontage was an important factor in the development of the conceptual plan for the Resort. Typically, a major resort hotel in Hawaii requires, among other attributes, a significant amount of beach frontage. In response to the lack of beach frontage, the Kukui`ula Resort is being planned to take advantage of other attributes, including lower density, a “Garden” theme, and pricing, for its success. The overall density of the 77-acre Resort site, including the lock-out units, is about nine (9) units per acre.

The Resort will contain visitor accommodations (hotel and timeshare), a commercial center, a lagoon, and related infrastructure (see Figure 1-5). The golf course that is planned as part of the overall Kukui`ula project will include fairways on the east and north sides of the Resort, with the clubhouse across the street to the north. The following is a detailed description of the components of the Kukui`ula Bay Resort project.

### 2.1 VISITOR ACCOMMODATIONS

Preliminary plans for the Kukui`ula Bay Resort envision the construction of a hotel with approximately 200 rooms on a 20-acre site that fronts on the lagoon; and two timeshare condominium projects containing a total of 300 rooms on two sites of approximately 15 acres each, which also front on the lagoon. Potentially as many as 66% of the timeshare condominium units could be further separated (“locked-out”) into two units each, thereby increasing the number of timeshare units from 300 to 500. The Resort’s total effective room count would thus be increased from 500 to 700 visitor units.

The hotel and the timeshare condominiums are planned to be low-rise structures ranging from one to four stories in height. The overall architectural style will incorporate forms, materials, and motifs from Hawaii's diverse cultural and artistic heritage. Preliminary conceptual plans envision a hotel of about 160,000 square feet and two timeshare condominium projects, each totaling about 262,500 square feet.

Each of these facilities will have its own amenities, including gardens, swimming pools, tennis courts, and landscaped paths. The hotel and condominiums will have a strong design relationship with the lagoon, as well as some views of Kukui`ula Bay and nearby coastal waters.

## **2.2 RESORT COMMERCIAL CENTER**

A 4-acre commercial site is located adjacent to the hotel. This commercial site was formerly shown on the 1989 Land Use Plan (see Figure 1-3) as a 10-acre site adjacent to the Resort and marina. The smaller commercial site proposed in the current plan reflects more modest development expectations for retail / commercial use at Kukui`ula. The 4-acre site would accommodate between 30,000 to 40,000 square feet of shops, stores, restaurants, and other businesses that would serve the Resort's visitors as well as the local residents.

## **2.3 LAGOON**

Central to this Resort concept is the creation of a man-made lagoon that will provide a unique ecological feature and amenity for the Resort. The lagoon will be created on the site of the existing 10-acre stormwater detention basin that has already been constructed as part of the master drainage system for the planned community. The edges of the detention basin will be reshaped into more natural lines, and "islands" of rock, soil, and indigenous vegetation will be created to add to the ecological value and visual interest. A shallow depth of water will be maintained throughout most of the lagoon to provide visual interest and a habitat suitable for wetland plants and animals.

It is expected that the lagoon will become a habitat for many species of birds, including some of the rare and endangered bird species that are known to exist in this region of Kauai: the

Hawaiian Stilt, the Hawaiian Coot, the Koloa Duck, and the Common Moorhen. The development program for the lagoon will include features that will maintain a viable habitat for these bird species, including water areas of suitable depth, appropriate plant species for food and nesting areas, and protection from predators such as feral cats, dogs and rats. The U.S. Fish and Wildlife Service and the Department of Land and Natural Resources have been consulted to establish a program of Best Management Practices to maintain a clean and healthy lagoon.

It is important to note that the stormwater retention/detention function of the existing retention basin will be continued after the basin has been converted into the lagoon. At present, the retention basin is part of the constructed drainage system that retains excess stormwater runoff from a 100-year, 24-hour storm from a developed 219-acre area. For storms of greater rainfall/runoff, the basin detains the stormwaters and allows the heavier loads of suspended soil material to precipitate out before the water flows over the earth berm separating the basin from Kukui`ula Harbor. The siltation basin will be converted to a lagoon by excavating an average of about three feet of existing soil material from the bottom of the basin. This excavation will extend to a depth of from six inches to several feet below the existing water table, thus creating a permanent shallow water lagoon. The net result of this excavation, from a stormwater management point of view, will be that the stormwater retention/detention capacity of the basin will be substantially increased to approximately 32-acre feet. This expansion will improve the basin's ability to reduce siltation in the nearshore waters.

#### **2.4 DRY DRAINAGE CHANNELS**

The two existing 100-foot wide grass-lined drainage channels that convey stormwater runoff to the existing siltation basin will be landscaped with local rock material and plants so as to become landscape amenities that complement the lagoon feature. These drainage channels will be incorporated into the gardens and pathways of the Resort by means of small pedestrian bridges that cross the channels at several points. The drainage channels will be dry except during significant storms.

## **2.5 ROADWAYS AND OTHER INFRASTRUCTURE**

Access to the Resort site is currently provided by Lawai Beach Road, an existing two-lane local road that links the various existing residential and condominium properties found along this section of the coast. Lawai Beach Road has the capacity to support additional traffic from a limited amount of future development, including the Resort's planned 200-room hotel. However, a new access road will eventually be needed to service the Resort's full development of 500 to 700 rooms.

KDC proposes to develop one of two alternate roads to provide access to the Resort. The first option will be to develop the first phase of the Major Project Road that runs from near the intersection of Poipu Road and Lawai Beach Road, westward to the Resort area – a distance of about 1.2 miles. This road will ultimately be a 4-lane roadway with a landscaped median and will provide access to over half of the development parcels within the Kukui`ula Planned Community. The first phase of development of this road would consist of the construction of a new intersection at Poipu Road/Lawai Beach Road and the Major Project Road, and about 1.2 miles of two-lane roadway to the Resort's entry.

The alternate plan would be to construct about 1.1 miles of two-lane roadway mauka of the Major Project Road (about 0.8 miles of the "Mauka Road" from the vicinity of the wastewater treatment plant to its intersection with the "Golf Course Road", and then about 0.3 miles of the Golf Course Road to its intersection with the Major Project Road). This alternate plan would also require the construction of about 0.2 miles of the Major Project Road from its intersection with the Golf Course Road to the entrance to the Resort.

For both roadway alternatives, the necessary lines for sewer, water, electrical power, and communications would be provided up to the boundary of the Resort site. Generally, these major utilities will be placed within the roadway rights of way.

A more detailed description of the planned infrastructure and utilities is provided in Section 5 of this SEIS.

## **2.6 ALTERNATIVES CONSIDERED**

Many alternatives have been considered for this Resort portion of the Kukui`ula Planned Community. However, the two concepts that have been presented to the community and public agencies are: 1) a marina, resort and commercial project (the 1989 EIS project); and 2) a town center with marina project (1993 State Land Use Petition project). Although these two concepts were viewed as providing an attractive focal point for the overall master planned community, the economics of constructing, operating and maintaining a marina could not support moving forward with these alternatives. The current Resort concept, which replaces the marina with a lagoon, would be less costly to construct and have fewer negative impacts on the environment.

The "No Action" alternative would mean that the site would eventually be developed into other urban uses, predominantly multi-family residential and commercial, as allowed under the "Urban Residential" designation of the County General Plan.

## **SECTION 3 – NATURAL ENVIRONMENT IMPACTS AND MITIGATION MEASURES**

### **3.1 GEOGRAPHY AND CLIMATE**

The island of Kauai is the fourth largest island in the Hawaiian island chain and is the northernmost and geologically oldest of the State's major islands. Kauai is a shield volcano and is classified as the Waimea Canyon volcanic series. After some weathering of the Waimea Canyon flows, volcanism was renewed and covered much of the weathered Waimea Canyon flows. The most recent flows occurred in the Koloa area, which is the vicinity of the project site. A more detailed description of the soil composition is provided in a subsequent section.

Kauai, like the other Hawaiian islands, has a mild semi-tropical climate. The northeast tradewinds blow approximately 80 percent of the time. During the winter months, the tradewinds are interrupted by cyclonic disturbances known as Kona storms.

The area of the 77-acre Resort and lagoon currently has an approximate elevation of between 4 and 40 feet above mean sea level (msl). The lagoon will be excavated to a lower elevation to create a wetland environment. Areas planned for the hotel, timeshare condominiums, and commercial uses will be graded to create level building pads for structures. The lowest elevation for structures is planned at 15 feet above msl, which was approximately the highest elevation of storm surge caused by Hurricane Iniki in this area, as shown on a draft map prepared by the U.S. Army District Engineer. (see Figure 3-1).

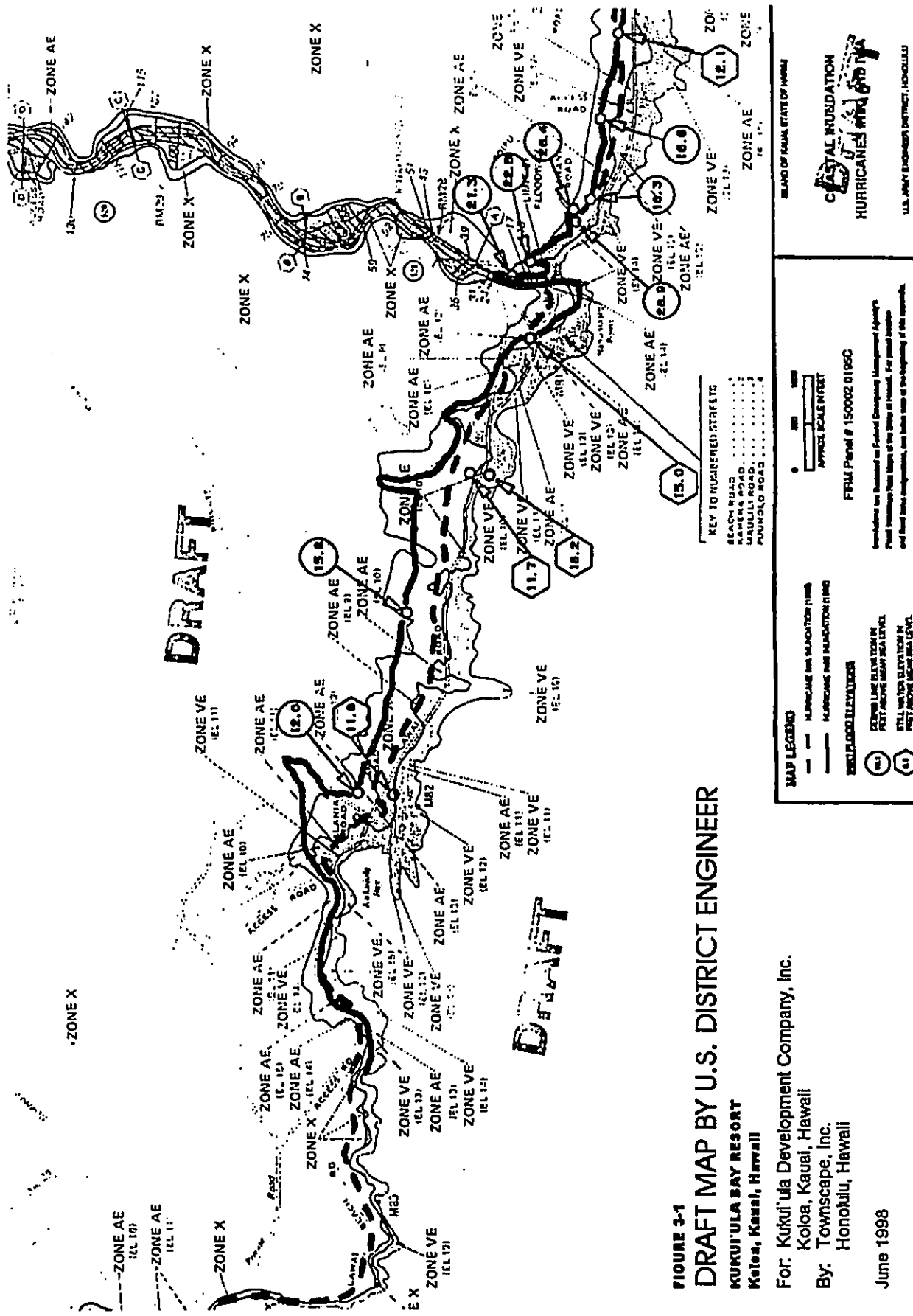
#### **A. Impacts**

No adverse impacts on the geography or climate are expected from the development of the project.

#### **B. Mitigation**

To minimize impacts on the development from future major storms, structures will be developed on lands with an elevation of 15 feet above msl or higher to avoid potential storm surge damage. Structures will also be built to post-Iniki building code standards that have been adopted by the County of Kauai.





### **3.2 LAND USES AND OWNERSHIP**

The Kukui`ula Bay Resort is situated on land owned by A&B-Hawaii, Inc. (A&B) and McBryde Sugar Company, Limited (see Figure 3-2). Kukui`ula Development Company, Inc. (KDC), a subsidiary of A&B, was established to manage the overall Kukui`ula Planned Community project, of which this Resort is a part.

Lands on the makai side of Lawai Beach Road contain individually-owned single family lots, with the exception of the County-owned Spouting Horn Park, State- and County-owned Kukui`ula Harbor, and a portion of Lawai Beach Resort (see Figure 3-3). Adjacent to and west of the Resort site is the 10-acre National Tropical Botanical Gardens (NTBG) visitors' center. This 10-acre site was conveyed to NTBG by A&B and is the first component of the Kukui`ula Planned Community project to be constructed and opened to the public.

Other nearby land uses include the Allerton Estate and the National Tropical Botanical Garden to the west; Kauai Coffee Company coffee orchards and pasture lands, and Knudsen Trust lands to the north; and Koloa Town, Kiahuna Resort and Poipu Resort to the east.

Portions of the Resort site are currently being cultivated with papaya and corn under short-term licenses to Irrigation Technology Corporation and Pioneer International, respectively. The papaya and cornfields were formerly sugarcane lands farmed by McBryde Sugar Company.

Future land uses in the vicinity of the Resort will consist of single family lots, multi-family units, an 18-hole golf course, parks, church sites, historic preservation sites, a school, a neighborhood commercial site, and a business commercial site. These future land uses are part of the proposed Kukui`ula Planned Community project, which is the only known major project planned in this region.

The area planned for the lagoon is currently the location of a drainage retention/ detention basin that was constructed for the initial phases of the overall Kukui`ula Planned Community project. This drainage basin will now serve a second purpose as a lagoon and Resort amenity. The drainage retention capacity of the basin will be increased when the basin is excavated to form the lagoon. Under the prior plan for the Kukui`ula Planned Community project, the retention basin was to be the site of a 10-acre marina.

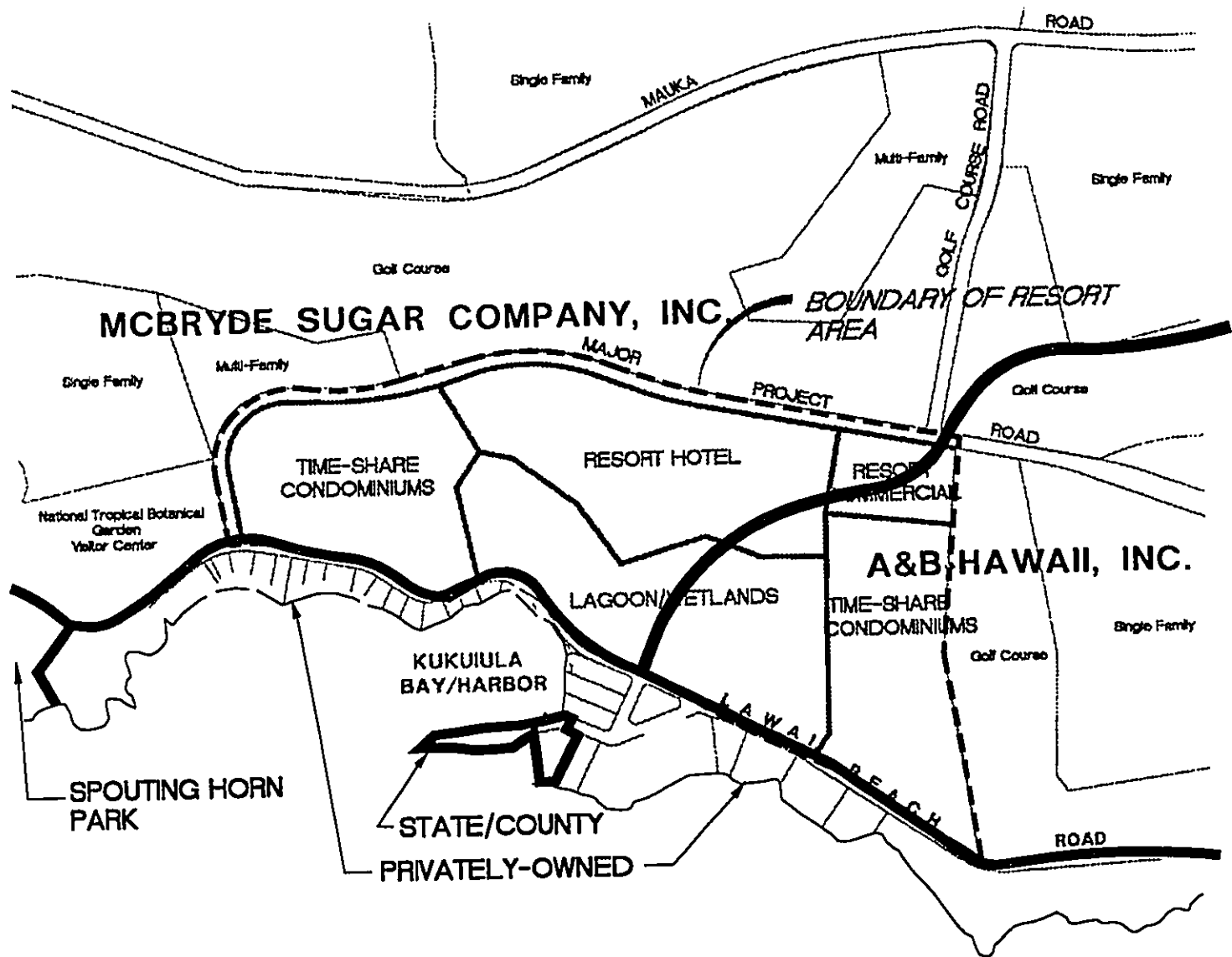


FIGURE 3-2  
**OWNERSHIP MAP**  
KUKUI'ULA BAY RESORT  
Koloa, Kauai, Hawaii

For: Kukui'ula Development Company, Inc.  
Koloa, Kauai, Hawaii  
By: Townscape, Inc.  
Honolulu, Hawaii

June 1998



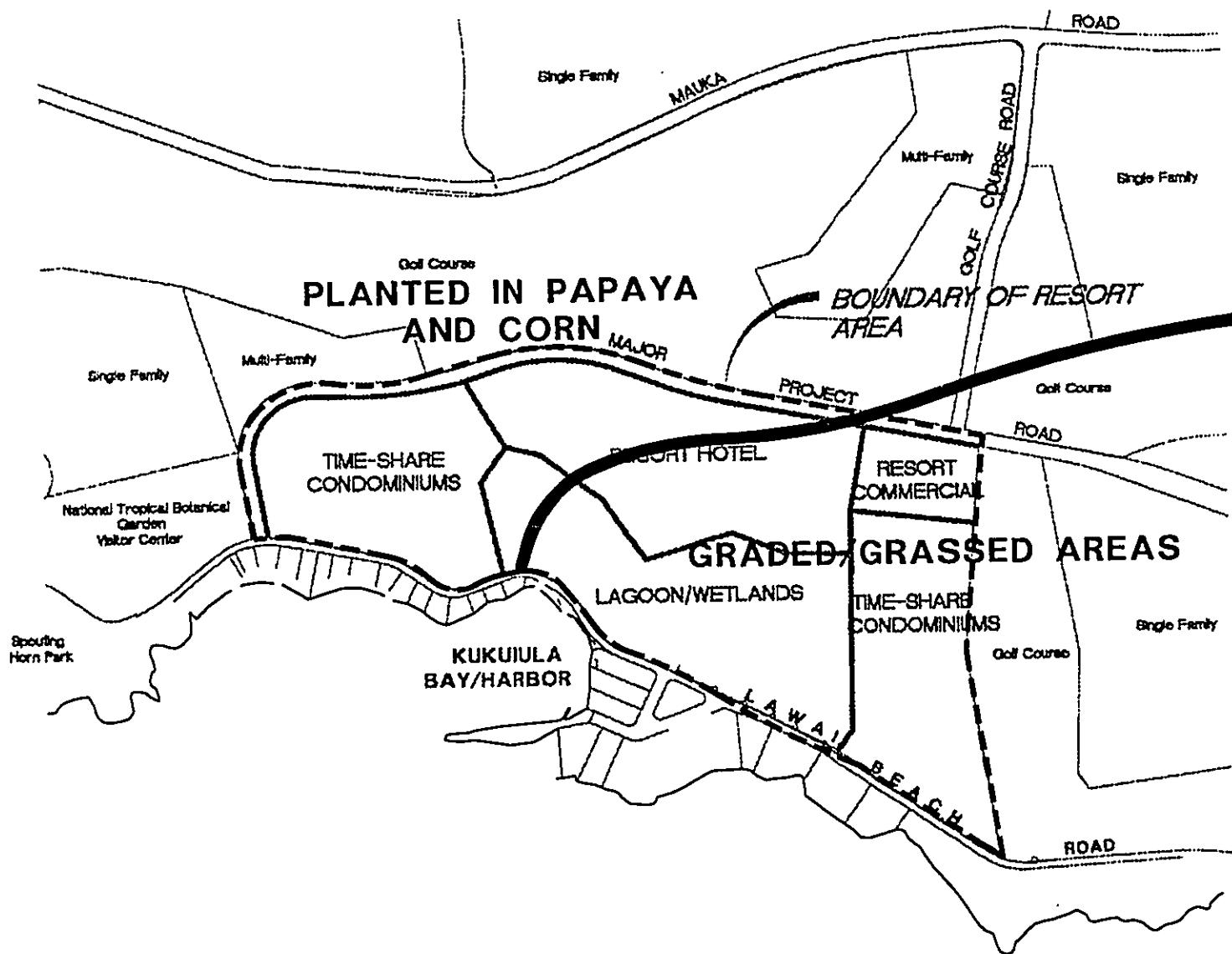


FIGURE 3-3  
EXISTING LAND USE

KUKUI'ULA BAY RESORT  
Koloa, Kauai, Hawaii

For: Kukui'ula Development Company, Inc.  
Koloa, Kauai, Hawaii

By: Townscope, Inc.  
Honolulu, Hawaii

June 1998



#### A. Impacts

Development of the Resort is not expected to have a direct effect on ownership and land uses surrounding the project. Areas that are currently under short-term agreements will be developed into the Resort. Additional information on the impacts on agriculture is provided in a subsequent section.

Development of the lagoon will maintain the site's current use as a drainage retention/detention basin and will increase the basin's stormwater holding capacity, which is a positive impact on the overall drainage system.

#### B. Mitigation

To minimize impacts on private properties located makai of Lawai Beach Road, a 100-foot building setback from Lawai Beach Road and extending into the Resort has been established. This setback will serve as a buffer between existing makai uses and the Resort site. Creation of the lagoon will further buffer the Resort and commercial uses from existing residential areas.

### 3.3 SOILS

The soils within the Resort site, according to the "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii," are identified as Lihue-Puhi Soil Association on the west side of the Resort and Waikomo-Kalihi-Koloa Soil Association to the east (see Figure 3-4). More specifically the soils consist of Waikomo very rocky silty clay (Wt), Waikomo stony silty clay (Ws), Koloa stony silty clay (KvB), Lihue Silty Clay (LhB, LhC), Pohakupu silty clay loam, and a small area of Nonopahu clay (NnC).

Waikomo soil series (Wt, Ws) are well-drained, stony and rocky silty clay. It is geographically associated with the Koloa soils (KvB) that have similar soil characteristics. Both soil types developed from weathered basic igneous rock. Depth to bedrock is about 20 inches. Areas that contain the Waikomo soil series have been graded for drainage purposes for the overall Kukui`ula Planned Community project. These areas are currently the site of the drainage detention/retention basin and grass-lined drainage swales.

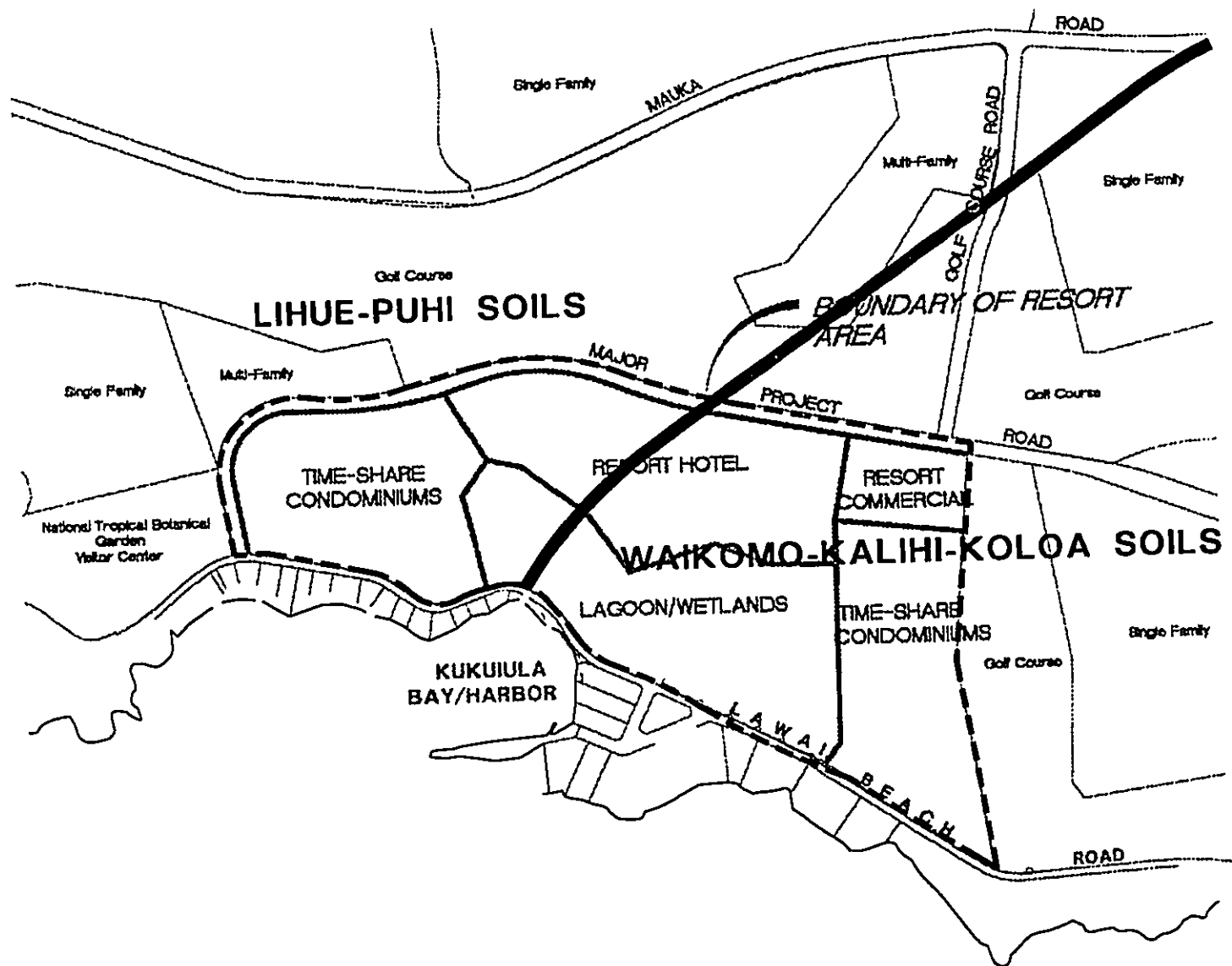


FIGURE 3-4

**SOILS MAP**

**KUKUI'ULA BAY RESORT**  
Koloa, Kauai, Hawaii

For: Kukui'ula Development Company, Inc.  
Koloa, Kauai, Hawaii

By: Townscape, Inc.  
Honolulu, Hawaii

June 1998



The Lihue soil series (LhB, LhC) are deep and well-drained soils. Depth to bedrock is over five (5) feet. This soil series also developed from weathered basic igneous rock. Currently, papaya and corn are being grown on these soils.

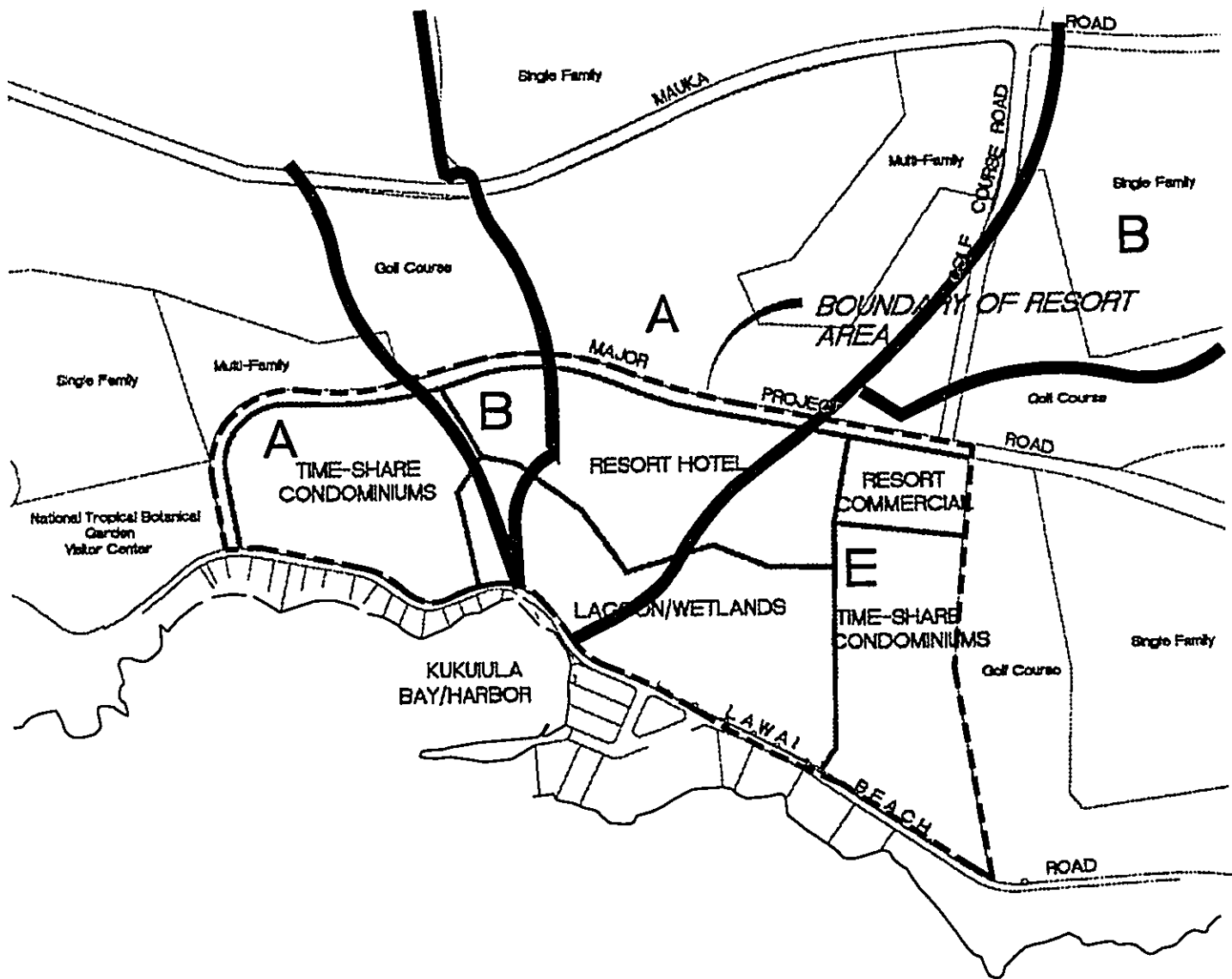
The Land Study Bureau (LSB) "Detailed Land Classification for the Island of Kauai," 1967, classifies the land comprising the Resort into three categories: A, B, and E (see Figure 3-5). The "A" rated soils, which are considered to have the best properties for agricultural productivity, are on the west side of the site and cover roughly three-fourths of the site. The "B" rated soils cover a small portion in the central area of the site and are considered to have good attributes for agricultural productivity. The remaining fourth of the site consists of "E" rated soils that have poor to very poor characteristics for productive agricultural uses. Most of the land within the "A" and "B" rated areas are currently planted in papaya and corn. The area with "E" rated soils has been graded for drainage purposes.

The State Department of Agriculture classifies land into four categories, based on physical and environmental conditions that contribute toward the production of sustained high yields of crops. This classification system is referred to as the "Agricultural Lands of Importance to the State of Hawaii" (ALISH). The four categories from high to low crop yield are: 1) Prime Agricultural Land; 2) Unique Agricultural Lands, 3) Other Agricultural Lands, and 4) Lands of no Agricultural Importance. The ALISH system classifies approximately two-thirds of the site as "Prime" agricultural lands (see Figure 3-6). The remaining third of the site consists of "lands of no agricultural importance".

#### A. Impacts

Excavation and grading for the construction of the lagoon and the Resort will be undertaken. The excavated material will be used as fill material in other areas of the project. Under normal circumstances, the Waikomo soils would be difficult to grade because of the stoniness and shallowness of the soil to bedrock. However, the site was previously graded for the existing drainage system and as a result, site grading operations for the Resort are expected to be less difficult.

During grading operations, soil erosion could occur in the event of a storm, resulting in short-term impacts on nearshore waters. Over the long term, the project should continue to have a positive impact on coastal waters because the lagoon will also serve as a drainage detention, retention, and siltation basin that will filter out the silt prior to discharge into Kukui'ula Bay.



**FIGURE 3-5**  
**LAND STUDY BUREAU MAP**

**KUKUI'ULA BAY RESORT**  
Koloa, Kauai, Hawaii

For: Kuku'ula Development Company, Inc.  
Koloa, Kauai, Hawaii

By: Townscape, Inc.  
Honolulu, Hawaii

June 1998

**LEGEND:**

- A Highest Productivity
- B
- C
- D
- E Lowest Productivity





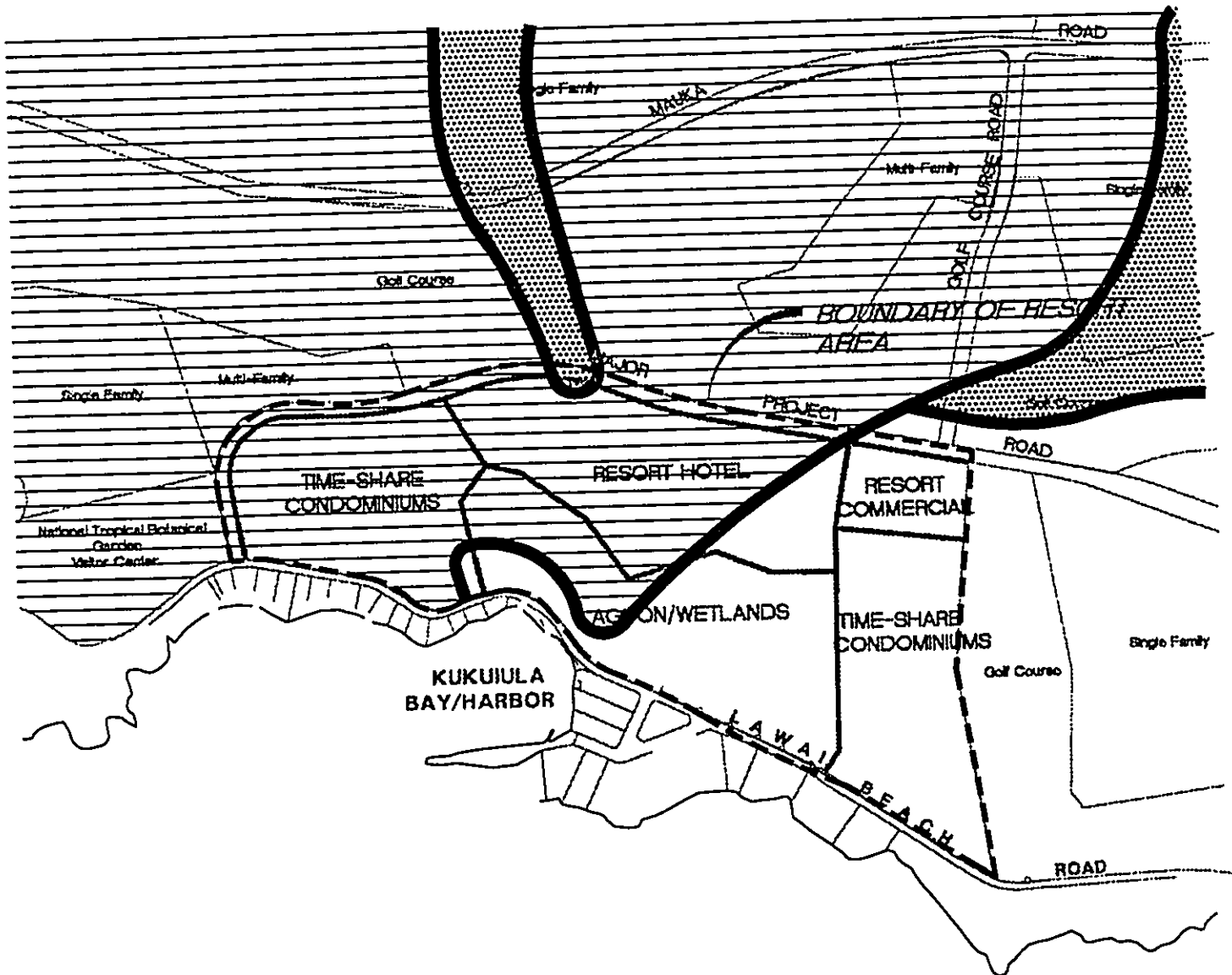





FIGURE 3-6  
**ALISH MAP**  
 KUKUI'ULA BAY RESORT  
 Koloa, Kauai, Hawaii

For: Kukui'ula Development Company, Inc.  
 Koloa, Kauai, Hawaii  
 By: Townscape, Inc.  
 Honolulu, Hawaii

June 1998

**LEGEND:**

-  Prime Agricultural Lands
-  Other Important Agricultural Lands
-  Land of No Agricultural Importance



**B. Mitigation**

Soil erosion impacts will be largely mitigated by the existing drainage retention/detention basins, which will be augmented through the use of Best Management Practices. Prior to grading, an erosion control plan will be developed to minimize the amount of silt entering coastal waters. This plan will describe the appropriate measures to reduce runoff into nearshore waters, such as limitations on areas to be cleared and requirements for establishing grass or other soil retaining vegetation. The erosion control plan will be reviewed and approved by the County of Kauai and DOH prior to any grading.

Should the excavated material be suspected of containing contaminants, the soil will be tested and disposed at an appropriate site in accordance with State and County regulations.

**3.4 NOISE**

As part of the 1989 EIS, a Noise Report was prepared by Darby & Associates. The study assessed existing noise levels and probable noise impacts during and after construction. Measurements of noise levels were taken alongside area roadways. The study concluded that short-term noise impacts would be associated with construction operations. Long-term impacts would be associated with stationary equipment, the commercial site, golf course maintenance operations, increased traffic, and (at that time) sugar cane operations. Due to the closure of McBryde in 1996, impacts from sugarcane operations in the vicinity of the Resort do not apply. Mitigation measures for impacts from golf course maintenance operations on adjacent uses are addressed in the original 1989 EIS.

**A. Impacts**

Short-term noise impacts will occur mainly during the construction stage of the project from construction equipment and vehicles.

Long-term noise impacts from commercial operations and stationary equipment will be generated, but these are not expected to exceed the allowable noise levels as defined by DOH criteria.

Comparison of existing volumes of traffic with projected traffic volumes indicated an increase of less than 2 dBA, which is an acceptable increase. Future noise levels were calculated based on a worst case scenario without attenuation from plantings, walls, etc.

**B. Mitigation**

Short-term noise impacts during construction will be mitigated through the establishment of start and stop curfew times and mufflers on construction vehicles and equipment. A permit will be obtained from the DOH that will contain the necessary construction noise conditions.

Although long-term impacts from increased noise from commercial operations, stationary equipment and traffic will not exceed allowable noise levels based on DOH criteria, increased noise levels can, if necessary, be mitigated by landscaping, berms or walls.

**3.5 AIR QUALITY**

An air quality study was included in the 1989 EIS. The report focused mainly on three sources of air pollution: industrial, agricultural and vehicular. At that time sugarcane was a major source of air pollution because of carbon monoxide and particulate matter resulting from the burning of sugarcane. The burning of sugarcane accounted for over 50 percent of the particulate matter in the atmosphere. With the closure of McBryde in 1996, the burning of sugarcane in the immediate vicinity is no longer a source of air pollution.

Sulfur dioxide is emitted from Citizen's electric power plant at Port Allen, approximately 6.5 miles west of the Resort. This is the only significant fixed-point stack emission source from industrial uses in the region.

With the relatively small amount of traffic that occurs in the area and mitigating effects of the prevailing winds, current impacts on air quality are not expected to exceed State standards. The Resort will increase the amount of traffic from motor vehicles, contributing to air pollution emissions.

**A. Impacts**

Short-term air quality impacts will be associated with construction activities. Construction activities will increase the air pollutants in the vicinity of the project from dust and construction vehicle emissions.

A long-term contributor to air pollutants will be the increase in vehicular traffic. Carbon monoxide will be increased, especially during the peak travel times and if traffic circulation causes vehicles to idle at intersections for long periods of time or to move at very slow speeds.

A second potential long-term, indirect air quality impact will be an increase in air pollution emissions at the Port Allen power plant caused by the electrical power consumed at the Resort.

Solid waste generated from the project will be landfilled. Therefore, air pollution emissions relating to solid wastes will be limited to exhaust from vehicles used to transport the solid waste to, and to place the refuse in, the landfills.

**B. Mitigation**

Dust control measures will be implemented during construction in accordance with DOH regulations. Frequent watering, for example, can reduce the amount of fugitive dust by as much as 50%, according to the Environmental Protection Agency (EPA) estimates.

Carbon monoxide emissions from vehicular traffic can be reduced by increasing the capacity of area roads, particularly at intersections. Since carbon monoxide emissions increase when vehicles idle at intersections, the roadways will be designed to minimize idling time by providing an efficient roadway network. Improvements to existing roadways are also planned to reduce impacts from motor vehicles on air quality. Details of traffic circulation are provided in a subsequent section of this SEIS.

The Federal air pollution control regulations are mandating stricter emission control standards for new vehicles, and therefore carbon monoxide emissions from motor vehicles are expected to decrease in the future.

Indirect impacts from emissions from the Port Allen power plant can be reduced by the use of solar energy. Structures can also be designed to maximize indoor light without increasing indoor heat. The use of landscaping can provide shade to minimize use of air conditioners and fans for cooling.

### **3.6 FLORA**

A botanical survey to inventory and assess the botanical resources of the overall Kukui`ula site, was conducted by Char & Associates in March 1988 and included in the 1989 EIS. The survey focused mostly on the eastern portion of the overall Kukui`ula site, which includes the Resort, that was not planted in sugarcane, areas along the edges of the cane fields, and pockets of rock piles within the cane fields. Open hillside pasturelands north of the Resort that were formerly used to grow pineapple were also surveyed.

The survey did not encounter any rare or endangered plants. Along the perimeter of the cane fields, weedy species such as finger grass, nutgrass, Bermuda grass and sleeping grass, were observed. The scrub pasture areas consisted mainly of four types of vegetative cover: koa haole thicket, lantana scrub, open mixed scrub and California grass.

Since this survey was performed, several hundred acres of land covered by the survey have been cleared, grubbed and planted with a variety of grasses for erosion and dust control, including a large portion of the Resort site.

An underground irrigation system has also been installed to water the drainage basin and drainage swales located mauka of Lawai Beach Road. These drainage features are periodically mowed and have the appearance of a large lawn.

#### **A. Impacts**

The Resort site does not contain any rare or endangered plants and no adverse impacts on the flora within the project site will occur. The development of the Resort will enhance the flora in the area through extensive landscaping for the Resort's grounds.

Special wetland vegetation will be planted within and around the lagoon to create a conducive habitat for water birds. A properly managed lagoon will have a positive visual as well as environmental effect.

#### **B. Mitigation**

A special report on wetland plants for the lagoon was prepared by William H. Magruder in March 1998 (see Appendix A). This report identified plant species that should be planted in and around the lagoon to create an appropriate habitat for water birds. The report also identified

plant species that should be eliminated, and species that can remain, should they appear naturally.

Eradication of undesirable plants will be implemented through the establishment of a Best Management Practices program for the maintenance of the lagoon. Because the lagoon serves as the central focal feature of the Resort complex, implementing a long-term maintenance program will be in the best interest of the Resort operators.

### 3.7 FAUNA

A survey of fauna was conducted by Dr. Andrew Berger in March 1988 and included in the 1989 EIS. The survey concluded that there were no rare or endangered terrestrial vertebrate animals on the overall Kukui`ula site. Most of the species observed were introduced by man. Two indigenous or native species were seen during the survey -- the black-crowned night heron and the golden plover. However, these species are not threatened or endangered.

Other animals found during the survey include geckos, skink, and nineteen species of introduced birds. Smaller mammals, such as rats, feral cats and dogs that prey on endangered forest birds, water birds, and domestic poultry were not seen on the site, but were believed to be present.

In March 1998, another faunal survey was conducted on the Resort site by Philip Bruner (see Appendix B). Three endangered water bird species were observed in the vicinity of a smaller retention basin located in the northeast sector of the Resort site: the Common Moorhen, Hawaiian Coot, and Hawaiian (Koloa) Duck. These three species are listed as endangered by both the U.S. Fish and Wildlife Service (USFWS) and the State Department of Land and Natural Resources (DLNR).

The migratory Pacific Golden Plover, Ruddy Turnstone, and Wandering Tattler were also observed. Some of the common and introduced species observed were the cattle egret, spotted and zebra dove, common myna, feral chicken, cardinals, and mannikin.

The detention/retention basin in the Resort site acts [primarily] as an intermittent foraging area after storm events [as a forage area] for birds, and does not have any appropriate nesting habitats for endangered bird species.

**A. Impacts**

Most of the common animals present on the Resort site will continue to thrive on or near the site, regardless of changes in the land use. The endangered water birds, however, may be temporarily displaced during construction.

Development of the lagoon will provide a new habitat for endangered birds, and will thus have a long-term positive impact on the environment.

**B. Mitigation**

KDC has consulted and will continue to consult with the USFWS and DLNR concerning the design and maintenance of a healthy and thriving habitat for endangered species. Design features, such as islands within the lagoon, will provide nesting habitats that are safe from predatory animals, such as feral cats, dogs and rats.

The U.S. Fish and Wildlife Service and the Department of Land and Natural Resources have been consulted regarding the temporary impact on endangered water birds during the construction of the lagoon. During construction, other foraging grounds are available at nearby irrigation reservoirs, other drainage basins in the vicinity of the Resort, and at the wastewater treatment plant ponds. Once the lagoon is constructed, the number and occurrence of water birds are expected to increase compared to predevelopment conditions.

Maintenance programs, such as nuisance plant eradication, nuisance animal control, maintenance dredging, odor control, and mosquito control, will be developed for the lagoon. In the initial stages after the construction of the lagoon, KDC will be responsible for maintenance operations. Once the surrounding Resort complex is developed, maintenance operations may be assumed by the Resort operator.

Pumps are planned to circulate the water in the lagoon to minimize the breeding of mosquitoes and odor from stagnant water. The lagoon will also be stocked with appropriate fish species, such as mosquito fish, to control the mosquito population.

**3.8 ARCHAEOLOGY**

An archaeological inventory survey was performed for the overall Kukui`ula site in March 1988 as part of the 1989 EIS. The survey identified 58 archaeological sites in a 1,000-acre area that

includes the Resort site. Many of these archeological sites contain multiple features, which total 150 in all. The sites consist of heiau's, agricultural complexes, habitation sites, burials, lava tube caves, and historic sites. Seven of the 58 sites found were recommended for preservation.

None of the 58 archaeological sites are in the area of the Resort. An archaeological data recovery plan was approved by the State Historic Sites Division and the County Planning Department in 1990, and data recovery has taken place for all of the sites within areas that were graded and improved with drainage facilities for the overall Kukui`ula Planned Community project.

**A. Impacts**

There are no archaeological sites in the area of the Resort complex.

**B. Mitigation**

Should subsurface archaeological resources of significance be uncovered during the construction phase of the project, construction activity will stop and the State Historic Preservation Division and the Kauai County Historic Preservation Review Committee will be consulted.

**3.9 CULTURAL PRACTICES AND FEATURES**

Historical research of the property indicates that the bulk of the low-lying portions of the Koloa lands were irrigated fields in prehistoric times. Early historical accounts describe an agricultural complex of taro, yams, sweet potato and sugarcane. Information on traditional farming in the area during the mid-1800s includes references to cattle and commercial sugarcane growing, indicating that market-oriented agriculture was beginning to dominate.

The Resort area is a portion of the lands that had been under commercial sugarcane cultivation from the late 1890s until the recent closure of McBryde Sugar Co. in 1996. The site contains no unique topographical features, and all identified archaeological sites are located outside of the Resort area.



**A. Impacts**

Based in part on the history of the area, the absence of natural and cultural resources at the Resort site and the current use of a portion of the site as a drainage basin, the impact of the development of the site on traditional practices appears minimal.

**B. Mitigation**

In the event a claim of cultural practices arises, KDC will work with the appropriate agency or organization to determine appropriate mitigation measures.

**3.10 GROUND WATER**

The Resort is located in the Lihue aquifer sector and is below the underground injection control (UIC) line established by the DOH. Test wells drilled in the area indicate that the ground water level in the vicinity of the lagoon is at approximately 3.5 feet above msl.

Initial monitoring of the test wells indicates that the ground water is not influenced by tidal changes. This finding implies that subsurface geologic features or soil conditions impede groundwater from percolating into nearshore waters.

To maintain a shallow water level, the lagoon will be excavated to slightly below the ground water level, approximately elevation 3 feet above msl. The perimeter of the lagoon will be excavated approximately three feet deeper to create a "moat" around the lagoon that will prevent predatory animals from entering the water bird habitat and allow access by boat for shoreline maintenance.

It is estimated that 45,000 gallons of water a day will be lost through seepage and evapotranspiration. This water loss will be replenished with natural ground water flow and existing irrigation water, primarily from the Aepoeha Reservoir located mauka of the site at approximately 200 feet above msl.

After a significant storm, the water level in the lagoon will be higher than desired and will partially or entirely submerge the lagoon's vegetation and "islands". To prevent damage to plants and bird habitat, the water level in the lagoon may need to be lowered, and several alternatives are being considered as follows:

- The excess water could be pumped back to the Aepoeha Reservoir, by using the irrigation line that supplies water from the reservoir to the lagoon.
- Water features will be developed within the golf course that is planned mauka of the Resort complex. The excess water from the lagoon could be pumped into these water features or used to irrigate the golf course a few days after the storm when the soils are less saturated. The golf course is located below the UIC line.
- Excess water could also be slowly drained into Kukui`ula Bay. For this alternative a permit will be required from DOH, and DOH will be consulted should the strategy of providing a “drain” for the lagoon be pursued.

**A. Impacts**

No adverse impacts on the supply of ground water are expected from the creation of the lagoon. Irrigation water that was previously used to irrigate sugarcane lands will be used to replenish the lagoon from water losses through seepage and evapotranspiration.

No adverse impacts from the excavated lagoon are expected on ground water. Potable water wells are located several miles mauka of the lagoon. Best Management Practices will also be established to maintain a clean and healthy environment for the benefit of the water birds that are expected to frequent the lagoon. In addition, the site is well below the UIC line and will not impact the potable water aquifer, which is generally contained in the Napali formation at a much deeper level.

**B. Mitigation**

If the alternative to drain the lagoon into nearshore waters after a major storm is pursued, then appropriate studies will be performed to ensure that no adverse impacts to nearshore waters and marine life will be generated.

### **3.11 AGRICULTURE**

An agricultural assessment study was prepared by Richard L. Bowen of Pacific Business and Economic Consultants for the 1989 EIS. The purpose of the study was to assess whether the withdrawal of sugarcane lands would have a detrimental effect on the availability of prime agricultural lands on the island of Kauai and in the State. At that time, approximately 180,000 acres State-wide, and 45,000 acres on Kauai, were in sugarcane cultivation.

According to the 1996 statistics from the State Department of Agriculture (DOA), approximately 69,000 acres in the State were in sugarcane cultivation with 26,500 acres on Kauai. Total agricultural acreage State-wide is 1,590,000 acres. Of that total, approximately 129,000 acres are being cultivated. For the island of Kauai, statistics indicate that total agricultural acreage is 214,000 acres with 43,000 acres under cultivation. Thus, approximately 171,000 acres of agricultural land are not in active agricultural production.

Although McBryde Sugar Company closed its sugar operations in 1996, it has diversified into coffee through its Kauai Coffee Company subsidiary. McBryde has also placed previously cultivated sugar cane lands into pasture use and other diversified agricultural uses, including corn, papaya, bananas, and vegetables. A&B's 277-acre agricultural park northwest of the Resort site is also being used for growing papaya, bananas and vegetables.

Approximately 30 acres within the Resort area are currently planted in papaya and corn under short-term licenses. These lands will be removed from cultivation when the project is developed, as stipulated in the license agreements.

#### **A. Impacts**

The development of the Resort will result in the loss of approximately 30 acres that are temporarily being used for papaya and corn production. Since there are other agricultural lands in this region of the island available for cultivation, removal of these lands from agricultural use will not have a significant impact on the agricultural industry or the availability of agricultural lands. In addition, these lands have already been designated for urban development on the County General Plan and by the State Land Use Commission.

### **3.12 VISUAL RESOURCES**

Although the Resort site does not have ocean frontage, views of the ocean are available from the site, especially at elevations of 40 feet above msl or higher. At lower elevations, views of the ocean are screened by existing residential structures.

The project site currently has the appearance of a large lawn (the drainage retention basin) with papaya fields along the mauka edge and a backdrop of the mountains. Under the 1989 EIS the view of the site was of sugarcane fields and scrub brush vegetation of koa haole and weeds.

Figure 3-7 shows a photograph of the existing view of the site from the jetty at Kukui`ula Harbor and an artist's rendering of the site after the Resort is constructed. As shown in the rendering, the view of the site is enhanced with the lush vegetation around the lagoon and Resort grounds.

#### **A. Impacts**

Except for the area immediately makai of the Resort site at Kukui`ula Bay, most of the coastal properties are privately owned. When the project is constructed, mauka views of the hillside from these residential areas may be partially blocked.

The project will change the existing visual quality of the land with the construction of the Resort structures and the lagoon.

#### **B. Mitigation**

A 100-foot building setback has been established along the mauka side of Lawai Beach Road. This setback area has been reserved for landscaping and pedestrian/bike paths and will serve as a buffer between the Resort complex and existing residences.

Creation of the lagoon and the associated landscaping is expected to enhance the visual quality of the area and create an additional buffer between existing residences and Resort uses. Landscaping is also planned within the entire Resort area to create a visually pleasing environment.

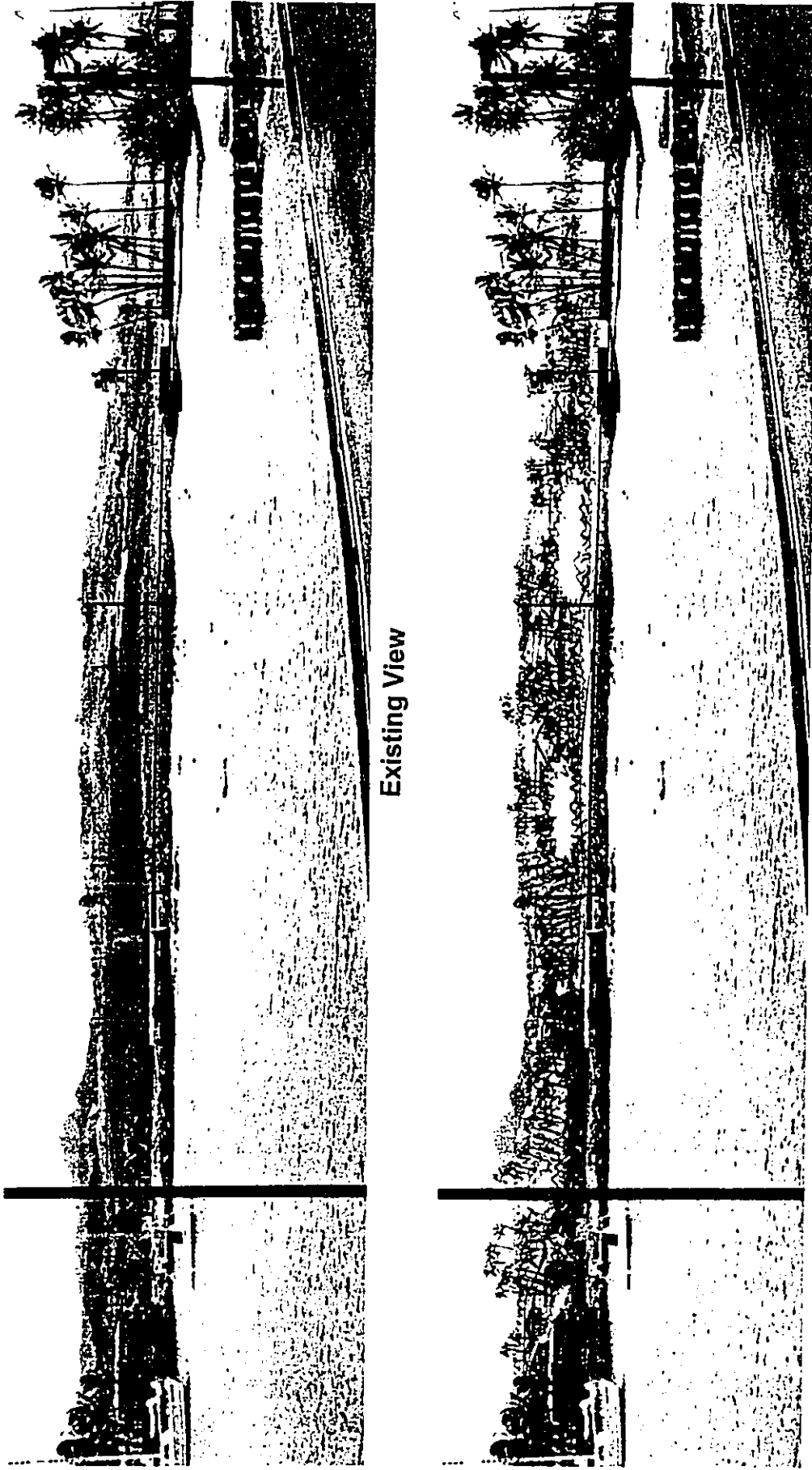


FIGURE 3-7

**EXISTING AND FUTURE VIEWS OF THE RESORT SITE**

**KUKUI'ULA BAY RESORT**  
Koloa, Kauai, Hawaii

For: Kukui'ula Development Company, Inc.  
Koloa, Kauai, Hawaii

By: Group 70 International  
Honolulu, Hawaii

June 1998

## **SECTION 4 – HUMAN ENVIRONMENT IMPACTS AND MITIGATION MEASURES**

### **4.1 POPULATION CHARACTERISTICS**

Kauai County has the smallest resident population of the four major Hawaiian islands, with approximately 56,000 residents in 1995 and a defacto population of 68,133 people, according to the 1996 State Data Book. A significant increase in Kauai's population occurred between 1980 and 1990 (30.9%). The Hanalei District had the highest increase in population with 73.6%, followed by Kawaihau with 48.9%, and Koloa with a 30.2% increase.

Recent social and economic trends indicate that Kauai will continue to experience population growth, but at a much slower pace. Prior to the Hurricane Iniki, the resident population of Kauai increased an average of over 1,200 people annually between 1980 and 1991. After Hurricane Iniki, the average annual increase in population dropped to below 700 people between 1992 and 1996 or 4.5%. The Koloa District in particular had a population increase during this period of only about 10%, down over 20% from the pre-Iniki population growth rate.

It was estimated in 1992 that Kauai would be operating in a recovery mode for three to five years following the hurricane, as indicated in the Comprehensive Annual Financial Report of the County of Kauai. Thereafter, population trends were expected to resume. However, the poor economic climate in the State of Hawaii and especially on Kauai, has slowed the rate of population growth on Kauai.

According to the 1990 census, the Koloa District had the second highest population count of the five Kauai districts with approximately 11,400 people. Because the Koloa District includes Poipu, one of Kauai's major tourist destinations, the population of Koloa could increase at a much faster pace than other Kauai districts. Population growth in Koloa is likely to result from the housing and employment created by the Kukui'ula Planned Community.

# CORRECTION

THE PRECEDING DOCUMENT(S) HAS  
BEEN REPHOTOGRAPHED TO ASSURE  
LEGIBILITY  
SEE FRAME(S)  
IMMEDIATELY FOLLOWING

## **SECTION 4 – HUMAN ENVIRONMENT IMPACTS AND MITIGATION MEASURES**

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#### A. Impacts

Development of the Resort is expected to indirectly stimulate population growth in the area. The Resort and its amenities may attract people to reside in the planned residential portions of the overall Kukui`ula project.

The project is viewed as having a positive impact on the population of Kauai because it will provide direct and indirect short-term construction employment and long-term employment for residents. Because of this increase in jobs, some Kauai residents may be encouraged to move to Koloa, Poipu, or Kukui`ula.

#### B. Mitigation

To mitigate the expected population growth that could indirectly occur in the Koloa area because of the employment opportunities and amenities, KDC is planning to provide housing, recreational amenities, commercial facilities, and community facilities (such as churches and school sites) as part of the overall Kukui`ula project. Kauai residents will have a choice of the variety of housing products that are planned and utilize the amenities and facilities planned.

### 4.2 SOCIAL ISSUES

An "Issues Analysis" study was prepared by Earthplan in October 1993 as part of the State Land Use Petition for the Kukui`ula Planned Community Project. The study's purpose was to identify and analyze community issues. An "Updated Issues Analysis" study was prepared by Earthplan in April 1998 for the new Kukui`ula Bay Resort project (see Appendix C).

The updated report analyzes issues of community concern relative to the current Kukui`ula Bay Resort project, and the following pages summarize comments of the 47 people interviewed for that study.

#### 4.2.1 Community Strengths

- **Community Participation and Cohesion** – The most common community strengths voiced were the vocalness of the community and community cohesion, especially after Hurricane Iniki. There was, however, a difference of opinion on the extent of

community cohesion. "Old timers" and "locals" were perceived to be cohesive, while others felt that newcomers were less cohesive, but played an integral part in a successful community. Newcomers were also viewed as being financially or professionally successful people, and therefore were considered an important resource for the community. School and youth related activities appear to bring people together to strive for common goals.

- **Small Town and the Environment** – The Koloa-Poipu area has a small town feeling because people know their neighbors and their children's friends, and can count on each other in times of need. The people of this community also enjoy the natural beauty of the area with its green mountains, beautiful beaches and sunny climate.
- **Economic Improvements and Compatibility with the Environment** – A broad economic base exists in Koloa, that includes agriculture, tourism and independent businesses, and there is a positive balance between its tourist-based economy and the environment.

#### 4.2.2 Community Problems

- **Economic Decline** – Concerns were expressed over the economic decline of Kauai since Hurricane Iniki. Some of the indirect effects are reflected in the number of children on reduced or free lunch programs (46% at Koloa Elementary School), and an increase in crime, including thefts of fruit trees and edible plants. This economic decline creates increased anxiety and despair on a personal level because there appears to be no visible solution to the problem.
- **Newcomers** – Long-time residents felt that the influx of newcomers has resulted in a lack of unity among community residents. Leadership has shifted to the more articulate newcomers and long-time residents have either lost interest or feel dominated.

- **Physical and Social Infrastructure** – Traffic concerns, including the intersection of Koloa Road and Poipu Road and morning traffic near Koloa Elementary School, were identified. It was noted, however, that the opening of the Easterly Koloa Bypass Road has relieved some of the congestion. An increase in tour buses along Maluhia and Lawai Beach Roads was also viewed as a problem.

Some of those interviewed cited the need for activities and facilities for young people to keep them busy and out of trouble, such as soccer fields, basketball courts and roller hockey rinks.

Interviewees also felt Kauai needed a place to legally dispose of old cars because cars are being abandoned in sugarcane fields and on undeveloped land. This leads to landowners gating their properties, thereby causing tension among community members.

Beach access is a concern because there are fewer places for people to gather and it is difficult to fish along the shore. Lack of parking areas and access restrictions along the coast have contributed to this problem.

- **Lack of Affordable Housing** – The lack of affordable housing in Koloa-Poipu was cited as causing people to commute to Resort-related employment in the Poipu area from Waimea, Hanapepe and Kapaa.

#### **4.2.3 Reactions to Kukui`ula Bay Resort**

##### **Positive Characteristics:**

- **Economic Stimulation** – The Resort project will stimulate the regional and island economy by providing “sorely needed” construction and long-term employment with positive indirect effects on other businesses. Koloa-Poipu needs a “big project” (the

overall Kukui`ula Planned Community Project) now to give people a sense of hope that economic conditions are improving.

A&B (the parent company of KDC) plays a major role in the Kauai economy because it provide jobs, carries out its commitments to the community, and contributes to community affairs. The Resort project would therefore be implemented responsibly and efficiently.

- **Environmental Effects** – Elimination of the marina was viewed positively by non-boaters. Of particular concern was dredging of Kukui`ula harbor, which would have been required for the marina.

The siting of buildings within the Resort area mauka of Lawai Beach Road was viewed positively. The creation of the lagoon also received positive comments because it would provide habitat for rare and endangered species, and would be consistent with the current function as a drainage basin.

- **Aesthetics** – The Resort was viewed as having a positive aesthetic effect. The landscaped buffer area between Lawai Beach Road and the Resort was also received well.

#### **Potential Problems**

- **Population and Density Issues** –The Resort was viewed as a potential cause of increased traffic, overcrowded beaches, and an influx of newcomers.
- **Feasibility and Marketability** – The feasibility of a “non-beach” Resort was questioned. Marketability of the Resort was viewed as being important to compensate for the lack of beach frontage.

- **Project Emphasis** – Due to the focus on the Resort component of the Kukui`ula Planned Community, assurances were needed that the residential component of the overall master plan would still be implemented, since the community's support was primarily for a residential community with other uses.
- **Concerns of Nearby Residents** – Residents south of the Resort were concerned about the development of a mid-priced hotel that could potentially have a negative impact on the value of their oceanfront property. Their privacy and quality of life was also viewed as being threatened because of the clientele frequenting a mid-priced hotel. Residents also felt that Lawai Beach Road could not handle many more cars.

#### 4.2.4 Reactions to Resort Components

- **Hotel** – There were mixed views on the mid-priced quality concept for the planned hotel. Some felt that a mid-priced hotel would diversify the visitor unit supply and attract visitors from other islands. Others felt that the reputation of Poipu as a five-star resort would be negatively impacted by the development of a mid-priced hotel.

Although the Resort's hotel would create employment, most of the new jobs were viewed as being low paying and entry-level.

The low-rise buildings planned for the hotel were viewed favorably.

- **Timeshare Condominiums** – The timeshare condominiums also received mixed comments. Timeshare products have proven successful and these visitors tend to stay longer, spend money and be sensitive to the local community. However, Kauai was pointed out as having the highest proportion of timeshare units of any of the major islands. Kauai's over-dependence on one visitor product was not viewed positively. Others felt that timeshare visitors are not good shoppers and tend not to frequent restaurants because they are on limited budgets.

Marketing techniques for timeshare units were criticized as being misleading. In addition, timeshare units are not subject to the same tourist accommodation tax as hotel units. This was viewed as unfair because timeshare units benefit from the visitor industry. (Senate Bill 2259 was passed in the 1998 Hawaii State Legislature, which will impose a Transient Accommodations Tax ("TAT") on timeshare units.)

- **Botanical Theme and Wetlands Concept** – The botanical theme and lagoon were received well. This concept would give the project a unique character and offer opportunities for ecotourism and visitor education, and is an environmentally responsible way to handle the drainage function. Full access to the area was desired as a community resource.

There were numerous suggestions on the implementation of the Resort project in terms of architectural design, roadway improvements, utilities installation, landscaping, development sequence, marketing, etc. These suggestions will be considered in later stages of the project.

Of greater importance was the identified need for economic revitalization. In 1993, the community was in a hurricane recovery mode with significant construction activity. People were hopeful of a full recovery. However, five years have passed and three hotels still have not re-opened (Waiohai, Poipu Beach Resort and Coco Palms Hotel). Many residents have left Kauai, while others are surviving with less income than they had five years ago. There is a feeling of economic uncertainty and helplessness in the community.

Most of the people were knowledgeable about the Kukui`ula Planned Community project and wanted to see it built as soon as possible because of its economic benefit to the community. They also wanted to be assured that other components of the overall project, such as the residential areas, parks, and golf course be implemented soon.

**A. Impacts**

The project is viewed as having a positive impact on the social and economic climate of the community by providing short-term construction employment, longer term, direct and indirect employment, and a unique visitor accommodation to enhance the visitor industry.

Increased traffic, crowding of beaches, influx of newcomers, and marketability of the Resort were major issues raised.

**B. Mitigation**

To mitigate the concerns of the community, the roadway improvements will be implemented at the appropriate time, amenities will be part of the Resort to reduce the need to travel to areas outside the Resort, and marketing strategies will be developed to compensate for the lack of beach frontage.

**4.3 ECONOMIC CHARACTERISTICS**

The civilian labor force for the island of Kauai in 1996 was 29,000. Of that number, 25,500 were employed and 3,500 (12.1%) unemployed. This level of unemployment is very high compared to the other counties. By comparison, Oahu had 5.3 percent unemployment, Maui had 7.3%, and the Big Island had 9.9%. Nonagricultural employment on Kauai totaled 24,250 jobs and agricultural jobs totaled 1,250, not including self-employed and unpaid family workers.

Kauai County's livestock and crop sales in 1995 were approximately \$58 million. Of this total \$35 million was for unprocessed sugar.

Approximately 970,000 tourists visited Kauai in 1996. This represents an increase of approximately 54,000 people from 1995. However, prior to Hurricane Iniki, visitor arrivals on Kauai were well over a million people. Visitor expenditures in 1994 totaled approximately \$638 million.

The average per capita income for the County of Kauai in 1994 was \$21,198, compared to the State average of \$24,030.

Based on a development cost for the Resort of approximately \$125 million, and assuming 50% of the development costs are attributable to labor wages and benefits of \$74,000 per worker, approximately 845 full-time construction jobs would be created by the Resort's development.

The construction phase of the entire Resort complex (hotel, timeshare, commercial and lagoon) is expected to take approximately 5 to 10 years to complete, thus creating between 85 and 169 direct construction jobs a year. Indirect employment generated by the construction of the project is estimated at an additional 668 full-time positions, based on 0.79 indirect jobs per full-time position. Thus, a cumulative total of 1,513 full time jobs are estimated to be created over the 5 to 10 year construction time period, or between 151 and 303 jobs per year.

Assuming that the direct construction jobs generate an income of \$50,000 (exclusive of benefits) per job per year and the indirect jobs generate an income equal to Kauai's 1994 average annual per capita income of \$21,200 per resident, direct and indirect jobs would generate approximately \$57 million in aggregate personal income over the project's 5 to 10-year construction timetable.

Long-term employment would be created by the hotel, timeshare, and commercial facilities. At a ratio of one job per one hotel room, 200 jobs would be created by the hotel. Because timeshare units do not have the same maintenance requirements as a hotel, approximately 100 permanent jobs are estimated for the 300 timeshare units and 200 potential lock-out units.

It is estimated that approximately 40 jobs per 10,000 square feet of gross leaseable retail space will be created. Thus, the Resort's planned 40,000 square feet of commercial space should create as many as 160 jobs.

Based on the above, the entire Resort complex could create a total of 460 permanent jobs. Based on Kauai's 1994 per capita annual income, these jobs would generate a total of nearly \$7 million of personal income annually.

Use of public funds or lands for the development of the Resort is not expected.

#### **A. Impacts**

Economic activity on Kauai will increase significantly from the development of this project. During the construction phase of the project, an estimated \$125 million (in 1997 dollars) will be spent for the construction of infrastructure, and for the hotel, timeshare, commercial and lagoon facilities. Indirect jobs generated by this economic activity will also add to the island's economy.

Increased County and State tax revenues will be generated from construction activities, business activities, and real property taxes. The 1997 real property tax allocated to the 77-acre



Resort site is currently estimated at \$182. At build-out, the Resort (excluding the lagoon) would generate real property taxes of approximately \$930,000 per year, based on 1997 tax rates.

Short-term construction employment and full time permanent employment opportunities will be created by the various components of the Resort. These impacts are viewed as having a positive impact on the island's economy.

#### **4.4 MARKET ASSESSMENT**

A market assessment was conducted for the Kukui`ula project in September 1996 by the Sedway Kotin Mouchly Group (see Appendix D). The following is a summary of the applicable sections of the market assessment as it pertains to the proposed Resort.

The assessment concluded that the greatest potential for the Kauai economy is in visitor-related, leisure and second-home markets. A major constraint to the growth of the tourist industry on Kauai is access, particularly from the U.S. mainland. At the time of the preparation of the market assessment, the Lihue Airport did not have non-stop flights to the mainland west coast. The study estimated that two daily wide-body flights to California could increase visitation to the island by over 20 percent. On June 10, 1998 United Airlines will resume daily direct flights between Kauai and the U.S. mainland. A diversity of visitor facilities will be needed to accommodate this increase in tourists to Kauai.

Because Kauai's economy is largely dependent on the visitor industry, development of a hotel as an "anchor" to the overall Kukui`ula Planned Community project was recommended for the initial stages of the project to create a "magnet" for the Resort. The assessment also recommended a mid-priced hotel that would have an environmentally appealing "ecotourism" image, with low-density/low-rise structures. Development of the Resort with special water features, and a variety of resort facilities and amenities with an ecological theme, will provide a unique visitor accommodation that would complement and provide diversity for existing hotels in Poipu.

By creating full-time employment at the Resort, other components of the overall Kukui`ula Project, such as the residential uses, will be in greater demand.

Timeshare condominiums are well established on Kauai. There will continue to be a strong market for this type of visitor accommodation, especially when constructed adjacent to a hotel.

A small Resort-oriented commercial center between the hotel and timeshare condominium was viewed as providing a strong economic asset for the project, especially over the long term. Successful models in the State include Whaler's Village in Kaanapali, Maui and Kings Shops at the Waikoloa Resort, Hawaii.

There is a demand for marina boat slips on Kauai. However, marinas do not generate economic value, especially in light of the high cost of development. Given the capital cost required for the marina, its relatively small economic benefit, and the uncertainties associated with extensive permitting requirements, the marina was eliminated from Kukui`ula's plans. The lagoon that is now planned to take its place would be more compatible with the "ecotourism" theme envisioned for the Resort.

Other development possibilities that were examined for the Resort included a spa hotel, and a high-tech hotel with facilities for telecommunications and access to online computers.

**A. Impacts**

The project is expected to have a positive impact because it will provide a unique vacation experience that will attract a growing market of ecologically and environmentally sensitive visitors. The Resort would add very positive diversification to the current inventory of existing hotel accommodations in Poipu.

## SECTION 5 – PUBLIC FACILITIES AND SERVICES

### IMPACTS AND MITIGATION MEASURES

Inasmuch as the Resort is part of the overall Kukui'ula Planned Community project, information on the infrastructure described in this section reflects the plans that are being pursued for the overall project. Some of the major project infrastructure has already been completed, such as a wastewater treatment plant, a new potable water well, and a large portion of the drainage system, including three 7' x 25' arch culverts at Kukui'ula Bay.

#### 5.1 FLOODING AND DRAINAGE

The drainage system that has been designed for the overall Kukui'ula project has been largely completed (drainage swales, drainage channels, and detention/retention basins). When construction commences on the new roadways, a network of underground drainage pipes and box culverts will be installed to direct stormwater runoff into the above-ground drainage swales and detention/retention basins.

A large drainage swale has been constructed above and east of the Resort site (see Figure 5-1). Mauka flows are being captured in this drainage swale, which also provides a series of detention/retention basins leading to a large detention/retention basin mauka of Kukui'ula Bay. This latter basin is connected to the ocean by three 7-foot high by 25-foot wide arch culverts. A 7-foot high berm separates the detention/retention basin from the culvert system, thereby providing storage, but allowing overflow during severe storm events. The drainage basins are dry most of the year except after a storm event.

This drainage system is designed to retain excess stormwater runoff from a 100-year, 24-hour storm for a developed "Phase 1" condition, which originally encompassed an area of approximately 219 acres. In greater storm events, the system detains floodwaters, allowing sediments to precipitate out prior to being discharged through the culverts.

In later phases of the overall project, the grass-lined drainage swales and channels will be incorporated into an 18-hole golf course. Portions of the golf course will be designed with drainage retention / detention basins to serve a dual purpose as a recreational amenity and as a major component of the drainage system. The golf course fairways along the makai side of the project also have been strategically located to mitigate impacts from hurricane storm surges.

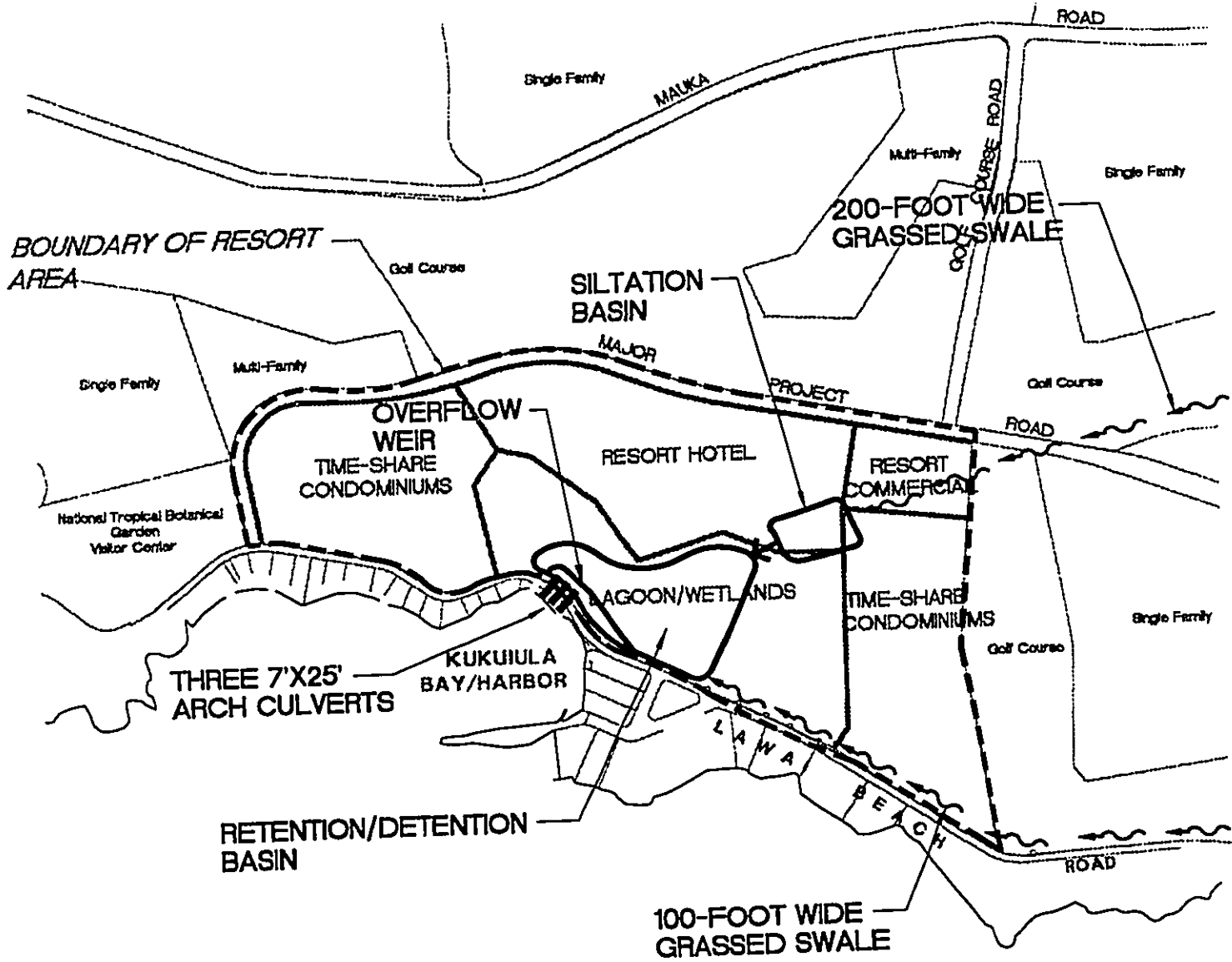


FIGURE 5-1  
**DRAINAGE SYSTEM**  
KUKUI'ULA BAY RESORT  
Koloa, Kauai, Hawaii

For: Kukui'ula Development Company, Inc.  
Koloa, Kauai, Hawaii  
By: Townscape, Inc.  
Honolulu, Hawaii

June 1998



The drainage system within the overall project, including the Resort, will be a system of catch basins, underground pipes, box culverts, surface swales and retention basins. At full build out of the 1,040-acre development, the volume of water that is expected to discharge at Kukui`ula Bay is approximately 1,500 cfs (cubic feet per second) and the peak discharge rate during the 100-year, 24 hour storm will be approximately 3,000 cfs.

Since completion of the drainage system in 1993, it is estimated that sediment entering Kukui`ula Bay has reduced from 19,000 tons per year to 3,380 tons per year. In addition, stormwater runoff and sediments that previously discharged through other outlets along the coastline are now being diverted to the outlet at Kukui`ula Bay.

**A. Impacts**

During construction of the Resort, the land will be cleared and graded, which will increase runoff of stormwaters. Short-term soil erosion is possible since there will be no vegetation to reduce the velocity of water and no vegetal root systems to hold the soil in place.

**B. Mitigation**

During construction, drainage impacts will be mitigated by following erosion control plans approved by the County of Kauai and DOH prior to construction. Additionally, for work areas greater than 15 acres, an NPDES Permit will be required, which will prescribe a set of Best Management Practices to protect the receiving waters from impacts due to construction runoff.

Since much of the drainage system has already been constructed and the drainage swales have been grassed, soil material that could potentially enter receiving waters is not expected to be significant.

The drainage system has reduced impacts on coastal waters and improved water quality. A coastal water quality monitoring program has been implemented since the construction of the existing drainage system. This monitoring program reflects an increase in the salinity of the waters immediately seaward of the drainage outlet, indicating that the volume of runoff water entering the ocean has been reduced. This monitoring program has been ongoing since 1991 to the present. The program checks a number of factors in coastal waters from Lawai Beach Resort to the Spouting Horn Park. Some of these factors include temperature, salinity, pH and turbidity. Future improvements to the drainage system will further improve this situation.

## 5.2 POTABLE WATER

The potable water system that currently services the Koloa/Poipu area consists of two source wells in Waihonu and two wells on the ridge above Mahaulepu. These wells are operated by the Department of Water Supply (DOW) of the County of Kauai. The wells at Waihonu are rated at 500 gallons per minute (gpm) per well and the wells at Mahaulepu are rated at 1,200 gpm.

The initial planning for the water system to serve the overall Kukui`ula Planned Community project was predicated on the assumption that KDC would build and operate a private water system that would be totally independent of the system operated by DOW. More recently, discussions have commenced with the DOW to determine the feasibility and desirability, from the standpoint of both KDC and DOW, of serving Kukui`ula with the public potable water system.

Public water service to Kukui`ula would allow KDC to phase some of the improvements over time, thereby reducing the initial investment. DOW would benefit from KDC's ability to finance construction of major capital projects that are needed in the Koloa area. The combined system would also benefit from looping and redundant improvements that would improve the reliability of the system.

A well has been drilled by KDC near Omao. This well has been tested and is expected to yield approximately 1.0 MGD at a withdrawal rate of 1,050 gpm for approximately 16 hours a day. This well has not yet been outfitted and tied into the County system.

Based on studies performed in conjunction with the Water Master Plan for the overall Kukui`ula Project and the development of the well, the well is located within the Koloa Aquifer System that has an abundance of groundwater controlled by a complex subsurface geology. High level water is found in the Koloa formation and basal water occurs below the Koloa formation in the Napali formation.

The Koloa formation covers the coastal areas, which prevents basal water in the Napali formation from entering the ocean. High level and perched water in the Koloa formation, however, enters the sea along the coastline or seeps into gullies and streams. Most wells have been drilled to sufficient depth to draw basal water from the Napali formation. The lagoon will have no impact on the basal water contained in the Napali formation.

The Napali basal aquifer is recharged mainly by rainfall in the interior highlands of the island. Existing wells in the area indicate that the wells are very productive and show superior characteristics.

Three additional wells are planned to meet the eventual overall project demands and projected growth in the area. The future wells may be located in the proximity of the County wells at Mahaulepu or near the KDC well in Omao. Two wells formerly used by McBryde to irrigate sugarcane might also be utilized. The projected water demand from complete build-out of the entire project is 3.1 MGD. Potable water demand from the Resort complex will account for approximately 257,000 gpd. A schematic diagram of the probable future water system within the project site is shown in Figure 5-2.

Currently, there are three potable water tanks that store water for the Koloa district. This storage capacity is sufficient for the existing area demand, but is not adequate for the proposed development. To store enough potable water for the overall Kukui`ula project, new storage capacity of approximately 4 million gallons will be required. This storage capacity will be provided by three or four new water tanks, constructed as needed to maintain appropriate storage capacity, at locations directly mauka of the overall project site or in conjunction with DOW storage facilities.

Existing transmission and distribution lines in the vicinity of the project are inadequate to service the overall project. Therefore, new 8-inch, 12-inch and 16-inch water lines are planned within the project roadways. Transmission mains will be constructed to connect the well fields to the storage facilities and the storage facilities to the service mains within the project site.

#### **A. Impacts**

The existing potable water system (source, storage and transmission) does not have the capacity to meet the full needs of the proposed development. New well development for the project will affect the groundwater resources in the area, since all potable water for the Koloa/Poipu area is obtained from wells.

Adverse impacts on nearshore fisheries or streams are not anticipated because potable water from the new well comes from the Napali formation and not the Koloa formation where high level and perched water enters the sea along the coastline or seeps into gullies and streams.

**B. Mitigation**

The overall project will ultimately require 3.1 MGD of potable water (257,000 gpd for the Resort). The well that was recently drilled by KDC in Omao will be capable of handling water demands for the Resort. New wells will be added as needed for other components of the overall project. These wells will be tested to determine the appropriate pumping level that will maintain the integrity of the potable water aquifer.

Development of new well sources will comply with the requirements of the DOW and the State Water Commission. The new wells will be tested to determine the actual capacity to ensure that the water from the aquifer will not be over pumped. The new sources will be developed in compliance with the State's Potable Water System Regulations, Chapter 20, Title 11, Administrative Rules and will require approval by the Director of Health prior to use. Coordination with the County's Water Use and Development Plan will also be undertaken.

To minimize impacts on the well fields, effluent from the Kukui'ula wastewater treatment plant (WWTP), which has already been constructed, will be used to irrigate the future golf course above the Resort and common landscaped areas. The WWTP provides secondary treatment and the effluent will be disinfected, as required. Non-potable ditch water is also available for irrigation purposes and is currently being used to irrigate the grass-lined drainage swales, channels, and retention basins. Xeriscape plant material could be used where appropriate to decrease the frequency of irrigation. Non-potable water will also be used to supply water to the lagoon.

Plumbing fixtures within the Resort will also be outfitted with low-flow devices to decrease potable water usage.

The Water Master Plan finalized in April 1993 for the overall project was approved by DOW in April 1993.



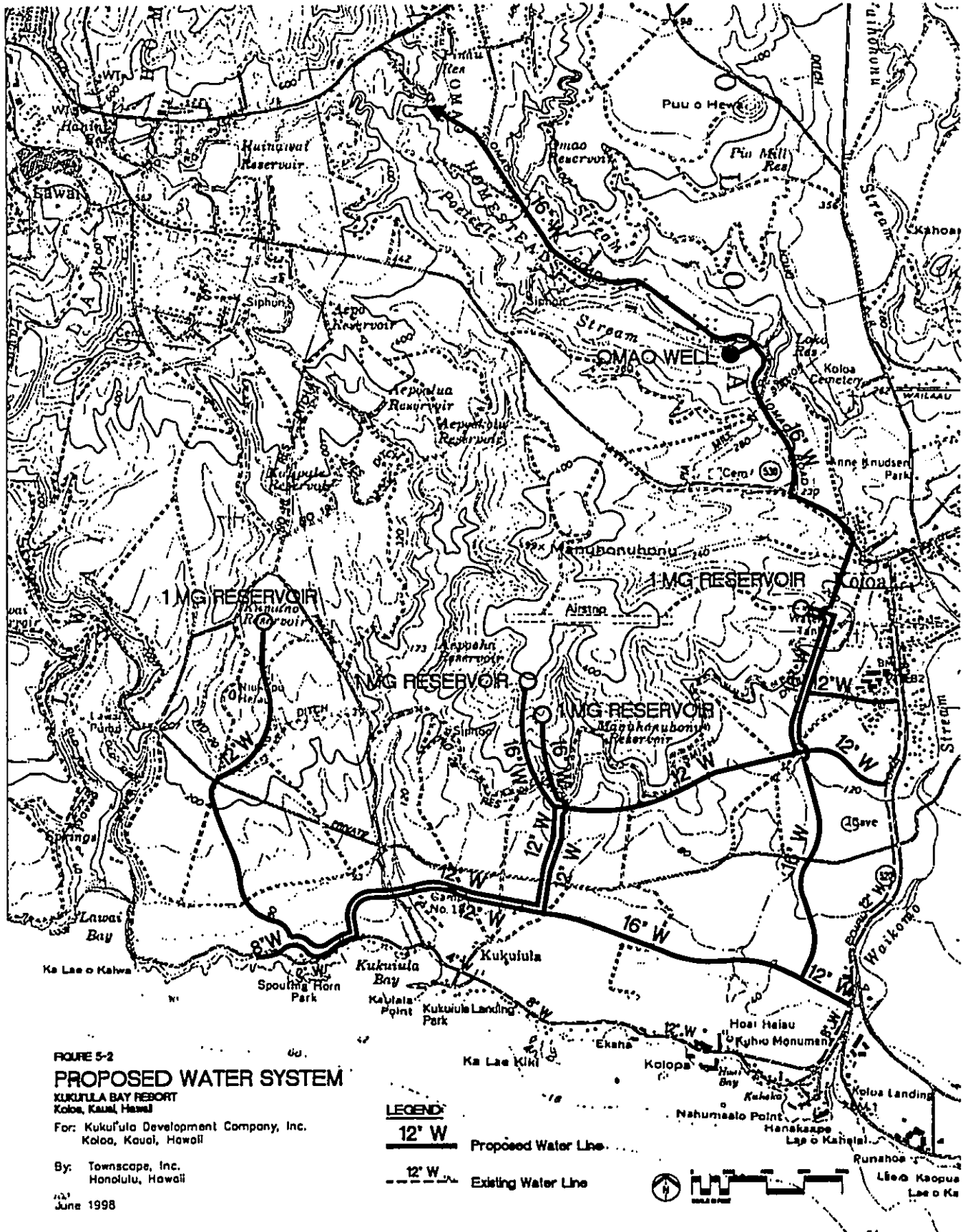


FIGURE 5-2  
**PROPOSED WATER SYSTEM**

KUKUI'ULA BAY RESORT  
 Koloa, Kauai, Hawaii  
 For: Kukui'ula Development Company, Inc.  
 Koloa, Kauai, Hawaii

By: Townscape, Inc.  
 Honolulu, Hawaii

June 1998

**LEGEND**  
 12" W Proposed Water Line  
 12" W Existing Water Line



### 5.3 WASTEWATER TREATMENT AND DISPOSAL

Wastewater in the Koloa/Poipu area is currently disposed of by private cesspools or private sewage treatment plants. In the County's 1988 Facility Plan for Koloa-Poipu, a regional sewage treatment plant was planned for the area. As part of the County's requirement for development of the overall Kukui`ula project, KDC has constructed a WWTP northeast of the Resort. The WWTP began operation on October 1993, and currently has a capacity of 1.2 MGD. The WWTP has been designed to have an eventual capacity of 3.0 MGD (see Figure 5-3).

The sewage collection system for the Kukui`ula project will include a network of gravity sewer mains and force mains that will be installed primarily within the project roadways. Sewage pumping stations will be required in the low areas to pump the sewage to the WWTP. The sewage pumping stations will be located underground to be less viable.

The WWTP has been designed to provide secondary treatment through the use of aerated lagoons. Each lagoon is approximately 400 feet long, 250 feet wide and 18 feet deep. The lagoons have been lined to prevent infiltration of the untreated sewage into the ground. Aeration of the lagoons is provided by perforated PVC or HDPE tubes laid on the bottom of the lagoon.

Pretreatment of the raw sewage is performed by screening and grit removal equipment that is housed in the headworks. Pretreatment reduces the amount of settleable solids in the aerated lagoons thereby improving the performance of the lagoons.

An odor control system using an atomizing mist scrubber has been installed at the headworks. This type of scrubber releases sodium hypochlorite oxidant, which contacts with odor causing agents thereby removing the causal agents of odors. Once the influent enters the first lagoon, odors will be significantly diluted and oxidation of odorous compounds will begin. The system has been designed to minimize any odor problem.

The effluent that is generated during the initial phases of the overall project will be disposed of at a designated site located above the WWTP. Approximately 74 acres within and around the WWTP are designated to be irrigated with effluent in accordance with the "Effluent Disposal Plan" that was prepared and approved by the State Department of Health. When the golf course is constructed, [treated] effluent treated with chlorine for disinfection may be used to irrigate the golf course, drainage features, and landscaping through a drip irrigation system in compliance with the DOH reuse guidelines and in accordance with applicable DOW requirements.

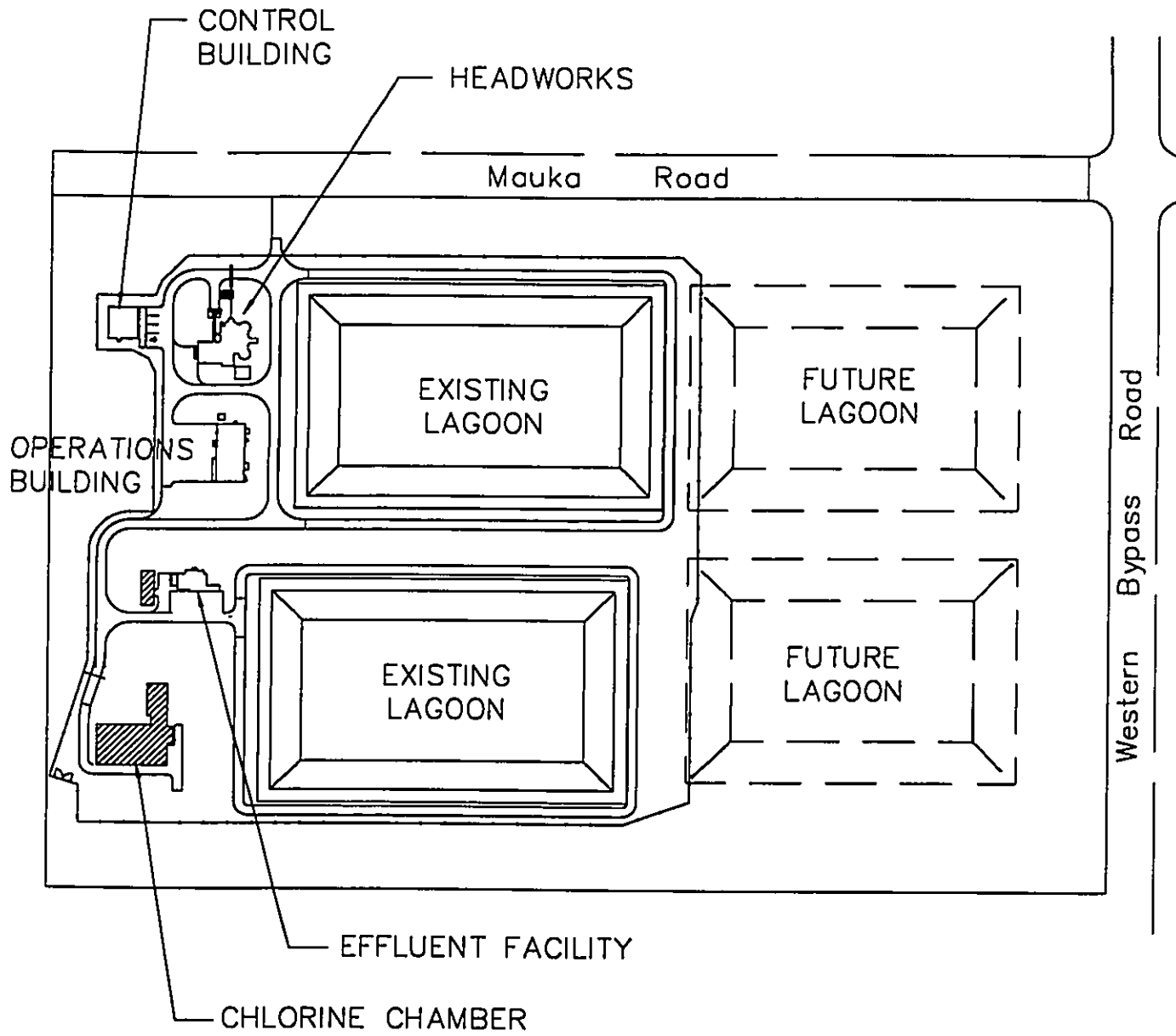


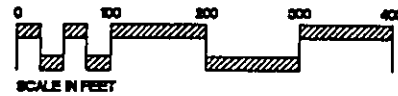
FIGURE 5-3  
WASTEWATER TREATMENT PLANT

KUKUI'ULA BAY RESORT  
Koloa, Kauai, Hawaii

For: Kukui'ula Development Company, Inc.  
Koloa, Kauai, Hawaii

By: Townscope, Inc.  
Honolulu, Hawaii

June 1998



In a plant upset condition, injection wells are available for emergency effluent disposal. Upset conditions are monitored at the WWTP. These emergency injection wells are below the UIC line.

**A. Impacts**

The WWTP has improved the existing sewage disposal system in the area by providing a facility large enough to accommodate the regional needs of the County. The use of cesspools and the private sewage treatment plants could eventually be eliminated, which will have a positive impact on the groundwater in this area. The WWTP's treated effluent may be used to irrigate the golf course and other landscaped areas and, with proper management, should not adversely impact the ground water. Nutrients in the effluent are expected to be absorbed by the plants and the soil prior to percolation.

**B. Mitigation**

Several methods are available to minimize impacts on adjacent properties and on the treated groundwater from the use of the effluent for golf course and landscaping irrigation.

Drip irrigation is proposed in areas with potential public access and surface irrigation is planned in areas with restricted public access. Some of the effluent may be used for irrigation of landscaping at the WWTP site and used for makeup water for the chlorination system.

The effluent during the initial stages of operation will be "R2 Reclaimed Water," which requires disinfection of secondary effluent. The WWTP may be upgraded in the future to produce "R1 Reclaimed Water," which requires filtration and higher disinfection to reduce the presence of viruses, cysts and coliform counts.

The effluent disposal system can be equipped with controls that will shut the irrigation system off when an area is saturated and redirect the effluent to another disposal site. The effluent disposal system is described in more detail in the Engineering Report for the South Shore Community Services, Inc., Effluent Disposal Plan, August 1993, prepared by R. M. Towill Corporation, ITC Water Management, and Aqua Engineers, Inc.

In addition to the effluent disposal plan, management practices for the golf course will be implemented to minimize impacts on groundwater resources. Some of these management practices include lining highly irrigated areas, employing a water monitoring system, and using organic

material for golf course maintenance. These management practices have been outlined in greater detail in the "Fertilizers and Pesticide Management" section of the 1989 EIS.

Visual impacts of the WWTP have been mitigated by the location of the facility. A relatively low site that is adjacent to a ridge was selected for the WWTP and landscaping in and around the WWTP has been provided to reduce visual impacts.

Odors associated with treatment plants usually occur when anaerobic conditions exist at the plant or in the collection system. Odors within the collection system will be minimized by utilizing gravity flow with adequate velocity to keep the sewage aerobic. The pumping stations will be enclosed and force mains will be designed to reduce the time that raw sewage will remain in the pipe. The collection system will be designed to gravity flow into the headworks rather than being pumped directly into the plant to reduce the possibility that the sewage entering the treatment plant will become septic. Aerated lagoon type treatment plants are one of the easiest and most odor free types of plants to operate.

The WWTP has been designed to comply with State and Federal regulations for treatment works, and all phases of the work have been and will continue to be coordinated with the County of Kauai Department of Public Works and DOH.

#### **5.4 CIRCULATION**

An updated Traffic Impact Analysis Report was prepared by Julian Ng, Incorporated in May 1998 (see Appendix E). The original report prepared for the 1989 EIS addressed the entire 1,040-acre Kukui`ula Planned Community project. At that time, recommendations were made for improvements to area roadways and the construction of planned roadways within the Kukui`ula development.

A few modifications are being proposed to the circulation system of the overall project (see Figure 5-4). In the original plan, the marina caused Lawai Beach Road to terminate at the Resort at Kukui`ula Bay and the Major Project Road was to provide a transition onto the western side of Lawai Beach Road. Two mauka-makai links from Lawai Beach Road to the Major Project Road were also planned.

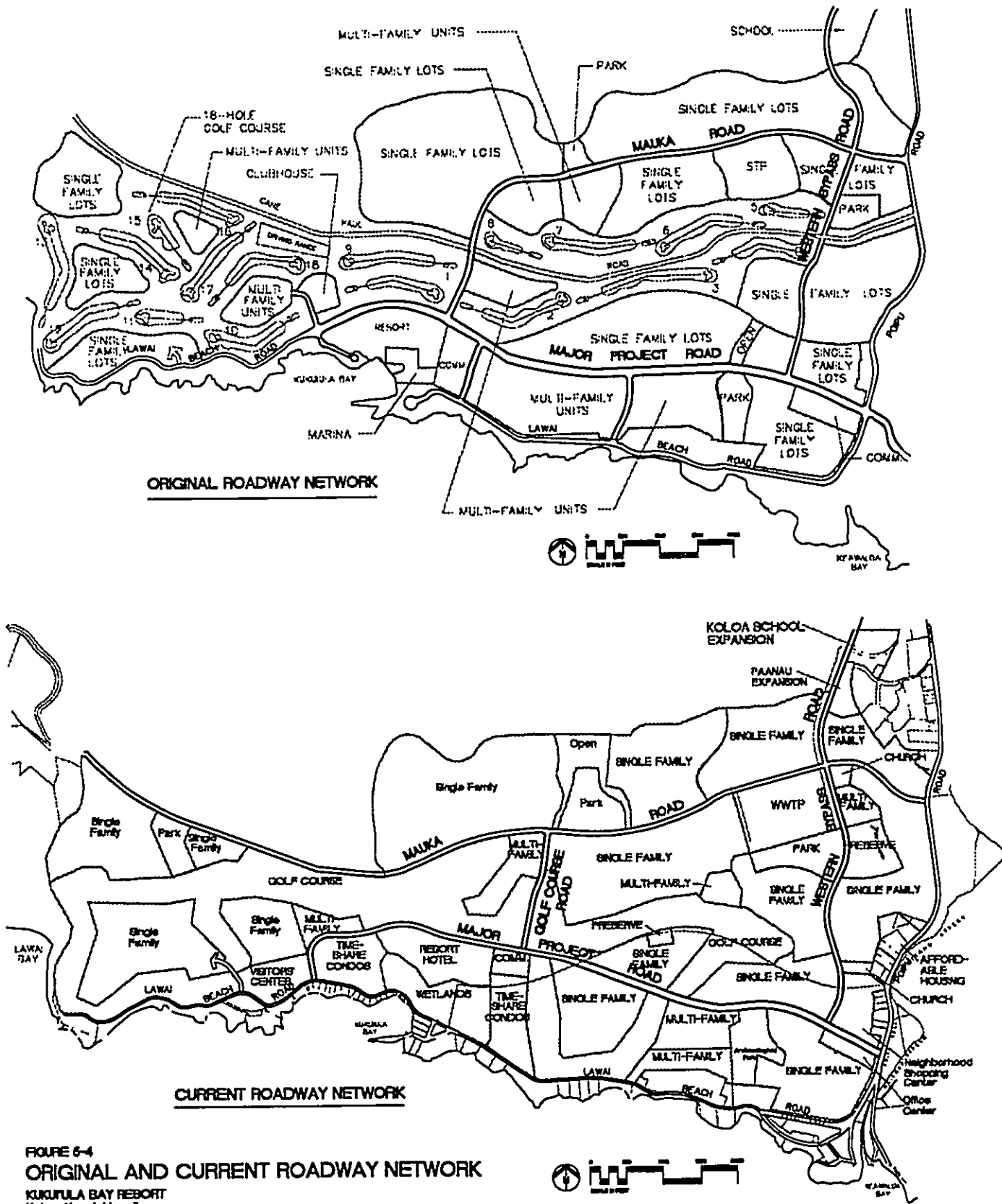


FIGURE 6-4  
ORIGINAL AND CURRENT ROADWAY NETWORK  
KUKUI'ULA BAY RESORT  
Koloa, Kauai, Hawaii

For: Kulekule Development Company, Inc.  
Koloa, Kauai, Hawaii  
By: Tenacapa, Inc.  
Honolulu, Hawaii  
June 1988

With the deletion of the marina from the Resort, the new plan calls for Lawai Beach Road to continue westward for approximately two-thirds of a mile and terminate at Lawai Valley. The Major Project Road now forms a "T" intersection with Lawai Beach Road between the Resort and the National Tropical Botanical Gardens.

Two other major roadways within the Kukui`ula project include the Mauka Road and the Western Bypass Road. These two roadways are similar to the original plan except that the Western Bypass Road is now planned to eventually extend northward to the intersection with Koloa Road, then on to Maluhia Road where it will form a cross intersection with the Eastern Bypass Road as the eastern leg.

In the original traffic study prepared for the 1989 EIS, the unit count for the Kukui`ula project was approximately 4,538 units. The current project now has a total of approximately 3,400 , a reduction in the overall unit count of over 1,000 units.

The updated traffic study was prepared to assess existing traffic conditions and determine the sequencing of roadway improvements needed to accommodate the earlier development of the Resort component. This study also evaluates the effect of the revised Plan on recommendations in the latest Kauai Long Range Transportation Plan (KL RTP), which was completed and then revised subsequent to the preparation of the original traffic study in 1988.

The major roadway improvements that continue to be recommended by the updated traffic study include the following:

- Construction of the Major Project Road and its cross intersection with Lawai Beach Road, Poipu Road and Poipu Beach Road (see Figure 5-5).
- Dedication of additional right-of-way along Lawai Beach Road for sidewalks, curbs, and a grassed shoulder. (These improvements have already been constructed by KDC and include an additional 13 feet of right-of-way where Lawai Beach Road abuts the project site, partial realignment of Lawai Beach Road, a minimum of 6 feet of additional pavement width, sidewalks, curbs, gutters and a planting strip, which is being maintained by KDC.)

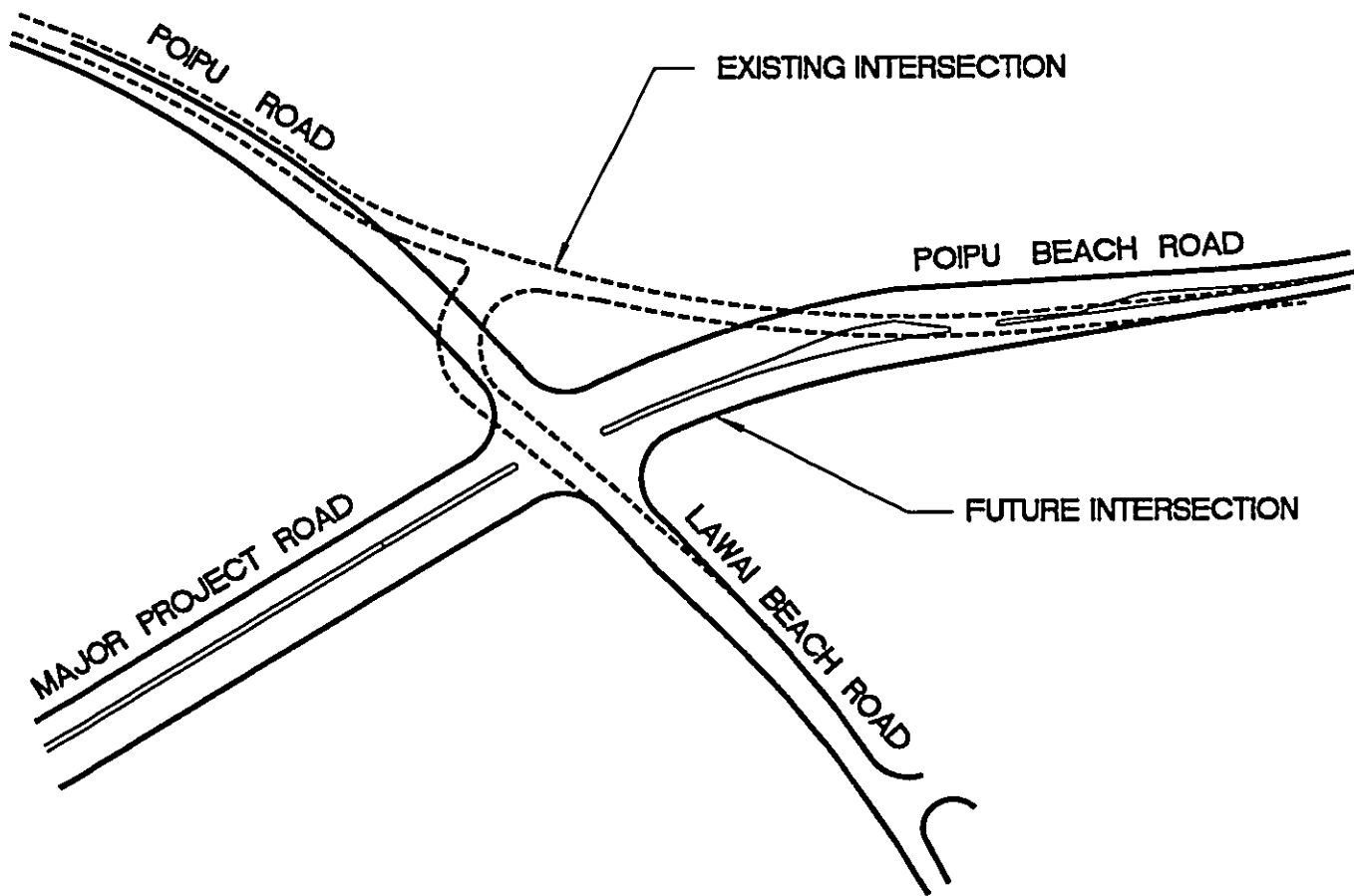
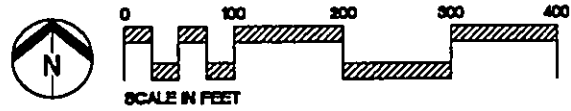


FIGURE 5-5  
**RECONFIGURED INTERSECTION**  
KUKUI'ULA BAY RESORT  
Koloa, Kauai, Hawaii

For: Kukui'ula Development Company, Inc.  
Koloa, Kauai, Hawaii

By: Townscape, Inc.  
Honolulu, Hawaii

June 1998





- Continuation of the Mauka Road westward to the end of the project site. As part of the KLRTP, this roadway eventually will extend westward to Port Allen and eastward to Lihue to alleviate traffic on Kaunualii Highway. This project is identified for implementation in the KLRTP after 2006 and prior to 2020.
- Improvements along Poipu Road for portions of the overall Kukui`ula project that abut the roadway to include curbs, gutters and sidewalks.
- Continuation of the Western Bypass Road northward to its eventual intersection with Koloa Road. This bypass roadway is planned to be constructed when 1,738 units in the Kukui`ula project are occupied.
- Signalization of intersections on Koloa and Poipu Roads when warranted.

Because of the change in timing that could result in development of the Resort prior to the residential components of the overall project, the updated traffic study analyzed alternative access routes to service the Resort. These alternatives included using the existing Lawai Beach Road, constructing a portion of the Major Project Road, and constructing the Mauka Road, since a portion of the Mauka Road is planned to be constructed for a 32-lot subdivision KDC is developing adjacent to Poipu Road.

The analysis indicated that Lawai Beach Road would only be able to accommodate an additional 370 units, at which time a reconfigured intersection of Poipu Road and the Major Project Road will be needed. Alternatively, the Mauka Road could be extended to the Resort. Signalization of the intersection of the Mauka Road and Poipu Road would be warranted when the unit count reaches 800 units.

Traffic on Poipu Road has decreased as a result of the construction of the Eastern Bypass Road, and Poipu Road between Koloa Road and the overall project will be adequate until about 2,050 units are constructed.

The analysis confirmed that the Western Bypass Road will not be needed until approximately 1,738 units have been constructed for the Kukui`ula project, and that signalization of the intersections on Koloa Road is not needed until signal warrants are met.

**A. Impacts**

The proposed Resort project will increase the volume of vehicular traffic in the Koloa District. At 100% occupancy of the hotel and timeshare units, including lock-outs, a maximum of 6,090 trips per day could be generated.

**B. Mitigation**

Based on the updated traffic study, Lawai Beach Road will be able to accommodate up to 370 new units at the Resort complex. When this unit count is reached, either the Mauka Road will have to be extended to the Resort, or the Major Project Road will have to be constructed to the Resort. Construction of either the Mauka Road or the Major Project Road will probably decrease traffic along Lawai Beach Road, especially if the reconfigured intersection of Lawai Beach Road, Poipu Road and the Major Project Road is constructed. These roadway improvements will be constructed when warranted.

**5.5 SOLID WASTE**

Solid waste generated by the Resort is planned to be disposed of by a private collection company at the new Kekaha landfill.

The County has received \$2.1 million of Federal funds to open four recycling stations on the island of Kauai. With these new recycling stations, the Kekaha landfill is expected to have a life of approximately seven years.

**A. Impacts**

After completion of the Resort complex, it is estimated that approximately 5 tons of refuse per day will be generated. This volume of refuse is based on 3 persons per hotel room and timeshare condominium unit and 5 pounds of refuse per person. This estimate is based on 100% occupancy of the hotel and timeshare units, including the lock-outs, and is therefore conservatively high.

**B. Mitigation**

Recycling studies done for Oahu have indicated that solid waste could be reduced by as much as 50%. Recycling of paper, glass, plastics and metal will be encouraged at the Resort.

During construction, recycled materials such as glassphalt or lumber made of recycled plastic could be used in lieu of traditional construction materials.

As part of grounds maintenance program, plant trimmings could be composted. Locally produced compost or compost made from plant trimmings from the Resort could be used to reduce the volume of solid waste and support recycling efforts in the State.

## 5.6 POWER AND COMMUNICATIONS

Electric power will be provided by the Citizens Utilities Company. Power is provided to the area via a 57 KV transmission line from Citizen's Port Allen power plant. Residents are currently served by a 3 phase, 12 KV overhead distribution line along Lawai and Poipu Roads. An existing substation is located near Koloa Town.

Telephone service will be provided by Hawaiian Telephone Company. Hawaiian Telephone has a switching station within Koloa town and its lines are placed on the same poles as the electric lines.

Kauai Cable provides cable television service to the Koloa area. The cable lines are also installed on the electric and telephone poles.

The future electric, telephone and cable systems for the Resort will be placed underground.

### A. Impacts

A new electric substation and a new switching station may be needed to service the overall Kukui`ula project.

### B. Mitigation

If a new electric station and a new switching station are needed, space will be provided within the Kukui`ula Planned Community for the development of these facilities.

Energy conservation devices or methods within the Resort can be used to conserve energy. The use of landscaping can provide shade thereby reducing the use of air conditioners or fans. Because of the relatively sunny climate, solar water heaters can be used to reduce electrical consumption. Structures can be designed such that solar rays will not directly penetrate to the

interior. Proper ventilation can aid air circulation within the structures, and tinting of glass windows could also be used to reduce indoor heat.

## **5.7 FIRE SERVICE**

The Kauai Fire Department operates fire stations in Hanalei, Hanapepe, Kalaheo, Kapaa, Koloa, Lihue and Waimea. Its on-line firefighting staff currently totals 108.

The Koloa Town station located near the intersection of Poipu Beach Road and Lawai Beach Road, will service the Resort development. It is equipped with a 1993 Seagrave Fire Truck with a 750-gallon tank, and an International Rescue Truck with a 200-gallon tank. Other rescue equipment includes a jet boat, diving equipment and respirators.

A total of 15 firemen currently operate out of the Koloa Station. Each of the three shifts has a maximum of five firemen or a minimum of three firemen. Aside from fighting fires, the firemen also assist in search and rescue operations on land and sea.

Response time to the project site from the Koloa Station is estimated at 2 minutes. The Kalaheo substation is used as a backup to the Koloa Station. Response time from the Kalaheo substation is estimated at 15 minutes.

Ambulance service is dispatched from four areas on Kauai: Waimea, Hanapepe, Koloa and Lihue. The Koloa ambulance is located near the intersection of Koloa Road and Poipu Road and its response time to the site is estimated at approximately 5 to 7 minutes.

### **A. Impacts**

Present and future fire protection facilities will be sufficient to support the needs of the proposed Resort project.

### **B. Mitigation**

To mitigate impacts from the hotel, timeshare and commercial areas, the buildings will be equipped with sprinkler systems and fire alarms. All structures will be constructed to fire code standards.

## 5.8 POLICE SERVICE

There are three police stations located approximately 25 miles apart at Hanalei, Waimea and Lihue. Response time to any given point between these three stations is approximately 15 to 20 minutes.

A total of ten officers on each shift respond to emergency calls with two officers on standby as backup. The island is divided into ten sectors and one officer is assigned to each sector. The Koloa/Poipu area currently consists of two sectors.

A police substation is planned to be co-located within the Koloa Fire Station that was constructed approximately two years ago.

### A. Impacts

The Resort project will increase the demand for police protection services. Visitors to the resort will require police protection services typical of other visitor destination areas on Kauai.

### B. Mitigation

Private security personnel and security systems are expected to be employed at the Resort complex, which will augment County police services.

## 5.9 MEDICAL FACILITIES

Existing medical facilities on Kauai consist of the Kauai Medical Group, the Wilcox Memorial Hospital and Health Center, Garden Island Medical Group, Kauai Veterans Memorial Hospital, Samuel Mahelona Memorial Hospital, Kuhio Medical Group and a satellite facility of the St. Francis Hospital. The Wilcox Hospital is the largest medical facility on Kauai and has recently been renovated and expanded.

Medical facilities in Koloa consist of a branch of the Garden Island Medical Group and the Koloa office of the Kauai Medical Group. Ambulance service is dispatched from Hanapepe, Koloa, Waimea and Lihue. Response time from Koloa to the Resort is estimated at 5 to 7 minutes.

**A. Impacts**

No significant adverse impacts are expected on any medical facilities as a result of the Resort development.

**5.10 SCHOOLS**

The County of Kauai has a total of 20 schools: 13 public and 7 private. These schools employ over 700 teachers. Enrollment in public schools totaled approximately 11,000 students in September 1997. Private school enrollment is estimated at approximately 800 students.

Koloa Elementary School (K-6) and Kauai Intermediate and High School (7-12) are the two public schools that children from the Kukui`ula project will attend. The Department of Education indicated that these schools are at capacity. The average classroom size is 20 students from kindergarten to grade 3, 23 students for grades 4 to 6, and 25 students for grades 7 to 12.

The Koloa Elementary School is located near the northeast corner of the project site. Approximately 7 acres have been set aside by KDC for expansion of the Koloa Elementary School. A 12-acre site for a new elementary school is also planned as part of the overall Kukui`ula project. The location of this school is yet to be determined.

**A. Impacts**

The Resort development, which will consist principally of visitor accommodation units, is not expected to directly impact school enrollment in the area. Indirectly, local residents may relocate to this area because of employment opportunities and amenities that will increase school enrollment.

**B. Mitigation**

Indirect impacts on school enrollment will be mitigated by KDC's plan to reserve land adjacent to Koloa Elementary School for school expansion, and to set aside a 12-acre site within the overall Kukui`ula project for a new elementary school. KDC will work with the Department of Accounting and General Services, the DOE and other appropriate government agencies to locate the other 12-acre school site.

## **5.11 RECREATIONAL FACILITIES**

Coastal resources in the Koloa District include about 2 miles of sandy beaches, surfing sites and body surfing areas at Brennecke Beach. Coastal recreational activities include swimming, sunbathing, canoe paddling, boating, diving, fishing, surfing, wind surfing and body surfing.

Wailua River State Park was visited by over a million people in the year ending June 1994. Waimea Canyon State Park and Kokee State Park each had over 300,000 visitors. Parks located adjacent to the project site include the Prince Kuhio Historical Park and the Spouting Horn Park.

Of the four major islands, Kauai has the fewest number of golf courses, with one municipal golf course and 7 private courses. The nearest golf course to the project site is the Kiahuna Golf Course, located about one mile east of the project site.

As part of the plans for the overall Kukui`ula project, a number of recreational facilities are planned. These facilities include an 18-hole golf course, a 15-acre archaeological park, several historical preserve areas, active and passive parks, and open space areas. Land is also being dedicated to the Prince Kuhio Park for expansion of its facilities. In addition, pedestrian and bike paths are being planned throughout the development along the major roadways. Fifty-foot and 100-foot buffer areas along Lawai Beach Road have been established and a sidewalk has been constructed by KDC within the buffer strips.

### **A. Impacts**

The Resort is expected to have an impact on recreational facilities because of the increase in visitors. The creation of the lagoon will add a unique open space and passive recreational amenity to the area.

### **B. Mitigation**

Due to its off-beach location, the Resort will not be marketed in the traditional manner of typical Hawaiian beach front resorts. Activities such as hiking, mountain biking, wildlife tours, fishing, and agricultural and cultural education are expected to be offered.

Although visitors will utilize existing recreational areas, including nearby beaches, the Resort will provide its own amenities, such as swimming pools, the lagoon and other recreational activities, to reduce the need for visitors to travel to nearby recreational areas. The overall Kukui`ula project will add new recreational facilities for the surrounding community, including an 18-hole golf course, an archaeological park, historical preserves, active parks, and pedestrian and bike paths, which should also be heavily utilized by the Resort's visitors.

## **SECTION 6 – RELATIONSHIP TO LAND USE PLANS, POLICIES AND CONTROLS**

### **6.1 HAWAII STATE PLAN**

The Hawaii State Plan was developed to serve as a guide for future long-range development of the State of Hawaii in areas of population growth, economic benefits, enhancement and preservation of the physical environment, facility systems maintenance and development, and socio-cultural advancement. The Plan identifies the State's general goals, objectives, policies and priorities for development and growth.

The Resort is generally consistent with the objectives and policies of the Hawaii State Plan as set forth in Chapter 226 of the Hawaii Revised Statutes (HRS). The following sections describe the relationship and/or compatibility of the proposed project with the Hawaii State Plan.

#### **6.1.1 Population (226-5, HRS)**

The Hawaii State Plan objectives and policies focus on increased economic and employment opportunities that are consistent with population growth and infrastructure development to help the people of Hawaii pursue their socio-economic aspirations.

Development of the Resort will create a variety of employment opportunities for the Koloa District that will benefit the growing population. Visitors and residents will be attracted to the area with its Resort facilities, employment opportunities and planned amenities. However, a significant increase in island-wide population growth is not anticipated from the Resort, since the majority of the people who may move to the Kukui`ula area may currently reside on Kauai.

#### **6.1.2 Economy (226-8, HRS)**

Short-term construction employment opportunities, and diversified long-term employment opportunities will be created from the development of the Resort's hotel, timeshare condominiums, commercial area, and lagoon.



Since Hurricane Iniki caused the closure of several Kauai hotels (Waiohai, Poipu Beach and Coco Palms), there is a need for more visitor accommodations to serve future visitor demand. The Resort's ecological theme will provide a unique vacation alternative for new and repeat visitors to Kauai and will diversify the current visitor plant in the Poipu region. The opening of a new Resort on Kauai since Hurricane Iniki is expected to bolster market confidence in Kauai as a viable visitor destination.

### **6.1.3 Physical Environment (226-11, -12, -13, HRS)**

Policies for the physical environment focus on managing land to protect and enhance our environment.

Air quality has been significantly improved with the closure of McBryde Sugar Company. Cane burning and dust from cane operations are no longer major contributors of air pollution in the vicinity of the Resort and the overall Kukui`ula project.

Short-term water quality impacts may occur during construction of the Resort. However, erosion control plans will be developed to minimize adverse impacts on nearshore waters.

An archaeological inventory survey, data recovery program and preservation plan have been completed for the majority of the archaeological sites that were found in the overall Kukui`ula project. None of these sites are in the vicinity of the Resort.

Increased vehicular emissions will be caused by the increase in project traffic. To mitigate carbon monoxide emissions from motor vehicles, efficient traffic circulation will be provided by the project roadways, and improvements to existing roadways are planned to minimize idling time at intersections.

Short-term impacts on air quality will be caused during construction operations. However, dust control measures will be established in accordance with DOH regulations.

Kukui`ula's drainage system has been designed to divert mauka storm runoff waters to the outlet at Kukui`ula Bay, thereby minimizing flooding. Detention/retention basins have also been developed to reduce the amount of silt that will enter the ocean at the outlet at Kukui`ula Bay.

To create a visually pleasing environment, landscaping is planned throughout the Resort complex and along the major roadways that abut the project site. A 100-foot building setback has

also been established along the mauka side of Lawai Beach Road, which will be landscaped to provide a visually pleasing mauka view.

#### **6.1.4 Facility Systems (226-14, -15, -16, HRS)**

The State's policies for facility systems provide direction for the development of infrastructure systems for wastewater, solid waste, potable water, transportation, and energy and telecommunications, that are in consonance with State and County Plans to accommodate the needs of the community.

The Kukui`ula WWTP has been constructed to support the County's long range plans for a regional sewer system in the Koloa District and has adequate expansion capability to accommodate the region's needs.

A new potable water well has been drilled by KDC at Omao to provide water for the Resort. Four water storage tanks are also planned for the overall Kukui`ula project to meet storage requirements. Potable water storage facilities will be constructed as needed to meet project demands.

Traffic circulation improvements in the vicinity of the Resort include roadway widening, intersection improvements, and construction of new roads as needed to service the project.

Energy conservation devices, such as solar water heaters, are planned to reduce demands on electrical facilities. Use of landscaping can also provide shade around structures to reduce heating from solar rays. Recycling measures will be encouraged to reduce impacts on solid waste facilities.

#### **6.1.5 Socio-Cultural Advancement (226-19, -21, HRS)**

The State's socio-cultural advancement policies are directed toward providing opportunities for Hawaii's people for adequate, safe and accessible housing, health care facilities, educational services, and diverse recreational and cultural opportunities.

The Resort will provide employment opportunities and recreational facilities for the benefit and use of Kauai residents. Educational opportunities will be created by the lagoon, which is expected to attract endangered water birds and provide habitat for nesting.

## 6.2 STATE FUNCTIONAL PLANS

Twelve State Functional Plans have been developed to specify in greater detail the policies, guidelines and priorities set forth in the Hawaii State Plan. These plans cover the subjects of Energy, Transportation, Historic Preservation, Education and Higher Education, Housing, Conservation Lands, Agriculture, Tourism, Employment, Human Services, Health, and Recreation.

### 6.2.1 State Energy Functional Plan

The overall objectives of the Energy Functional Plan are *"to achieve dependable, efficient and economical statewide energy systems capable of supporting the needs of the people, and increased energy self-sufficiency."*

Pedestrian paths and bikeways will be constructed along new and existing roadways to conserve energy consumed by motor vehicles. To conserve energy within structures, energy conservation devices, such as solar water heaters, can be used. Design of the structures to maximize indoor light without increasing indoor heat will help to reduce the demand for electrical power. Landscaping around structures can also be used to provide shade and lessen the need for electrically-powered air conditioning systems. The developer will be encouraged to adopt energy efficient practices and technologies and establish recycling programs during and after construction.

### 6.2.2 State Transportation Functional Plan

The two major objectives of the Transportation Functional plan are to develop *"1) an integrated multi-modal transportation system which serves statewide needs and promotes the efficient, economical and safe movement of people and goods; and 2) a statewide transportation system consistent with planned growth objectives throughout the state."*

Safe, efficient and convenient movement of people and goods will be provided by the construction of new roadways or by improving existing roadways in the vicinity of the project. Additional rights-of-way along Lawai Beach Road have been established to improve traffic circulation. Other roadway widening and intersection improvements are planned on Poipu Road and within Koloa Town as part of the development for the overall Kukui`ula project.

### 6.2.3 State Historic Preservation Functional Plan

The objectives of the Historic Preservation Functional Plan are: 1) *Preservation of Historic sites; 2) Preservation of Records, Artifacts and Oral Histories and Perpetuation of Traditional Skills; and 3) Public Information and Education.*

Data recovery has been performed and a preservation plan has been prepared for most of the 51 significant archaeological sites that were found in the overall Kukui`ula project. Sixteen sites will be preserved either in their natural condition or restored within a cultural park within Kukui`ula.

### 6.2.4 State Education and Higher Education Functional Plan

The overall objectives of the State Education and Higher Education Functional Plans are generally to provide adequate facilities and programs to support community needs.

KDC has reserved seven acres for the expansion of the Koloa Elementary School. A 12-acre elementary school site is also planned within the overall Kukui`ula project. Other educational opportunities could be provided at Kukui`ula's planned community facility and the National Tropical Botanical Garden Visitors' Center, archaeological park, and preserve areas located throughout Kukui`ula. Cultural and recreational activities for Resort visitors are anticipated to draw upon the expertise and knowledge of the community.

### 6.2.5 State Housing Functional Plan

The focus of the Housing Functional Plan is the development, preservation, and management of housing products for both homeowners and renters within the State through cooperative efforts among the Federal, State, and County agencies and the private sector.

The overall Kukui`ula project will offer a variety of single-family and multi-family housing opportunities. At the Resort, the condominiums may house both full-time and part-time residents. A substantial amount of affordable housing has already been constructed for the overall Kukui`ula project at Paanau (60 units) and at Eleele (116 lots) to satisfy the affordable housing requirements.

#### 6.2.6 State Conservation Lands Functional Plan

The Conservation Lands Functional Plan provides a framework for protection and preservation of pristine lands and shorelines from impacts due to population growth and economic development.

Baseline marine resources studies have been performed for the Kukui'ula project and monitoring studies are currently being performed to ensure that the project will not negatively impact marine resources. Appropriate, State, County and Federal permits will be acquired prior to construction of the lagoon.

Other surveys have been performed to identify the presence of archaeological or biological resources. An updated biological survey has identified four species of endangered birds at Kukui'ula's siltation basin. The lagoon is expected to attract more endangered birds and support their survival by providing adequate nesting habitat. No archaeological resources have been identified in the area of the Resort. However, if archaeological resources are uncovered during construction, the State Historic Preservation Division and the Kauai Historical Preservation Review Committee will be consulted.

#### 6.2.7 State Agriculture Functional Plan

The mission of the Agricultural Functional Plan is *"to increase the overall level of agricultural development in Hawaii"*. The plan also emphasizes advanced pest and disease management practices to protect the land and water resources.

Development of the Resort will result in the removal of approximately 30 acres of land currently planted in papaya or corn under short-term license agreements. Since the island of Kauai has a large inventory of unused or underutilized agricultural lands, the withdrawal of these 30 acres will not adversely affect the availability of agricultural lands on the island. In addition, these lands already have been designated for urban development by government agencies.

A 277-acre agricultural park has been established by A&B northwest of the resort for cultivation of papaya, bananas and vegetables to promote agricultural development in Hawaii. These diversified crops are planted on lands previously used for sugarcane by McBryde.

#### **6.2.8 State Tourism Functional Plan**

The objectives of the Tourism Functional Plan are to balance growth of the visitor industry with infrastructure improvement, to develop and maintain high quality visitor products while also maintaining Hawaii's natural environmental and cultural resources, and to diversify the visitor markets to support economic activity and increased opportunities for employment and upward mobility.

The Koloa/Poipu area is one of Kauai's major visitor destinations. The Resort's hotel, timeshare, lagoon, and commercial facilities will support the visitor industry and provide a unique visitor destination that will complement and diversify the current visitor base at Poipu.

#### **6.2.9 State Employment Functional Plan**

The Employment Functional Plan provides objectives and policies to guide employment by providing appropriate training programs and working environments to ensure a capable and competitive workforce.

Development of the Resort complex will create a number of employment opportunities in the construction, tourist and retail/commercial sectors. Secondary business and employment opportunities will also be generated by the Resort.

#### **6.2.10 State Recreation Functional Plan**

The objectives of the Recreation Functional Plan are to properly manage existing recreation facilities to relieve stresses from overuse, to create new recreational opportunities, and to assure public access to recreation areas.

A number of recreational facilities will be provided within the overall Kukui`ula project for the enjoyment of the community and visitors, including an 18-hole golf course, and passive and active parks. Pedestrian walkways and bike paths will provide easy access to these recreational facilities. The planned lagoon will be a passive recreational amenity for the Resort and the community.

### 6.2.11 State Health Functional Plan

The Health Functional Plan focuses on the need to improve and expand health care facilities and programs, and ensure protection of the environment.

Since there is no existing public sewer system in the vicinity of the Kukui'ula project, KDC has constructed a wastewater treatment plant that will service the projected and the regional needs of the Koloa District. The treatment plant will accommodate the needs of the Resort, and can be expanded to treat 3.0 MGD of sewage, which is the total projected sewerage flow for the Koloa-Poipu area.

Department of Health regulations will be adhered to during construction of the Resort to mitigate short-term impacts on air quality, noise and soil erosion. Long-term air quality impacts from traffic will be mitigated by the improved roadway system.

### 6.2.12 State Human Services Functional Plan

The Human Services Functional Plan goal is to provide support services and facilities to help people achieve economic and social self-sufficiency. The priorities in this plan focus on *"initiatives for the elderly, children, individual and family to become independent of the welfare system."*

The Resort itself will not directly provide special facilities for the elderly or children. However, the Resort will enhance economic and social self-sufficiency by providing a variety of employment opportunities.

## 6.3 STATE LAND USE

The project site was part of a State Land Use District Boundary Amendment Petition to reclassify approximately 822 acres from the Agricultural to the Urban district. In 1995, the State Land Use Commission (SLUC) approved reclassification of approximately 537 acres to the Urban district (Increment I) and incrementally reclassified the remaining, approximately 285 acres to the Urban district (Increment II), contingent upon substantial completion of off-site and on-site improvements for Increment I. A portion of the Resort site was included in Increment II.

In March of 1998, a motion was submitted to the SLUC to transfer a portion of the Resort area from Increment II into Increment I. A hearing on the motion was held on May 28, 1998. The motion [is pending action] was approved by the SLUC by Supplement and/or Modified Findings of Fact, Conclusions of Law, and Decision and Order dated June 22, 1998. Current State land use district boundaries in the vicinity of the Resort area are shown on Figure 6-1.

#### **6.4 COUNTY OF KAUAI GENERAL PLAN AND ZONING**

The Resort site is currently designated "Urban Residential" under the County of Kauai General Plan. KDC is proposing to change the "Urban Residential" designation of 77 acres to "Resort" to allow for the development of the Resort.

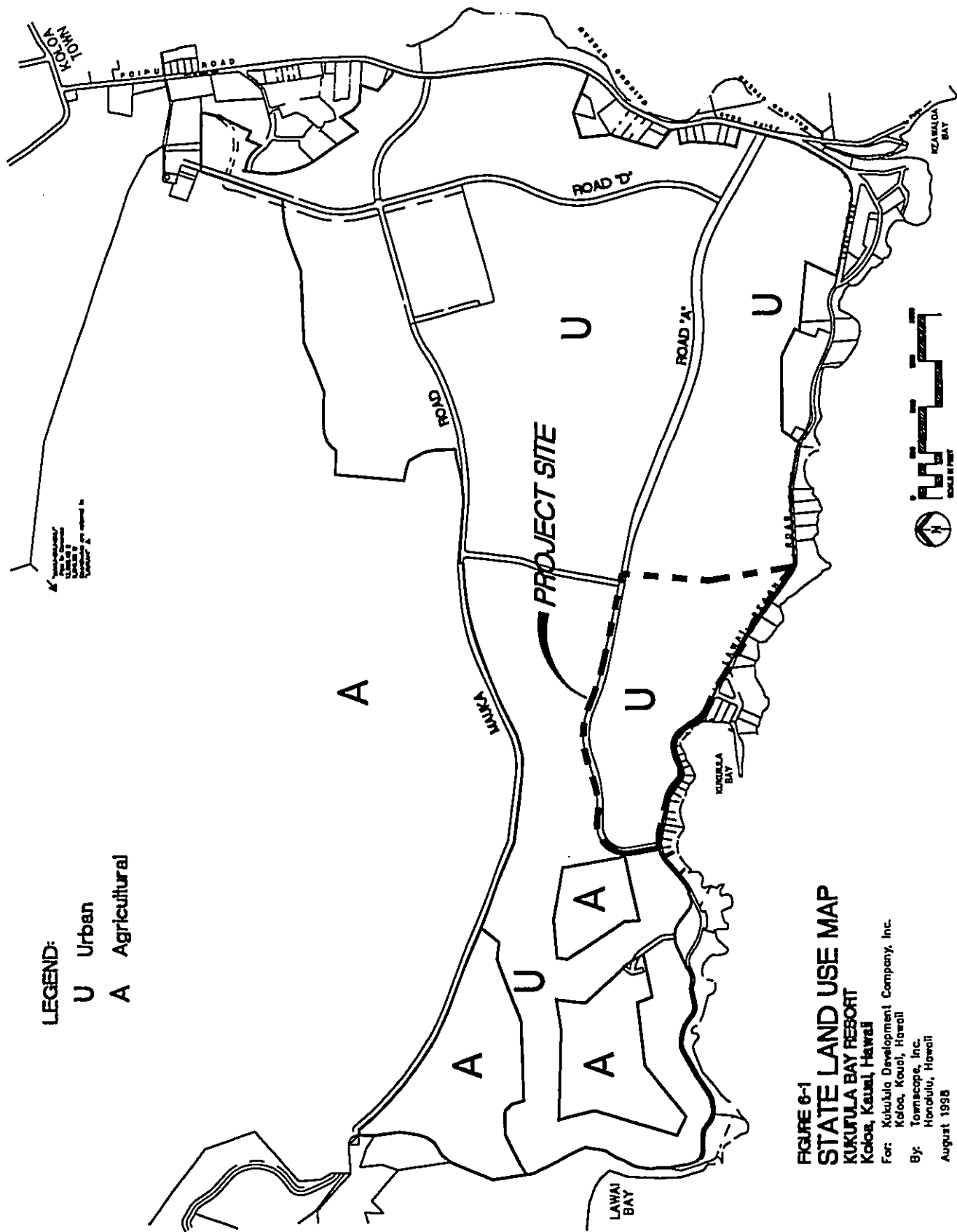
Lands immediately adjacent to the Resort site are designated "Urban Residential". Figure 6-[1]2 shows the 77-acre area proposed to be changed from "Urban Residential" to "Resort". Lands east of the "Urban Residential" and Poipu Road area are designated "Resort". Mauka lands are generally designated "Agriculture" or "Open".

The Resort site is currently zoned "Agriculture". Upon approval of the General Plan amendment, KDC will apply for appropriate rezoning of the site for the hotel, timeshare condominiums, commercial and lagoon sites. Further discussions with the County of Kauai Planning Department are needed to determine the appropriate zoning designation of each component of the Resort.

#### **6.5 COASTAL ZONE MANAGEMENT/SPECIAL MANAGEMENT AREA REGULATIONS**

The Special Management Area (SMA) extends into the Resort site approximately 200 feet from the mauka side of Lawai Beach Road (see Figure 6-[2]3). An SMA permit was approved for this area to perform mass grading, and to construct drainage and sewer facilities for the Kukui`ula project. Approximately one-third of the Resort site has been mass graded and is now a detention/retention basin. With the construction of the lagoon, the holding capacity of the basin will be increased.





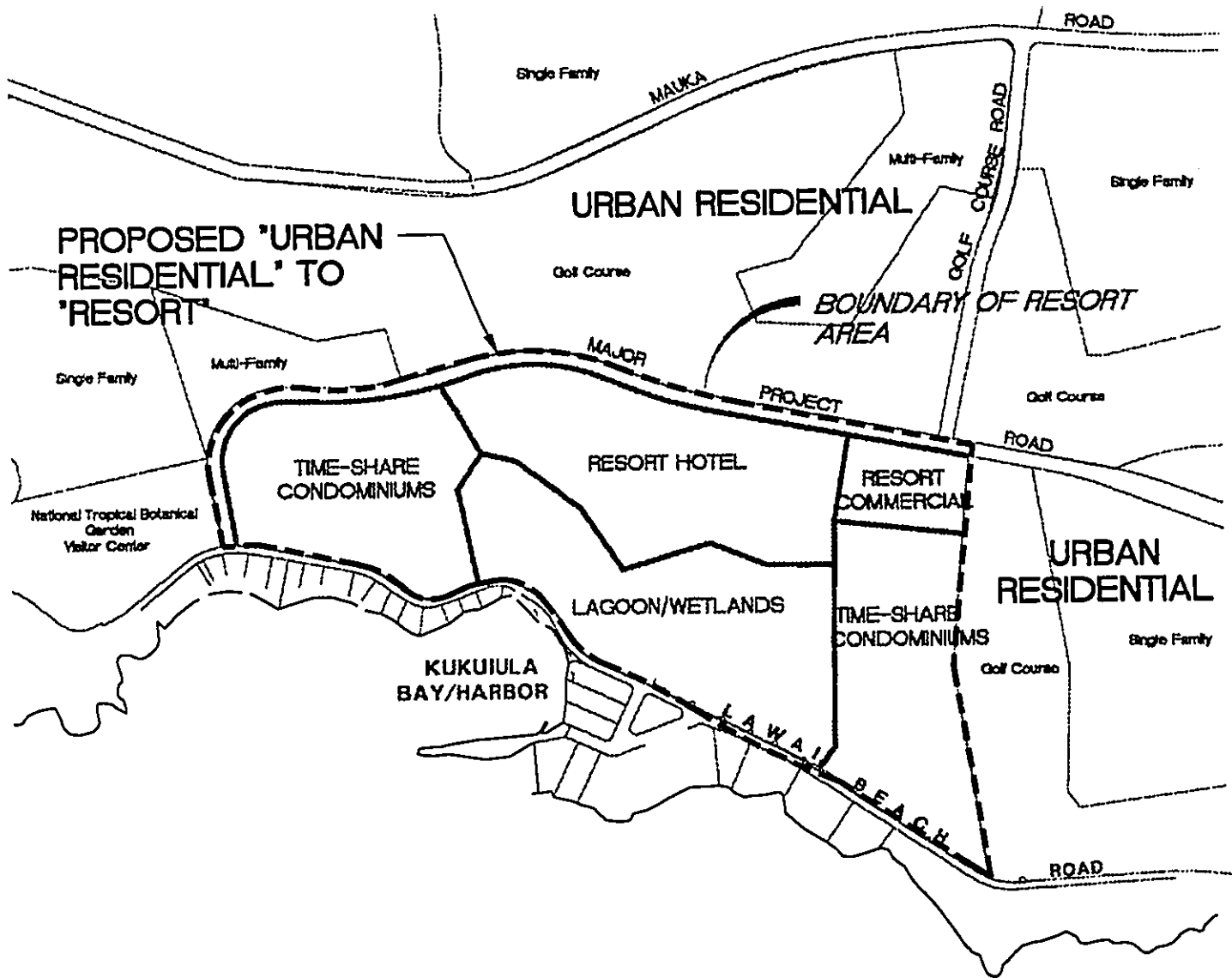


FIGURE 6-2  
PROPOSED GENERAL PLAN MAP

KUKUI'ULA BAY RESORT  
Koloa, Kauai, Hawaii

For: Kukulula Development Company, Inc.  
Koloa, Kauai, Hawaii

By: Townscape, Inc.  
Honolulu, Hawaii

June 1998



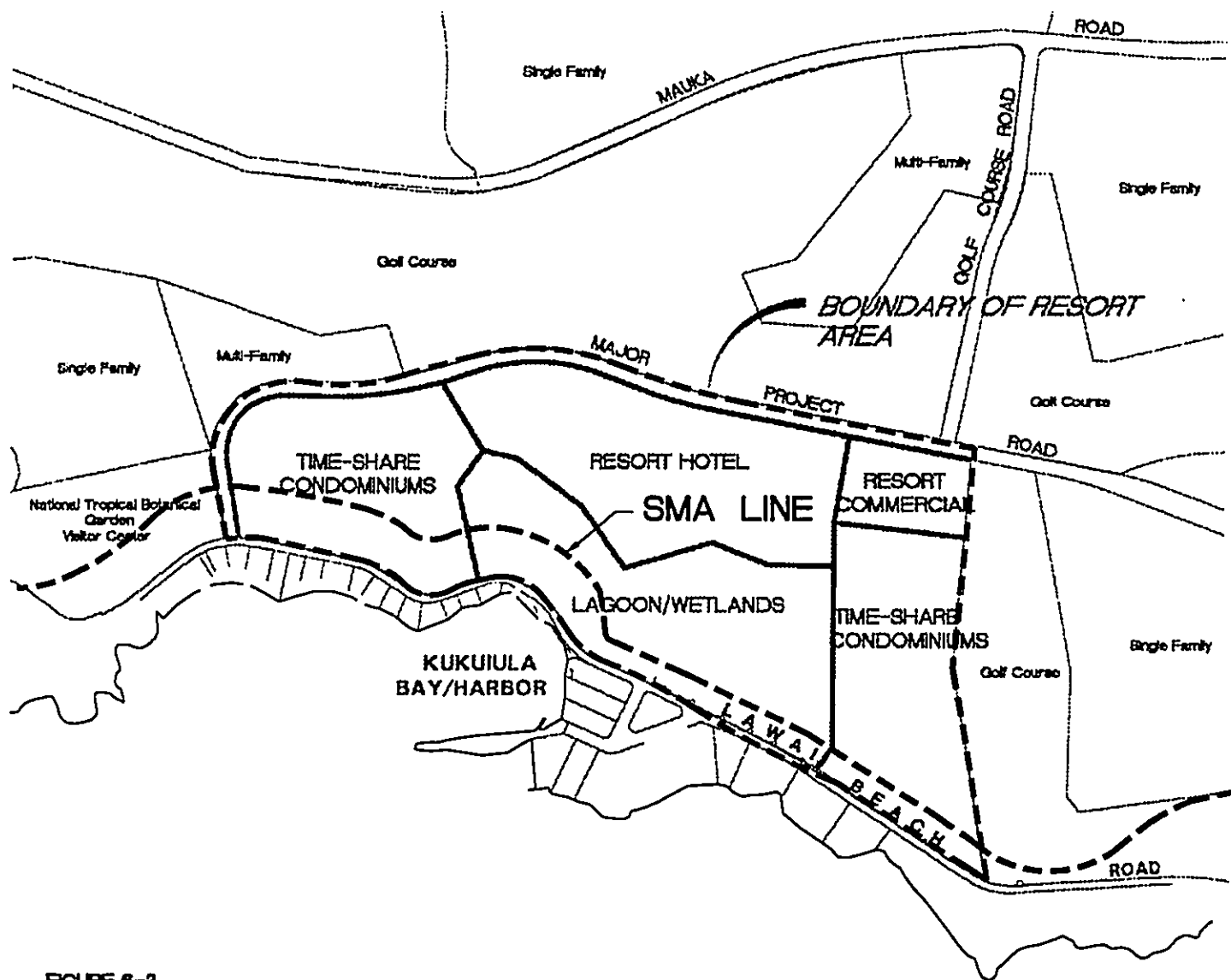


FIGURE 6-3

**SMA MAP**

KUKUI'ULA BAY RESORT  
Koloa, Kauai, Hawaii

For: Kukui'ula Development Company, Inc.  
Koloa, Kauai, Hawaii

By: Townscape, Inc.  
Honolulu, Hawaii

June 1998



The objectives and policies of the County of Kauai SMA Rules and Regulations are generally the same as the objectives and policies of the Coastal Zone Management Program set forth in HRS, Chapter 205A. The project is consistent with the Coastal Zone Management objectives and policies under 205A, HRS, as follows:

#### **6.5.1 Recreational Resources**

The Resort does not have beach or ocean frontage. However, the lagoon will provide a unique recreational/ecological amenity that will be accessible to the public.

Development of the lagoon will involve coordination with the various State, County and Federal agencies prior to and during the construction phases to ensure a healthy environment for wildlife.

As part of the approval for the construction of the culverts at Kukui'ula Bay, environmental monitoring programs were established to ensure that coastal resources would not be adversely impacted by construction of the culverts. These monitoring programs included: water quality monitoring, algae monitoring, coral monitoring, and green sea turtle monitoring. Results showed that the quality of the water in the Bay has improved since the construction of siltation basins mauka of Lawai Beach Road.

#### **6.5.2 Historic Resources**

No archaeological sites of significance are located in the area of the Resort. However, most of the 51 archaeological sites in the rest of the Kukui'ula project have already undergone data recovery and approximately 16 sites will be preserved either in their existing condition or restored.

#### **6.5.3 Scenic and Open Space Resources**

Construction of the lagoon will create an aesthetically pleasing environment for wetland plants and wildlife habitat. The location of the lagoon adjacent to and mauka of Lawai Beach Road will also provide an open space amenity in contrast to the existing urban environment.

#### **6.5.4 Coastal Ecosystems**

Construction of the lagoon will enhance the biological resources in the area by creating a habitat for endangered waterbirds. Best Management Practices will be established to maintain the health of the lagoon.

The lagoon also serves as a drainage retention/detention basin that will filter out silt prior to discharge of stormwater through the outlets at Kukui`ula Bay, thereby reducing the amount of silt entering coastal waters. Monitoring programs indicate that water quality in the bay has significantly improved since the construction of the drainage features.

#### **6.5.5 Economic Uses**

The Resort will provide a diversity of employment opportunities and support the visitor industry and Kauai's economy. The Resort complex will also be developed in a manner that will minimize adverse social, visual and environmental impacts.

#### **6.5.6 Coastal Hazards**

The storm surge generated by Hurricane Iniki was surveyed and documented by KDC. To prevent life threatening hazards to humans from future hurricanes, the lagoon and golf course fairways are planned to be located in the surge zone. Structures are planned at elevations higher than the elevation of the storm surge zone and will be designed with special structural specifications to minimize damage from hurricane winds.

The drainage system that has been designed and partially constructed for Kukui`ula will divert mauka stormwaters to the outlet at Kukui`ula Bay to mitigate flooding impacts to existing developments. The drainage system has also been designed with a series of retention basins that will settle out the silt and sediments prior to discharging at Kukui`ula Bay.

Erosion control measures will be implemented during construction to minimize soil erosion. The development will comply with requirements of the Federal Flood Insurance Program.

### **6.5.7 Managing Development**

Over the years, KDC has had numerous meetings with governmental agencies and the public concerning the Kukui`ula project. A number of meetings and presentations have taken place to inform concerned persons of the project and to receive feedback that could improve the overall plan.

Significant time and money have already been spent to ensure that adverse impacts on the environment are mitigated. To date, KDC has spent over \$40 million for various planning, engineering, environmental and infrastructure services and facilities, including the following:

- Constructed drainage improvements to minimize flood hazards and sedimentation in Kukui`ula Bay.
- Revised the Plan to relocate residential uses outside of the flood/tsunami hazard areas
- Revised the Plan to replace the marina with the lagoon/wetland to reduce adverse environmental impacts, particularly to offshore waters.
- Constructed a regional WWTP to accommodate the Kukui`ula project as well as the Koloa community.
- Constructed roadway improvements along Lawai Beach Road
- Constructed affordable housing at Eleele Nani Phase II and dedicated land for the Paanau Affordable Housing Project.

## **SECTION 7 – RELATIONSHIP BETWEEN SHORT-TERM USES OF THE HUMAN ENVIRONMENT AND THE MAINTENANCE OF LONG- TERM PRODUCTIVITY**

The land on which the Resort is proposed to be developed has already been designated for urban development by the State Land Use Commission and the Kauai County General Plan. This SEIS is being prepared to change the County General Plan designation for 77 acres from “Urban Residential” to “Resort”. A “Resort” designation implies a higher density development. In this case, however, the lagoon site will be about 20 acres and the hotel and timeshare condominiums are planned at a density of 10 units per acre. Thus, the overall density of the 77-acre Resort complex is anticipated to be approximately 10 units per acre. The long-term use of the site will probably be in Resort use.

The current short-term use of a portion of the property for cultivation of papaya and corn will cease when the Resort is constructed.

Because the lagoon will not have any fixed structures, over a long-term, there is a possibility that the lagoon could be developed into other beneficial uses. However, as planned, the lagoon will be developed to attract water birds and provide an open space amenity for the Resort and the community, and will have a positive effect on the environment. In addition, the lagoon will serve its present function as a drainage retention and siltation basin to minimize impacts to nearshore waters.

The Resort complex will provide a long-term beneficial use of the property, and is not expected to pose any long-term risk to health or safety to humans or their environment.

## **SECTION 8 – IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

Construction of the Resort project will require commitment of the necessary construction materials, energy, human and capital resources. However, commitment of these resources will provide benefits to the residents of the region. The capital investment, direct and indirect employment and increased County and State tax revenues will enhance the Kauai economy.

The site does not contain valuable natural or cultural resources. However, development of the lagoon will create a habitat for endangered water birds, which will contribute towards the long-term survival of these species. The lagoon's function as a drainage detention/retention basin will also benefit the natural environment by reducing the volume of silt entering Kukui'ula Bay.

Once structures are built on the site, the land will be committed to Resort and commercial uses over the long-term. In time, the proposed uses could be changed. However, it is doubtful the land would ever revert to a lower intensity use such as agriculture. The lagoon, however, could be altered in the future because permanent structures are not planned to be constructed.



## **SECTION 9 – UNAVOIDABLE ENVIRONMENTAL IMPACTS**

Short-term unavoidable impacts are related primarily to construction. During construction there will be adverse impacts on air quality, noise, and nearshore water quality. However, mitigation measures will reduce these adverse impacts.

Short-term adverse impacts to endangered water birds that forage at Kukui`ula's drainage basin will occur during construction of the lagoon. However, once constructed, the lagoon will have a long-term positive impact by creating a habitat that will aid the continued survival of endangered bird species.

Long-term impacts will be associated with increased traffic and an increase in visitors to the area. New roads will be constructed and improvements will be made to existing roadways to mitigate adverse traffic impacts. An increase in visitors to the area is viewed as a positive impact because it will support the visitor industry on Kauai and bolster Kauai's economy.

Over the long-term, it is unlikely the land would be converted back to agricultural use. However, the new use as a Resort facility will have a positive impact on the economy of Kauai and increase land values and County real property taxes. In addition, other agricultural lands are available on the island of Kauai.

## **SECTION 10 – DETERMINATION, FINDINGS AND REASONS FOR SUPPORTING DETERMINATION**

The following is an assessment, based on the thirteen (13) "Significance Criteria" of Title 11, Chapter 200-12 of the Department of Health Administrative Rules, to determine whether or not the project will have a significant impact on the environment.

- 1) *Involves a loss or destruction of any natural or cultural resources;*

The Resort will not impact natural or cultural resources in the area. Botanical, biological and archaeological surveys were performed and the results indicated that the property did not contain any important natural or cultural resources.

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

Approximately 30 acres of the Resort site are being used for agriculture. The other 47 acres contain portions of the drainage system or have been graded and grassed for the development of the overall Kukui`ula project. The Resort will be a long-term beneficial use of the land because it provides an employment node and a unique visitor center that will enhance the Kauai economy and support the tourist industry.

- 3) *Conflicts with the State's long-term goals or guidelines as expressed in Chapter 344, HRS;*

The proposed development is consistent with Chapter 344, State Environmental Policy because it will not have significant environmental impacts, will be constructed in harmony with the environment. In addition, the State and the County have designated these lands for urban development.

- 4) *Substantially affects the economic or social welfare of the community or state;*

The Resort will have a beneficial effect on the economy and the social welfare of the community. During the construction phase of the project, short term direct and indirect employment will be created. Once the project is constructed, permanent full-time jobs will be created. This increase in jobs will benefit people of the community.

- 5) *Substantially affects public health;*

Short term noise and air quality impacts may occur during the construction phase of the project. However, these impacts can be mitigated as discussed in earlier sections of this SEIS. The Resort will be developed to create a safe and healthy environment for workers and visitors. The lagoon will also provide habitat for endangered bird species, thereby promoting their continued survival.

- 6) *Involves substantial secondary effects, such as population changes or infrastructure demands;*

The Resort probably will indirectly increase the population of the area because of the employment opportunities and amenities provided that will attract new residents. Housing to accommodate this increase in population is planned as part of the overall Kukui`ula project.

Infrastructure requirements will also increase. However, KDC plans to implement infrastructure improvements to service the Resort.

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

The Resort will not substantially degrade environmental quality. The low density proposed and the planned landscaping will be in harmony with the existing environment.

The Resort will comply with the appropriate rules and regulations of the State and the County.

The existing drainage retention/detention basin will be recontoured to create a lagoon that will provide habitat for endangered water bird species. Creation of the lagoon will increase the drainage retention/detention capacity. The lagoon will continue the function of filtering out silt from storm runoff waters before they enter Kukui`ula Bay. The improved water quality in the bay, since the construction of the drainage system, will be maintained. The creation of the lagoon will thus enhance the existing environment.

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

The project is not expected to have a considerable cumulative effect on the environment that will involve the need for larger actions. Demand for other facilities and services beyond what has been identified for the Resort, is not anticipated.

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

According to the botanical and biological surveys, the site did not contain any rare, threatened or endangered species or habitat. The Resort will enhance habitat for rare and endangered bird species by the creation of the lagoon that will provide opportunities for nesting, thereby encouraging their survival.

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

The project is not expected to detrimentally affect air or water quality or ambient noise levels over the long-term. DOH standards for air quality and noise levels are not expected to be exceeded. Roadway improvements are planned to minimize idling time. A significant building setback has been established along Lawai Beach Road to buffer noise from the Resort.

The project is not being developed over a potable water aquifer and is not expected to adversely impact potable groundwater sources. Nearshore water quality will be maintained because of the continued function of the lagoon as a drainage retention/detention basin.

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

The Resort buildings will be constructed at an elevation of 15 feet above msl or higher, which is approximately the highest point of storm water surge from Hurricane Iniki. Post-Iniki building codes will also be used in building construction. The lagoon and building setback areas will buffer the Resort structures from future major storms.

The drainage system for the overall Kukui`ula project has been designed to minimize flooding at the Resort or to other existing downstream developments. This system has been designed to retain excess stormwater runoff for the Kukui`ula project from a 100-year, 24 hour storm.

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

As illustrated in the artist's rendering of the Resort, the project will not adversely affect scenic vistas or view planes. Creation of the lagoon and landscaping within the Resort will enhance the visual quality of the site.

*13) Requires substantial energy consumption.*

The project is not expected to require a substantial consumption of energy. The use of energy conservation devices, such as solar water heaters, will be encouraged to reduce the demand on electricity.

Based on the foregoing, significant adverse environmental impacts are not expected from the development of the Resort.

**SECTION 11 – LIST OF INDIVIDUALS, ORGANIZATIONS  
AND AGENCIES CONSULTED**

**11.1 ORGANIZATIONS**

Koloa Community Association  
National Tropical Botanical Garden

**11.2 FEDERAL**

U.S. Fish and Wildlife Service  
U.S. Army Corps of Engineers

**11.3 STATE**

Department of Business Economic Development and Tourism  
Department of Health  
Department of Land and Natural Resources  
Department of Transportation  
Office of Environmental Quality Control  
State Historic Preservation Division

**11.4 COUNTY**

Office of the Mayor  
County Planning Commission  
County Council  
Planning Department  
Department of Public Works  
Department of Water

**SECTION 12 – LIST OF PREPARERS**

Townscape, Inc.	Bruce Tsuchida, President Joanne Hiramatsu, Senior Planner
Oceanit Laboratories, Inc.	Bob Bourke, Environmental Scientist David Takeyama, Environmental, Urban Planner
Earthplan	Berna Cabacungan, President
Julian Ng Incorporated	Julian Ng, Traffic Engineer
R. M. Towill Corporation	James Yamamoto, Civil Engineer
Corial	Dr. William Magruder, Botanist
Biologist	Mr. Phil Bruner, Biologist

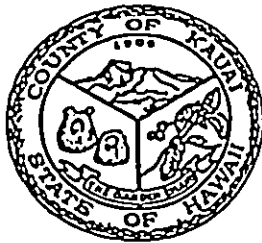


### **SECTION 13 – PREPARATION NOTICE COMMENTS RECEIVED**

The following is a chronological listing of comments received on the SEIS Preparation Notice. The letters and responses to these letters are included in the following pages.

1. County of Kauai, Department of Public Works, April 4, 1998
2. County of Kauai, Department of Water, April 14, 1998
3. State of Hawaii, Land Use Commission, April 15, 1998
4. State of Hawaii, Department of Transportation, April 23, 1998
5. Koloa Community Association, May 1, 1998
6. State of Hawaii, Department of Business, Economic Development & Tourism, May 5, 1998
7. State of Hawaii, Office of Environmental Quality Control, May 7, 1998
8. State of Hawaii, Department of Health, May 14, 1998
9. State of Hawaii, Department of Land and Natural Resources, May 18, 1998

MARYANNE W. KUSAKA  
MAYOR



CESAR C. PORTUGAL  
COUNTY ENGINEER  
TELEPHONE 241-6600

RUSSELL SUGANO  
ACTING DEPUTY COUNTY ENGINEER  
TELEPHONE 241-6631

AN EQUAL OPPORTUNITY EMPLOYER  
COUNTY OF KAUAI  
DEPARTMENT OF PUBLIC WORKS  
4444 RICE STREET  
MO'IKEHA BUILDING, SUITE 275  
LIHU'E, KAUAI, HAWAII 96766

April 4, 1998

Mr. William Campbell  
Kukui'ula Development Company, Inc.  
P.O. Box 430  
Koloa, Hawaii 96756

Dear Mr. Campbell:

**SUBJECT: PREPARATION NOTICE, KUKUI'ULA BAY RESORTS**  
**TMK: 2-6-03:POR 1 AND 21**

Thank you for the preparation notice on the Kukui'ula Bay Resorts project and for the opportunity to offer our comments on the Notice. The Project will change the land use from urban residential to resort. The Department's concern is on traffic and circulation, increase in storm water flowage, and increase in waste water and solid waste. The environmental assessment should cover these issues. The EIS should document that the higher land use will present no adverse impact and/or propose alternatives so that there will be no adverse impacts.

Should you have questions, please do not hesitate to contact Kenneth Kitabayashi at 241-6622.

Very truly yours,

  
CESAR C. PORTUGAL  
County Engineer

KK/llv

cc: Planning Department  
OEQC  
Townscape, Inc.

APR 6 1998

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

June 1, 1998

Mr. Cesar C. Portugal  
County Engineer  
Department of Public Works  
County of Kauai  
4444 Rice Street  
Mo'ikeha Building, Suite 275  
Lihue, Kauai, Hawaii 96766

Dear Mr. Portugal:

**SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii**  
**Supplemental Environmental Impact Statement Preparation Notice**

Thank you for your comments on the Supplemental Environmental Impact Statement (SEIS) Preparation Notice. The SEIS will include a discussion of the impacts and mitigation measures relative to traffic and circulation, storm water flowage, and increase in waste water and solid waste. When completed, a copy of the DSEIS will be submitted to your office for review and comment.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager

# DEPARTMENT OF WATER

County of Kauai

*"Water has no Substitute - Conserve It!"*

April 14, 1998

Mr. William Campbell  
Kukui'ula Development Company, Inc.  
P.O. Box 430  
Koloa, Kauai, Hawaii 96756

Dear Mr. Campbell:

Subject: Preparation Notice - Supplemental Environmental Impact Statement -  
"Kukui'ula Bay Resort, Kukui'ula Planned Community, Koloa,  
Kauai, Hawaii," March 1998

Thank you for allowing the Department of Water, County of Kauai, to comment on the subject Preparation Notice for the supplemental environmental impact statement. We have no objections to the proposed action provided that the water source, storage and transmission facilities are upgraded prior to actual development or subdivision of this area.

Currently, the County's water system facilities are not able to handle the proposed development.

The area involved in the proposed general plan amendment is outside the service area for which the Department's General Plan for Domestic Water was prepared. If this area is urbanized, new source, storage and transmission water system facilities will have to be developed to serve the proposed water demand of this area. Presently, the Department's capital improvement plans does not include water facility improvements for the proposed area or development.

Sincerely,



Ernest Y.W. Lau  
Manager and Chief Engineer

GF

c: OEQC  
Dee M. Crowell, Planning Department  
Townscape, Inc. ✓  
Wayne Hinazumi, WR/P, DOW  
Ed Tschupp, DOW

Koloa/Kukui'ula:emi

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

June 1, 1998

Mr. Ernest Y. W. Lau  
Manager and Chief Engineer  
Department of Water  
County of Kauai  
4398 Pua Loke Street  
Lihue, Kauai, Hawaii 96766

Dear Mr. Lau:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Supplemental Environmental Impact Statement Preparation Notice

Thank you for your comments on the Supplemental Environmental Impact Statement (SEIS) Preparation Notice. New potable water source, storage and transmission facilities will be constructed for the project, as needed, to service the Resort.

The Draft Supplemental Environmental Impact Statement (DSEIS) will include a discussion on the potable water requirements. When completed, a copy of the DSEIS will be submitted to your office for review and comment.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,

  
William H. Campbell  
Executive Vice President and Manager

BENJAMIN J. CAYETANO  
GOVERNOR



ESTHER UEDA  
EXECUTIVE OFFICER

STATE OF HAWAII  
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
LAND USE COMMISSION

P.O. Box 2359  
Honolulu, HI 96804-2359  
Telephone: 808-587-3822  
Fax: 808-587-3827

April 15, 1998

Mr. William H. Campbell  
Kukui'ula Development Company, Inc.  
P. O. Box 430  
Koloa, Hawaii 96756

Dear Mr. Campbell:

Subject: Supplemental Environmental Impact Statement  
Preparation Notice (SEISPN) and Addendum for the  
Kukui'ula Bay Resort, Koloa, Kauai, Hawaii, TMK  
2-6-03: por. 1 and 21

We have reviewed the SEISPN and Addendum for the subject project and have the following comments:

- 1) The Addendum states that the resort site, as represented on the vicinity map in the SEISPN, was incrementally reclassified to the Urban District by the Commission. We would like to clarify that only a portion of the proposed resort site was included as part of the approximately 284.829 acres of land that was incrementally redistricted to the Urban District under LUC Docket No. A93-696/Kukui'ula Development Co., Inc. The remaining area of the resort site was the subject of LUC Docket No. A85-589/A&B Properties, which involved the reclassification of approximately 219 acres of land from the Agricultural District to the Urban District.
- 2) We confirm that Petitioner Kukui'ula Development Co., Inc., has filed a Motion for Order to Amend Findings of Fact, Conclusions of Law, and Decision and Order Dated May 18, 1995, with the Commission to i) transfer and include that portion of the resort site, consisting of approximately 77 acres of land, currently in Increment II to Increment I to reflect proposed changes from Petitioner's Town Center concept to its Kukui'ula Bay Village concept; ii) modify and delete certain conditions of approval; and iii) release and delete a 10-acre portion of Increment I from the application of

Mr. William H. Campbell  
April 15, 1998  
Page 2

the conditions of approval. The hearing on this matter is scheduled for May 28, 1998, in Lihue, Kauai. A hearing agenda will be sent to you in the future.

- 3) We suggest that the SEIS include an assessment of the impacts of the revised project, including the development of the resort hotel and lagoon and the relocation of a portion of the golf course, upon the nearshore water quality, groundwater, recreational, and other resources of the area. Additionally, the projected costs of the revised project should be included in the SEIS.

We have no further comments to offer at this time. We appreciate the opportunity to comment on the SEISPN and Addendum.

Should you have any questions, please feel free to call me or Bert Saruwatari of our office at 587-3822.

Sincerely,



ESTHER UEDA  
Executive Officer

EU:th

cc: OEQC  
Dee Crowell, County of Kauai Planning Dept.  
Joanne Hiramatsu, Townscape, Inc.

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

June 1, 1998

Ms. Esther Ueda  
Executive Officer  
Land Use Commission  
P.O. Box 2359  
Honolulu, Hawaii 96804-2359

Dear Ms Ueda:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Supplemental Environmental Impact Statement Preparation Notice

Thank you for your comments on the Supplemental Environmental Impact Statement (SEIS) Preparation Notice. We concur that only a portion of the Resort site was incrementally redistricted to the Urban District (LUC Docket No. A93-696/Kukui'ula Development Co., Inc.), and that the remaining area of the Resort site was reclassified to the Urban District under LUC Docket No. A85-589/A&B Properties.


We acknowledge that a Motion for Order to Amend Findings of Fact, Conclusions of Law, and Decision and Order was filed and a hearing was held on May 28, 1998 and action by the SLUC is pending.

The Draft Supplemental Environmental Impact Statement (DSEIS) will include discussions on the impact of the Resort upon nearshore water quality, groundwater, recreational facilities, and other resources of the area. Construction cost estimates for the Resort will also be included in the DSEIS.

When completed, a copy of the DSEIS will be sent to your office for review and comment.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,

  
William H. Campbell  
Executive Vice President and Manager



BENJAMIN J. CAYETANO  
GOVERNOR



KAZU HAYASHIDA  
DIRECTOR  
DEPUTY DIRECTORS  
BRIAN K. MINAAI  
GLENN M. OKIMOTO

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

IN REPLY REFER TO:  
STP 8.8539

April 23, 1998

Mr. William H. Campbell  
Kukui'ula Development Company, Inc.  
P.O. Box 430  
Koloa, Hawaii 96756

Dear Mr. Campbell:

Subject: Kukui'ula Bay Resort  
Supplemental EIS Preparation Notice  
TMK: 2-6-03: por. 1 and 21

Thank you for your transmittal requesting our comments on the supplemental EIS preparation notice.

The new or revised Traffic Impact Analysis Report (TIAR) should reflect the parameters and findings contained in the updated Kauai Long Range Land Transportation Plan dated May 1997. Also, our letter of June 6, 1995, STP 8.6809 (copy attached), provides some guidance as to the level of detail and items the TIAR is expected to address.

We appreciate the opportunity to provide comments.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Glenn M. Okimoto".

KAZU HAYASHIDA  
Director of Transportation

Attach.

c: Mr. Gary Gill, Office of Environmental Quality Control  
Mr. Dee Crowell, Kauai Department of Planning

~~Ms. Joanne [redacted]~~

STP 95-061  
STP 8.6809

June 6, 1995

Mr. Dee M. Crowell  
Director  
Department of Planning  
County of Kauai  
Suite 473, Building A  
4444 Rice Street  
Lihue, Hawaii 96766

Dear Mr. Crowell:

Subject: Zoning Amendment ZA 95-7, A & B at Kukuiula, Kauai

Thank you for your transmittal of April 7, 1995, requesting our review of the subject application.

We have the following comments:

1. The petition and traffic report are silent as to the specific responsibilities of the developer to provide required roadway improvements. The developer should be responsible for providing those roadway improvements necessary to mitigate the traffic impacts directly attributable to his development, and to participate in his prorata share of regional improvements, including the widening of Kaumualii Highway.
2. We would be particularly concerned with the impacts to our state highway facilities, specifically, along Kaumualii Highway, and at the intersections of Kaumualii Highway and Maluhia Road, and with Koloa Road. The report should be expanded to address this, including the assumptions and evaluations, forecasts, and recommended improvements.
3. The report assumes that the recommended road improvements identified in the Kauai County Highway Planning Study will be in place by the implementation of the proposed project. This is an erroneous assumption.

Those roadway improvements identified on the plan are intended to guide planners and decision makers on the recommended alternative infrastructure requirements, so that rights-of-way can be reserved and setbacks established, as necessary; and to secure the resources, including funding, to pursue project development (i.e., preliminary engineering, design, and construction). It is by no means a commitment that the improvements will be implemented. The project development hurdles, including the environmental requirements, alternative testing, public informational hearing, etc., must still be performed.

The study should be revised to reflect the existing plus "committed" roadway network (i.e., those projects funded and where construction is imminent). Specifically, the report should assess the conditions with Kaunualii Highway as a two lane facility and recommend interim measures to address the additional congestion. It is unlikely that a widening would be in place by 2001.

4. A project of this magnitude will have a substantial impact on the roadway system in the area. While the report does acknowledge this, it does not appear that the full impact of this proposal is adequately depicted.
  - a. A substantial portion (738 of 1,738) of the dwelling units is classified as "Non-commuter" and the trip generation for this type of classification is significantly lower than the single family or multi-family units. Specifically, the trip generation rates for the single family dwelling units are 9.55, 0.74, and 1.01 for the daily, AM peak, and PM peak, respectively; for the multi-family, it is 6.47, 0.51, and 0.63; and for the non-commuter, it is 4.70, 0.20, and 0.40. The total number of trips produced are thus dramatically reduced by this non-commuter assumption.

Compounding the problem is that the directional splits for the non-commuter units are opposite from those of the single family or multi-family units. The AM peak for single family units assumes 26% of the trips entering and 74% leaving and for the PM peak, it is 65% and 35%, respectively. For the multi-family units, the comparable figures are 17% and 83%, and 68% and 32%. The non-commuter units, assume the reverse with 67% and 33%, and 41% and 59%.

Clarification should be provided on what a non-commuter unit assumes, including its definition.

Mr. Dee M. Crowell  
Page 3  
June 6, 1995

STP 8.6809

- b. The affordable housing units are not reflected in the trip generation. If a substantial number of units are involved, the trip generation would be significantly underestimated.
- c. The trip distribution is questionable. The report assumes that 25% of trips will remain internal to the area and not appear on the major roadways. Additionally, the report assumes that only 45% of the trips will be bound east of Koloa.

Current land use patterns and travel survey information indicate these percentages to be overly conservative, and the number of trips external to the area heading toward Lihue would be significantly underestimated.

The applicant should submit information to substantiate the assumptions in the traffic report, and/or revise his analyses accordingly.

We appreciate this opportunity to provide comments.

Should you have any questions, please contact Julia Tsumoto of our Statewide Transportation Planning Office at 587-1845.

Very truly yours,



KAZU HAYASHIDA  
Director of Transportation

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

June 1, 1998

Mr. Kazu Hayashida  
Director of Transportation  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Dear Mr. Hayashida:


SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Supplemental Environmental Impact Statement Preparation Notice

Thank you for your comments on the Supplemental Environmental Impact Statement (SEIS) Preparation Notice. An updated Traffic Impact Analysis Report (TIAR) has been prepared for the SEIS. The TIAR reflects the parameters and findings contained in the Kauai Long Range Land Transportation Plan dated May 1997. Your letter of June 6, 1995 has been used as a guide in preparing the TIAR.

A copy of the TIAR and a summary will be included in the DSEIS. When completed, the DSEIS will be sent to your office for review and comment.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,

  
William H. Campbell  
Executive Vice President and Manager



**KOLOA COMMUNITY ASSOCIATION  
P.O. BOX 1313  
KOLOA, KAUAI, HAWAII 96756**

**Via Facsimile 808-241-6699**

May 1, 1998

Dee Crowell , Kauai County Planning Director  
County of Kauai, Planning Department  
Contact: Keith Nitta  
4444 Rice St., Suite 4473  
Lihue, HI 96766

Re: Kukui'ula Bay Village , A&B Proposal for Koloa Area

**KOLOA COMMUNITY ASSOCIATION RESPONSE:**

The proposed hotel and time share condominiums with a lagoon/wetlands area is more palatable than the earlier proposals. If a hotel is to be added in the south shore area, we only support that occurring in the westerly direction. We trust the walk areas through the lagoon/wetlands will be open to the community to use as well as residents of the area. We are also concerned that this proposed project be of the same quality as those hotels presently in the south shore . It was our understanding that Zoning for condominiums in the south shore was at a maximum .

Our concerns are several:

**1. INFRASTRUCTURE:**

The most significant issue is the infrastructure/traffic concern. The proposal will increase the road use many times over (200 rooms, 300 condos =900-1000 additional cars per day). A basic principle is that this development should not diminish the quality of life for the present residents of Koloa, during the construction or once it is open and functioning. Therefore, significant improvements in the infrastructure will be required. These should be in place when construction begins. ( Not like the eastern bypass that was only built after the disaster of the roads of Koloa/Poipu after the Hyatt opened) We

can only support this proposal IF significant traffic remedies are installed at the beginning of the development. We believe that the western bypass is a basic requirement, through to Malahia Rd. Should the improvements be diminished, deleted, or delayed to completion - we CANNOT support this development. A signal at the entrance or the Lawai intersection is not a solution to the traffic increase. A good traffic plan should be developed for the area. We want to call attention to the plan for an exit from the project across from Gloria's B&B. This will trigger serious congestion and impact this area negatively. If the road is moved closer to the Spouting Horn entrance, it will put increased traffic in an area that is already designated a busy location.

## 2. RECREATIONAL FACILITIES:

What plans are there for meeting the needs for recreation for this major increase in people, both tourist and longer term residents? The beach area at the Sheraton cannot possibly sustain this increase. It would destroy the quality totally, for the Sheraton/Kiahuna residents as well as the many residents who presently recreate here regularly. Poipu Park can handle more, but hardly this large amount.

The park for residents will be needed for this increase as well as keeping the commitment to the community to provide this recreational area.

A swimming pool might be a partial solution for an alternative activity to the beach. A gym or youth center would be a very wise idea.

## 3. CONTRIBUTION TO THE KOLOA COMMUNITY:

We ask what this project is offering the present community in improving our quality of life. We can see many ways in which the community is in danger of losing quality. What is being contributed?

The park for residents and a swimming pool might be a partial solution. A gym or youth center would be a very wise idea. Assistance with the transfer station would be helpful to the community also.

## 4. AGREEMENTS WITH COUNTY/KOLOA AREA:

An on-going problem with developments on the south shore has been the lack of consistent follow through on commitments that are made as conditions of the project.

There is a list of conditions that were placed on this project in 1995. They include:  
Phase one 65% build-out before Phase 2 considered;  
traffic plans for construction and permanent use;

participation in road development and improvements;  
marine studies;  
commercial development plans;  
EIA regarding road changes;  
\$250,000 towards cost of road changes;  
several park dedications;  
paths to and from the parks;  
participation in transfer station.

These should be reviewed and carefully determined which need to be completed now, prior to permitting, and which will be completed at the end of the project. We would like to be included in that discussion so that the communities needs are met.

We also comment that there is a study on visitor units approved in the south shore area. (This is commonly known as Heather's report.) It would be appropriate to review this proposal for additional units with this study in mind.

In conclusion the expansion of this development should be accompanied by the necessary segments of infrastructure . To assure that this occurs , this developer should be required by ordinance to not only accomplish that part of the infrastructure ( streets , sewer, utilities, parks, etc. ) that occurs within their property boundaries , but also to the development of offsite improvements impacted by this development .

Sincerely ,



Fred Jager , President

c. Via Facsimile :  
C. Townscape  
A&B Properties



**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

June 1, 1998

Mr. Fred Jager, President  
Koloa Community Association  
P.O. Box 1313  
Koloa, Kauai, Hawaii 96756

Dear Mr. Jager:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Supplemental Environmental Impact Statement Preparation Notice

Thank you for your comments on the Supplemental Environmental Impact Statement (SEIS) Preparation Notice. The following is a response to concerns raised in your letter.

1. Infrastructure

An updated Traffic Impact Analysis Report (TIAR) was prepared for this revision to the Master Plan. The TIAR that was prepared for the original 1989 EIS addressed impacts from a 4,538-unit project, which included 500 hotel rooms. The current plan has a total of 3,400 units, including 200 hotel rooms, 300 timeshare units and 200 "lock-outs".

The updated traffic study concluded that the changes in the plan would result in only nominal increase in traffic and that the improvements identified in the 1989 plan are still generally valid. Lawai Beach Road has limited capacity to accommodate additional units. Thereafter, the Mauka Road or the Major Project Road will be needed to access the Resort. New or improved roads will be implemented at the appropriate time.

When all of the project roadways are constructed, the roadway system will relieve some of the existing traffic problems on Poipu Road and Lawai Beach Road because these improvements will provide alternative access routes.

2. Recreational Facilities

As part of the overall Kukui'ula project, there are a number of passive and active park sites that are planned, including a number of preserve sites. An 18-hole golf course is also part of the overall master plan for the project that will add to the recreational facilities in the area.

According to County ordinance, park dedication requirements for the Kukui'ula project would be approximately 14 acres. The Kukui'ula project currently has a total of 32 acres

Mr. Fred Jager, President

June 1, 1998

Page 2

designated for parks, plus 11.5 acres for the archaeological park, and 11.5 acres of open space preserve. This acreage more than satisfies the County park dedication requirements.

The Resort is also expected to provide on-site recreational activities such as swimming and tennis that would minimize impact upon nearby public recreational facilities. The lagoon also provides a unique educational and ecological attraction for visitors and residents.

3. Contribution to the Koloa Community

As indicated in item 2 above, parks and preserves throughout the Kukui'ula project are more than what is required under County ordinance. The parks and church sites planned within the project could be potential locations for a gym or youth center.

As part of the conditions of the General Plan ordinance for the Kukui'ula project, A&B is required to participate in the long range planning of a refuse transfer station for the Koloa-Poipu area.

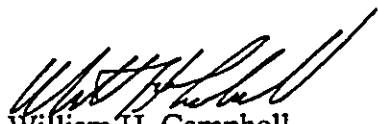
4. Agreements with County/Koloa Area

We acknowledge the conditions imposed as part of the zoning and general plan ordinances for the Kukui'ula project.

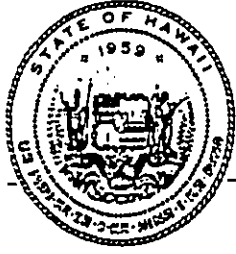
The necessary permits and approvals required for development of the project will be obtained pursuant to State and County rules and regulations. We will be seeking input from the local community as we process those applications. All infrastructure will be constructed, as needed, to service the various project components.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

BENJAMIN J. CAYETANO  
GOVERNOR  
SEIJI F. NAYA  
DIRECTOR  
BRADLEY J. MOSSMAN  
DEPUTY DIRECTOR  
RICK EGGED  
DIRECTOR, OFFICE OF PLANNING

**OFFICE OF PLANNING**

235 South Beretania Street, 6th Fl., Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Tel.: (808) 587-2846  
Fax: (808) 587-2824

Ref. No. P-7429

May 5, 1998

Kukui'ula Development Company, Inc.  
P.O. Box 430  
Koloa, Hawaii 96756

Attn: William H. Campbell

Gentlemen:

Subject: Addendum to Preparation Notice for the Supplemental Environmental Impact Statement for Kukui'ula Bay Resort

Our previous comments regarding our concern about the potential impacts of hurricanes and other storms on Kauai remain applicable. The site is in a hazard zone for tsunami and storms as well as for stream flooding. For this reason, the use of adequate setbacks, hazard resistant structural features, and other hazard mitigation measures are encouraged. We also recommend that the proposed wetlands and water features be designed to maximize their hazard mitigation potentials.

If there are any questions, please contact Howard Fujimoto of our Coastal Zone Management Program at 587-2898.

Sincerely,

  
Rick Egged  
Director  
Office of Planning

cc: Planning Department, County of Kauai  
(Attn: Dee M. Crowell)  
Townscape, Inc. (Attn: Joanne Hiramatsu)  
Gary Gill, OEQC  
Seiji F. Naya, DBEDT

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

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June 1, 1998

Mr. Rick Egged, Director  
State of Hawaii  
Department of Business, Economic Development & Tourism  
P.O. Box 2359  
Honolulu, Hawaii 96804

Dear Mr. Egged:

SUBJECT: Kukui`ula Bay Resort, Koloa, Kauai, Hawaii  
Supplemental Environmental Impact Statement Preparation Notice

Thank you for your comments on the Supplemental Environmental Impact Statement (SEIS) Preparation Notice.

The master plan for the overall Kukui`ula project was revised after Hurricane Iniki to minimize storm impacts on residential areas. Portions of the golf course were moved to the makai side of the project where storm water surge inundated the site. The residential areas were moved mauka and outside of the storm surge area. A 100-foot building setback has also been established along Lawai Beach Road.

Structures in the Resort will be constructed at a minimum of 15 feet above mean sea level, which is the approximate elevation of storm water surge from Hurricane Iniki. Buildings will also be constructed to post-Iniki building codes that were adopted by the County of Kauai.

The lagoon (wetland) will be constructed to maintain the existing function as a drainage retention/detention basin. The constructed lagoon will also increase the storm water holding capacity of the existing drainage basin.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager

BENJAMIN J. CAYETANO  
GOVERNOR



GARY GILL  
DIRECTOR

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET  
SUITE 702  
HONOLULU, HAWAII 96813  
TELEPHONE (808) 586-4186  
FACSIMILE (808) 586-4186

May 7, 1998

Mr. Dee M. Crowell, Director  
Planning Department  
4444 Rice Street, Suite 473  
Lihue, Hawaii 96766

Dear Mr. Crowell:

Subject: Supplemental EIS Preparation Notice for the Kukuiula Bay  
Resort, Kauai

Thank you for the opportunity to review the subject document. We  
have the following comments and questions.

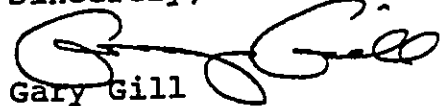
1. This project will excavate an existing drainage basin to create a lagoon/wetland. Please describe whether the dredged materials may contain any pollutants and disclose where the excavated materials will be disposed. Also describe whether the excavation will impact adjacent shorelines, streams, nearshore waters and groundwater.
2. The 1989 EIS for the Kukuiula Planned Community recommended that three significant archaeological sites be preserved. Please describe the status of the preserved sites.
3. Green sea turtles, monk seals and humpback whales are known to occur in this area. Please describe whether this project will impact the above animals.
4. The proposed development will change the visual element of the existing landscape. Please illustrate the visual impacts of the proposed structures from public places such as roads and lookouts. Photos of existing conditions taken from public view points are helpful in evaluating visual impacts. Renderings of future structures superimposed on photos of existing views should be provided.
5. This development and the growth it induces will change the social and economic character of the Koloa area. Please conduct a social impact study to evaluate the effects on the surrounding community.

Mr. Crowell  
Page 2

6. This project will reduce the amount of land zoned for residential development and simultaneously increase local employment opportunities. Please describe how this development will impact housing demand in the surrounding area.
7. Please include in the draft EIS the latest conceptual plan for the Kukuiula Planned Community.
8. Please assess the cumulative impacts associated with this action. The analysis should cover all existing and reasonably foreseeable future projects in the area.
9. Please evaluate the significance of impacts based on the criteria listed in §11-200-12 of the EIS rules.

Should you have any questions, please call Jeyan Thirugnanam at 586-4185.

Sincerely,

  
Gary Gill  
Director

c: Kukuiula Development Company, Inc.  
Townscape, Inc.

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

June 1, 1998

Mr. Gary Gill, Director  
State of Hawaii  
Office of Environmental Quality Control  
235 South Beretania Street, Suite 702  
Honolulu, Hawaii 96813

Dear Mr. Gill:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Supplemental Environmental Impact Statement Preparation Notice

Thank you for your comments on the Supplemental Environmental Impact Statement (SEIS) Preparation Notice. The following is a response to your comments.

1. The existing drainage basin is dry most of the year except after a storm event and is not expected to contain any pollutants. The SEIS will describe impacts on nearshore waters and ground water.
2. The Resort area does not contain any archaeological sites.
3. The potential impacts on green sea turtles, monk seals and humpback whales were concerns in the 1989 EIS because of the construction of the proposed marina. At that time, blasting was planned to breach the shoreline to provide an entrance to the marina and dredging was to take place in Kukui'ula Harbor. Therefore, monitoring of these animals would have been required to ensure that noise from blasting or silt entering the ocean from the breached shoreline and dredging operations would not have an adverse impact. The marina is no longer being considered. Excavation of the lagoon will occur on land within an area serviced by the existing drainage system. Thus, the likelihood of causing adverse impacts on these animals has been eliminated.
4. The SEIS will include a photo of the existing site and a photo montage showing what the site might look like after the Resort has been constructed.
5. A community Issues Analysis study was conducted for the project. That report will be included in the Appendix of the SEIS. A summary will be provided in the body of the SEIS.
6. The area of the proposed Resort was always planned for resort, visitor accommodations or commercial uses to serve as a focal point and employment center for the residential

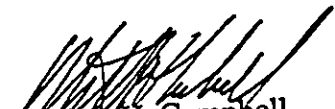
Mr. Gary Gill, Director  
June 1, 1998  
Page 2

components of the Kukui`ula project. The residential areas planned in the Kukui`ula project should more than satisfy the housing demand that may result from people moving into the area because of employment opportunities created at the Resort.

7. The latest conceptual plan for the Kukui`ula project will be included in the SEIS.
8. The SEIS will assess cumulative impacts that are associated with the proposed action. There are no other known major projects planned in the region. However, the analysis will include a discussion of existing and future conditions.
9. Section addressing the significance criteria listed in §11-200-12 is included in the SEIS.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell

Executive Vice President and Manager



BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII



LAWRENCE MIKE  
DIRECTOR OF HEALTH

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. BOX 3378  
HONOLULU, HAWAII 96801

In reply, please refer to

May 14, 1998

98-067/epo

Mr. William H. Campbell  
Kukui'ula Development Co., Inc.  
P. O. Box 430  
Koloa, Kauai, Hawaii 96756

Dear Mr. Campbell:

Subject: Supplemental Environmental Impact Statement  
Preparation Notice (EISPN)  
Kukui'ula Bay Resort  
Koloa, Kauai  
TMK: 2-6-3: por. 1 & 21

Thank you for giving us the opportunity to review the subject document. The following issues should be addressed by the supplemental environmental impact statement:

1. The impact of the adjacent agricultural activities in regard to associated nuisances, such as fugitive dust and agricultural burning.
2. The impact of fugitive dust emission from the excavation, stockpiling, and grading operation on the residents downwind of the site.
3. The impact of mosquito breeding in the lagoon, wetlands and existing drainage swales on both residents and visitors.
4. The impact of odor nuisance to the nearby residents residing within the project site and those along Lawai Beach Road caused by stagnant water and rotting vegetation in the lagoon, wetlands, and the existing drainage swales.
5. The impact of construction and stationary noise to the residents and visitors.
6. Describe mitigating measures for the control of polluted runoff (erosion control) from entering State waters.

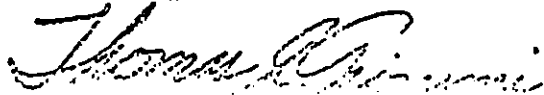
Mr. William H. Campbell  
May 14, 1998  
Page 2

98-067/epo

7. We also recommend that the enclosed "Waste Minimization Measures" be implemented wherever possible.

If you have any questions on these comments, please call Mr. Clyde Takekuma, District Environmental health Program Chief, Kauai District Health Office at 241-3323.

Sincerely,



BRUCE S. ANDERSON, Ph.D.  
Deputy Director for  
Environmental Health

Enclosure

c: Kauai DHO  
OSWM  
CWB  
OEQC  
Kauai County  
Townscape, Inc.

THE FOLLOWING ARE A FEW WASTE MINIMIZATION MEASURES FOR IMPLEMENTATION IN DESIGN AND CONSTRUCTION OF NEW DEVELOPMENTS:

I. WASTE REDUCTION DURING CONSTRUCTION/DEMOLITION

GREENWASTE - SOD AND TOP SOIL COMPOSTING  
CONCRETE OR ASPHALT RECYCLING - ROCK & BOULDER  
SEPARATION  
SALVAGE OF DIMENSIONAL LUMBER  
METALS RECOVERY

WASTE MINIMIZATION PLAN - USUAL PRACTICE BUT  
EMPHASIZE  
SALVAGE BY LOCAL NON-PROFIT  
HAZWASTE MINIMIZATION - ESPECIALLY SUB-CONTRACTORS

II. USE OF RECYCLED MATERIALS

LOCAL COMPOST - SOIL AMENDMENTS  
CRUSHED GLASS IN PAVING - BASE - BACKFILL  
CONSTRUCTION BOARD WITH RECYCLED CONTENT  
RECYCLED CONCRETE OR ASPHALT IN BASE  
RECYCLED PLASTIC "LUMBER" IN OUTDOOR FURNITURE,  
FENCING, ETC.

III. DESIGN AND OPERATIONAL REQUIREMENTS

CONSIDER SPACIAL REQUIREMENTS AT INTERNAL  
COLLECTION AND EXTERNAL STORAGE AREAS  
REVIEW OPERATIONAL REQUIREMENTS WITH MAINTENANCE  
AND CUSTODIAL STAFF  
PROVIDE COLLECTION CAPABILITIES FOR SEPARATED  
GREENWASTE  
DISCUSS EQUIPMENT AND CONTAINER REQUIREMENTS WITH  
HAULERS AND VENDORS  
MULTI-MATERIAL CHUTES IN HIGH RISES  
CONVENIENT DROP-OFF SITES IN TOWN HOUSES  
INTERNAL TENANT RECYCLING IN SHOPPING CENTERS

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

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June 1, 1998

Bruce S. Anderson, Ph.D.  
State of Hawaii  
Department of Health  
P.O. Box 3378  
Honolulu, Hawaii 96801

Dear Dr. Anderson:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Supplemental Environmental Impact Statement Preparation Notice

Thank you for your comments on the Supplemental Environmental Impact Statement (SEIS) Preparation Notice. The following is a response to your comments.

1. The 1989 EIS addressed issues associated with sugarcane operations. However, McBryde Sugar Company, no longer cultivates sugarcane in the vicinity of the site. Thus, no adverse impacts from fugitive dust or agricultural burning from sugarcane operations are anticipated.

A portion of the Resort site is currently planted in corn and papaya under short-term license agreements. These lands will be removed from cultivation when the Resort is constructed.

2. Dust control measures will be implemented during construction to minimize adverse impacts on residents downwind of the site.
3. The drainage swales are typically dry, except after a storm event. Thus, mosquito breeding is not expected. The lagoon (wetland) will be stocked with fish to control mosquitoes. In addition, the water within the lagoon will have significant circulation, and this should minimize mosquito breeding.
4. Best Management Practices will be established for maintenance of the lagoon to minimize potential odors. The water in the lagoon will be circulated constantly to minimize stagnation.
5. Short term noise impacts may occur during construction. However, establishing start and curfew times, and use of mufflers on construction vehicles and equipment will reduce these impacts.

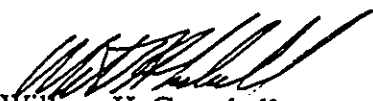
Bruce S. Anderson, Ph.D.  
June 1, 1998  
Page 2

A 100-foot wide building setback strip has been established on the mauka side of Lawai Beach Road to buffer potential stationary noise impacts from the Resort. The lagoon also provides an additional separation between Lawai Beach Road and the Resort. Landscaping, berms and walls can also be utilized to attenuate potential noise impacts.

6. The drainage system that has been designed and largely constructed for the Kukui`ula project will mitigate impacts on State waters. This drainage system will retain excess storm water runoff from impervious surfaces on-site. Siltation basins are planned throughout the Kukui`ula site to filter out silt prior to discharge into coastal waters. Water quality monitoring studies that have been performed from 1991 to the present indicate that there has been a significant improvement in the quality of nearshore waters. Salinity levels have increased, indicating that the volume of runoff entering the ocean has been reduced. It is also estimated that the amount of silt entering coastal waters has been reduced from 19,000 tons per year to 3,380 tons per year.
7. "Waste minimization measures" will be implemented wherever possible.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,

  
William H. Campbell  
Executive Vice President and Manager

BENJAMIN J. CAYLTANO  
GOVERNOR OF HAWAII



MICHAEL D. WILSON, CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

GILBERT COLOMA-AGARAN

AQUACULTURE DEVELOPMENT  
PROGRAM

AQUATIC RESOURCES  
CONSERVATION AND

RESOURCES ENFORCEMENT  
CONVEYANCES

FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION

DIVISION

LAND DIVISION

STATE PARKS

WATER AND LAND DEVELOPMENT

COPY

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
33 SOUTH KING STREET, 6TH FLOOR  
HONOLULU, HAWAII 96813

May 18, 1998

Mr. William Campbell  
Kukui'ula Development Company, Inc.  
P.O. Box 430  
Koloa, Hawaii 96756

LOG NO: 21267 ✓  
DOC NO: 9804NM10

Dear Mr. Campbell:

**SUBJECT: Historic Preservation Review -- PN Supplemental EIS  
Kukui'ula Bay Resort  
Koloa, Kaua'i**

In 1988, an archaeological survey was conducted (Hammatt, et.al. 1988) which identified 58 significant historic sites (including some heiau, habitation sites, and irrigated agricultural sites).

A number of these significant sites were slated for archaeological data recovery (salvage). Seventeen significant historic sites in the Phase I project were mitigated by archaeological data recovery work, with the fieldwork complete in 1992-93 by Cultural Surveys Hawaii. An acceptable report on this data recovery work has yet to be received. Currently, the first draft of this report is still being revised and we are awaiting the revised report. Recently, Phase II data recovery work has been conducted at significant sites committed by agreement to this form of mitigation. An archaeological data recovery report has yet to be submitted to our Division for review, but it is anticipated a draft will be received in the next 6 months.

Within both Phases I and II, other significant sites were committed by agreement to be preserved. A draft preservation plan has been submitted to our Division. It is our understanding that we are awaiting the data recovery report for interpretative sign text to be finished for the preservation plan. One historic house with an oven is slated for preservation in Phase II, and it is currently being evaluated if this site truly merits preservation. Pending findings from oral interviews and archival work, this site will either remain in preservation or be shifted to data recovery (with the oral and archival work constituting the data recovery).

Additionally, during the past year our staff archaeologist and an archaeologist from the community inspected CSH 4 (State Site No. 50-30-10-1904) listed as a rock pile. Upon further inspection, it appears that beneath the cane field rocks, there is a two terraced platform, which

W. Campbell  
Page 2

appears to align with the other heiau on this ridge. This changes the description and interpretation of this site. We recommend that this site now should be preserved. According to you new development plans this area is either in the open space or designated as agriculture. Treatment of this site needs to be formally (in writing) re-evaluated.

If you have any questions, please call Nancy McMahan 742-7033.

Aloha,



DON HIBBARD, Administrator  
State Historic Preservation Division

NM:amk

c. OEQC  
Dee Crowell, County of Kauai  
LaFrance Kapaka  
Joanne Hiramatsu, Townscape Inc., 900 Fort Street Mall, Suite 800, Honolulu, HI 96813

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

June 1, 1998

Mr. Don Hibbard, Administrator  
State of Hawaii  
Department of Land and Natural Resources  
State Historic Preservation Division  
33 South King Street, 6<sup>th</sup> Floor  
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

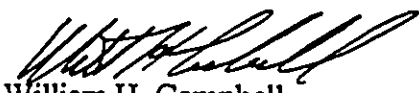
SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Supplemental Environmental Impact Statement Preparation Notice

Thank you for your comments on the Supplemental Environmental Impact Statement (SEIS) Preparation Notice. We concur with the update you provided on the status of the data recovery effort, preservation plan, and other archaeological sites in your letter of May 18, 1998.

It should be noted that none of the archaeological sites that were found on the Kukui'ula project site are in the vicinity of the proposed Resort. However, if subsurface archaeological resources are uncovered during construction, work will stop and your office will be consulted.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,

  
William H. Campbell  
Executive Vice President and Manager

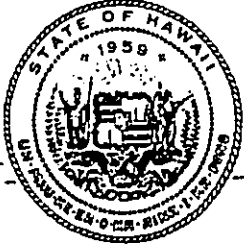


## **SECTION 14 – DSEIS COMMENTS RECEIVED**

The following is a list of agencies, organizations and individuals that commented on the Draft SEIS. The list is in the order it was received.

1. State of Hawaii, Department of Business, Economic Development and Tourism, Office of Planning, 6/17/98
2. County of Kauai, Department of Public Works, 6/18/98
3. State of Hawaii, Land Use Commission, 6/24/98
4. State of Hawaii, Department of Defense, 6/24/98
5. Department of the Army, U.S. Army Engineer District, 6/26/98, 7/27/98
6. State of Hawaii, Department of Hawaiian Home Lands, 6/29/98
7. County of Kauai, Department of Water, 7/10/98
8. State of Hawaii, Department of Accounting and General Services, 7/15/98
9. State of Hawaii, Office of Hawaiian Affairs, 7/22/98
10. State of Hawaii, Department of Land and Natural Resources, Land Division, 7/24/98
11. State of Hawaii, Department of Land and Natural Resources, Historic Preservation Division, 7/24/98
12. State Department of Business, Economic Development and Tourism, Energy, Resources and Technology Division, 7/25/98
13. State Department of Land and Natural Resources, Commission on Water Resource Management, 7/27/98
14. County of Kauai, Planning Department, 7/28/98
15. Ms. Patricia Egger, 8/4/98
16. Ms. Mary Rahilly, 8/5/98
17. Mr. Steve Hashi, 8/5/98
18. Koloa Community Association, 8/5/98
19. State of Hawaii, Office of Environmental Quality Control, 8/5/98
20. State of Hawaii, Department of Health, 8/5/98
21. Mr. Stanley Erickson, 8/6/98

22. Ms. Betsy Toulon, 8/6/98
23. Gloria's Spouting Horn Bed & Breakfast, 8/7/98
24. Mr. Steve Tusler, 8/7/98
25. Ms. Eve Tusler, 8/7/98
26. Ms. Donna Arnold, 8/7/98
27. Mr. Dev Arnold, 8/7/98
28. Ms. Cathy Dellinger, 8/7/98
29. Mr. Don Hughes, 8/7/98
30. Mr. Don Donahugh, 8/7/98
31. Ms. Bea Donahugh, 8/7/98
32. Mr. Robert Merkle, 8/7/98
33. Ms. Gloria Merkle, 8/7/98



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

**OFFICE OF PLANNING**

235 South Beretania Street, 6th Flr., Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

BENJAMIN J. CAYETANO  
GOVERNOR  
SEIJI F. NAYA  
DIRECTOR  
BRADLEY J. MOSSMAN  
DEPUTY DIRECTOR  
RICK EGGED  
DIRECTOR, OFFICE OF PLANNING

Tel.: (808) 587-2846  
Fax: (808) 587-2824

Ref. No. P-7505

June 17, 1998

Mr. William H. Campbell  
Kukui'ula Development Company, Ltd.  
P.O. Box 3440  
Honolulu, Hawaii 96801

Dear Mr. Campbell:

Subject: Draft Supplemental Environmental Impact Statement for Kukui'ula Bay  
Resort, Koloa, Kauai

We note your response of June 1, 1998, to our earlier concern about the site's location within the hazard zone for tsunami/storms and stream flooding. We do not have any other comments to provide.

If there are any questions, please contact Howard Fujimoto of our Coastal Zone Management Program at 587-2898.

Sincerely,

Rick Egged  
Director  
Office of Planning

cc: Joanne Hiramatsu, Townscape, Inc.  
Dee Crowell, Planning Department, County of Kauai  
Gary Gill, OEQC  
Seiji F. Naya, DBEDT

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

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August 7, 1998

Mr. Rick Egged, Director  
State of Hawaii  
Department of Business, Economic Development & Tourism  
Office of Planning  
P.O. Box 2359  
Honolulu, Hawaii 96804

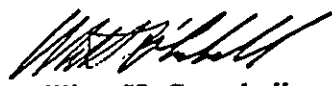
Dear Mr. Egged:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated June 17, 1998 regarding a portion of the site being situated within the hazard zone for tsunami/storms and stream flooding.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager

MAZDANNE W. KUSAKA  
MAYOR



CESAR C. PORTUGAL  
COUNTY ENGINEER  
TELEPHONE 241-6600

RUSSELL SUGANO  
ACTING DEPUTY COUNTY ENGINEER  
TELEPHONE 241-6631

AN EQUAL OPPORTUNITY EMPLOYER  
COUNTY OF KAUAI

DEPARTMENT OF PUBLIC WORKS  
4444 RICE STREET  
MO'IKEHA BUILDING, SUITE 275  
LIHU'E, KAUAI, HAWAII 96766

June 18, 1998

Mr. William Campbell  
Kukui'ula Development Company, Ltd.  
822 Bishop Street  
P.O. Box 3440  
Honolulu, HI 96801

Dear Mr. Campbell:

***SUBJECT: DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT***

We reviewed the Draft Supplemental Environmental Assessment and believe that the roadway and traffic issues discussed at our April 9, 1998 meeting need to be elaborated in the assessment. We believe the DSEIS should include discussions on the change in traffic circulation and capacities as a result of the development of the new Mauka Road and access to Lawai road. Our concern are as follows:

- I. It was our understanding from our April 9, 1998 meeting with A&B and their consultant that the project will now develop the Mauka Roadway to service the resort as well as residential developments. This is contrary to the A&B's 1989 Traffic Plan which proposed to initially develop the Poipu Road Extension which is designated as the Major Project Roadway in the assessment. Our concern is that the Mauka Road will revise the street circulation and capacities that was developed in the A & B's 1989 Traffic Plan as well as the Kauai Long Range Transportation Plan developed by Austin Tsutsumi & Associates.

A&B's 1989 Traffic Plan was developed on a circulatory roadway system that consisted of Poipu Road and it's extension designated as the "Major Project Roadway". At the east, the Koloa-Poipu Bypass Road provided an easterly route that bypasses Koloa Town. At the West, the Westerly Bypass provided a westerly route that also bypasses Koloa Town. We also believe that the Kauai Long Range Transportation Plan was developed on the street circulatory system

Mr. Campbell  
June 18, 1998  
Page (2)

of the Western Bypass, Poipu Road, and the Koloa-Poipu Bypass Road (Eastern Bypass) as proposed by A&B. The County of Kauai has already completed the upgrading of a 1.4 mile section of Poipu Road between the Koloa-Poipu Bypass Road to the limits where Poipu Road will be extended West into the A&B's project in anticipation of traffic from the project.

The revised traffic plan develops the Mauka Road which we feel will change the traffic circulatory system. Motorists will now be more inclined to drive north on Poipu Road and through Koloa Town via Koloa Road and Maluhia Road.

Our concern is that sections of Poipu Road do not meet present day roadway standards. It's narrower pavement and shoulders with pedestrian ways and utilities very close to the pavement does not meet current engineering standards. 15 MPH school zone speed restriction coupled with narrow geometric reduces street operation and capacities. Directing traffic to the intersections at Poipu/Koloa Road and Koloa/Maluhia Road as well as Koloa Road through the town will increase traffic congestion.

We also believe that there maybe a problem to extend the Mauka Road to the East to serve as the future Poipu-Nawiliwili Connector Road. While the Kaua Long Range Transportation Plan proposed an alignment such as the Mauka Road, we believe that the alignment was conceptual in nature. Route studies will need to be developed before an alignment can be selected or determined. Key consideration in the study would be social/economic/environmental factors associated with impacting existing structures and developments. It is our opinion that extending the Mauka Road to the east through tax map key 2-8-13 and 14 may be a problem since the lands are already developed with residential and other land uses, or is zoned for multi-family land use and/or has a great potential to be zoned and developed for more urban uses.

The assessment needs to include a traffic study on the street circulation and capacities that results with the new Mauka Road. The study will need to develop the traffic volumes and capacities that will be generated on Poipu Road along the frontage of Koloa Elementary School and through Koloa Town. The study needs to include project schedules, traffic generation and circulation, street and intersection capacities, engineering standards, and proposed improvements.

Mr. Campbell  
June 18, 1998  
Page (3)

- II. It was also our understanding that the project proposes to use Lawai Road as an accessway for the project. A&B's 1989 Traffic Plan showed no direct access to Lawai Road by any of the development proposed by A&B. Our concern is the geometrics of Lawai Road which does not meet present day roadway standards. Sections of Lawai Road is only an 18 feet wide pavement with 6 feet wide shoulder. Utilities such as poles and hydrants including pedestrian ways are located adjacent to the pavement. The assessment needs to include Lawai Road traffic capacity and improvements to meet engineering standards for safety and operation.

Thank you for the opportunity to offer our comments. Please call Kenneth Kitabayashi at (808) 241-6622 if there are questions.

Very truly yours,

  
CESAR C. PORTUGAL  
County Engineer

KK/llv  
cc: Planning Department  
Townscape, Inc.  
OEQC

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Mr. Cesar C. Portugal  
County Engineer  
Department of Public Works  
County of Kauai  
4444 Rice Street  
Mo'ikeha Building, Suite 275  
Lihue, Kauai, Hawaii 96766

Dear Mr. Portugal:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS). The following is in response to your comments:

- I. At the meeting of April 9, 1998, we discussed the possibility of extending the Mauka Road to service the Resort as an alternative, since a portion of that roadway will be constructed in the near future to service the first 32 residential lots along the Mauka Road alignment. As discussed in the SEIS, extending the Mauka Road to service the Resort is an alternative, as is constructing the Major Project Road to the Resort.

The Major Project Road is intended to ultimately be the primary access to service the Resort. As part of the Major Project Road, the intersection of Lawai and Poipu Beach Roads will be reconfigured to form a cross intersection whereby the Major Project Road will directly lead to Poipu Beach Road. The "Western Bypass" road is also planned to be constructed when the threshold of 1,738 units is reached.

We concur that the Kauai Long-Range Land Transportation Plan (KLLTP) conceptually identifies the Mauka Road as a future Poipu-Nawiliwili Connector Road. The project roadways were planned to incorporate the recommendations in the KLLTP. We concur that route studies will need to be developed before an alignment can be selected or determined.

- II. According to the Traffic Impact Assessment Report (TIAR), Lawai Road has the capacity to accommodate an additional 370 units. Thereafter, other roadways or improvements will be necessary to provide access to the Resort. The use of Lawai Road to access the Resort is one alternative available at this time. Ultimately, however, the Major Project Road will be the primary access to the Resort.

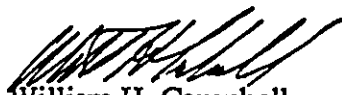


Mr. Cesar C. Portugal  
Department of Public Works  
August 7, 1998  
Page 2

It should be noted that, Lawai Road, from the intersection with Poipu Road to the vicinity of Kukui`ula Bay, was widened by A&B to have a 43-foot right-of-way where Lawai Road abuts the project site. Improvements included partial realignment of Lawai Road, a minimum of 6 feet of additional pavement width, sidewalks, curbs, gutters and a planting strip, which is being maintained by A&B.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager

BENJAMIN J. CAYETANO  
GOVERNOR



ESTHER UEDA  
EXECUTIVE OFFICER

STATE OF HAWAII  
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
LAND USE COMMISSION

P.O. Box 2359  
Honolulu, HI 96804-2359  
Telephone: 808-587-3822  
Fax: 808-587-3827

June 24, 1998

Mr. William H. Campbell  
Kukui'ula Development Company, Inc.  
P. O. Box 3440  
Honolulu, Hawaii 96801

Dear Mr. Campbell:

Subject: Draft Supplemental Environmental Impact Statement  
(DSEIS) for the Kukui'ula Bay Resort, Koloa,  
Kauai, Hawaii, TMKs 2-6-03: por. 1, 40 and 2-6-04:  
por. 38, por. 40

We have reviewed the DSEIS for the subject project and have the following comments:

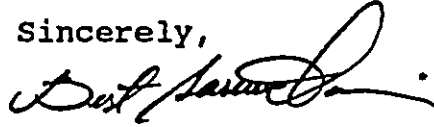
- 1) We suggest that the Final SEIS include a breakdown of the projected \$125 million development cost for each component of the Resort.
- 2) We suggest that the Final SEIS include a map showing the project site in relation to the State land use districts. We note that the original EIS did not include such a map.
- 3) We note that by Supplemental and/or Modified Findings of Fact, Conclusions of Law, and Decision and Order dated June 22, 1998, the Commission approved Petitioner Kukui'ula Development co., Inc.'s, Motion for Order to Amend Findings of Fact, Conclusions of Law, and Decision and Order Dated May 18, 1995, to i) transfer and include that portion of the resort site, consisting of approximately 77 acres, from Increment II to Increment I; ii) modify and delete certain conditions of approval; and iii) release and delete a 10-acre portion of Increment I from the application of the conditions of approval.

We have no further comments to offer at this time. We appreciate the opportunity to comment on the DSEIS.

Mr. William H. Campbell  
June 24, 1998  
Page 2

Should you have any questions, please feel free to call me  
or Bert Saruwatari of our office at 587-3822.

Sincerely,



*for* ESTHER UEDA  
Executive Officer

EU:th

cc: OEQC  
Dee Crowell, County of Kauai Planning Dept.  
/Joanne Hiramatsu, Townscape, Inc.

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Ms. Esther Ueda  
Executive Officer  
Land Use Commission  
P.O. Box 2359  
Honolulu, Hawaii 96804-2359

Dear Ms Ueda:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS). The following is in response to your comments of June 24, 1998.

- 1) The Final SEIS will include the breakdown of the projected \$125 million development cost as follows: a) Hotel, \$36 million; b) Condo/Time Share, \$80 million; c) Resort Commercial, \$6 million; and d) Lagoon Wetland, \$3 million.
- 2) A map of the project in relation to the State land use districts will be included in the SEIS.
- 3) We acknowledge that the Commission by Supplement and/or Modified Findings of Fact, Conclusions of Law, and Decision and Order dated June 22, 1998 approved the Petitioner Kukui'ula Development Co., Inc.'s, Motion for Order to Amend Findings of Fact, Conclusions of Law, and Decision and Order dated May 18, 1995.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,

  
William H. Campbell  
Executive Vice President and Manager

BENJAMIN J. CAYETANO  
GOVERNOR

MAJOR GENERAL EDWARD V. RICHARDSON  
DIRECTOR OF CIVIL DEFENSE

ROY C. PRICE, SR.  
VICE DIRECTOR OF CIVIL DEFENSE



PHONE (808) 733-4300  
FAX (808) 733-4287

STATE OF HAWAII  
DEPARTMENT OF DEFENSE  
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE  
3948 DIAMOND HEAD ROAD  
HONOLULU, HAWAII 96816-4495

June 24, 1998

NB [Signature] JY DYY PWH BEF  
LGS [Signature] SMK  
BS [Signature] MKV  
DY JUN 26 1998 JX  
MM TSY  
RKS CC LNS VP. DMS WDP

TO: Kukuiula Development Company, Ltd.  
822 Bishop Street  
P. O. Box 3440  
Honolulu, Hawaii 96801

ATTENTION: Mr. William H. Campbell

FROM: Roy C. Price, Sr. [Signature]  
Vice Director of Civil Defense

SUBJECT: DRAFT SUPPLEMENTAL ENVIRONMENTAL STATEMENT,  
KUKUIULA BAY RESORT, KOLOA, KAUAI, HAWAII

We appreciate this opportunity to comment on the Kukuiula Development Company, Limited, Kukuiula Bay Resort, Lawai, Koloa, Kauai, Hawaii, TMK: 2-6-03: por. 1, 40, and 2-6-04; por. 38, por. 40.

State Civil Defense (SCD) presently has a siren at the intersection of Lawai Road and Alania Road. This siren is a solar powered 115 dB with an omnidirectional speaker array.

We concur with the comments submitted by the State Office of Planning (letter dated May 5, 1998) that appropriate hazard mitigation measures be taken to minimize damage from major storms and tsunamis. The proposed resort is located in the 100-year floodplain and tsunami evacuation zone.

Our SCD planners and technicians are available to discuss any concerns your staff or the developer's staff may have. Please contact Mr. Norman Ogasawara of my staff at (808) 733-4300.

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Mr. Roy C. Price, Sr.  
Vice Director of Civil Defense  
State of Hawaii  
Department of Defense  
Office of the Director of Civil Defense  
3949 Diamond Head Road  
Honolulu, Hawaii 96816-4495

Dear Mr. Price:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated June 24, 1998. Information regarding the siren at the intersection of Lawai Road and Alania Road is appreciated.

As indicated in our response to the State Office of Planning (letter dated June 1, 1998), the overall master plan for the project was revised to reduce impacts on planned residential areas that were inundated by storm surge caused by Hurricane Iniki. A portion of the golf course was moved to the makai side of the site and a 100-foot building set back from Lawai Road has been established.

Buildings within the Resort will be constructed a minimum of 15 feet above mean sea level, which is the approximate elevation of storm water surge from Hurricane Iniki. Structures will also be constructed to post-Iniki building codes that were adopted by the County of Kauai.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager



REPLY TO  
ATTENTION OF

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

June 26, 1998

NB W/C JY D/F FWH BEF  
LGS ~~SMK~~  
BS ~~MKV~~  
DY JUN 29 1998 JX  
MM TSY  
SKM  
R/S CC LNS VR DMS WDP

Civil Works Branch

Mr. William H. Campbell  
Kukuiula Development Company  
822 Bishop Street  
Honolulu, Hawaii 96801

Dear Mr. Campbell:

Thank you for the opportunity to review and comment on the Draft Supplemental Environmental Impact Statement (DSEIS) for the Kukuiula Bay Resort Project, Kauai (TMK 2-6-3: por. 1, 40 and 2-6-4: por. 38 and 40). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. A site visit was conducted on June 23, 1998, to determine existing conditions at the drainage basin. Please contact Ms. Lolly Silva of our Regulatory Section at 438-9258 for further information and refer to file number 970000099.

b. The flood hazard information provided on pages 5-3 and 6-13 of the DSEIS is correct.

Sincerely,

Paul Mizue, P.E.  
Chief, Civil Works Branch

Copies Furnished:

Ms. Dee M. Crowell, Director  
County of Kauai  
Planning Department  
4444 Rice Street, Suite 473  
Kauai, Hawaii 96766

Ms. Joanne Hiramatsu  
Townscape Incorporated  
900 Fort Street Mall, Suite 800  
Honolulu, Hawaii 96813



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

July 27, 1998

REPLY TO  
ATTENTION OF

Operations Branch

NB WHC JY DYY PWH BEF  
LGS SMK  
BS MKV  
DY JUL 31 1998 JX  
MM TSY  
SKM  
RKS CC LNS VR DMS WDP

Mr. William H. Campbell  
Kukuiula Development Company  
822 Bishop Street  
Honolulu, Hawaii 96801


Dear Mr. Campbell:

This letter is a follow-up to the Corps' Civil Works Branch letter, dated June 26, 1998 regarding the Kukuiula Bay Resort Project located in Kauai, Hawaii. Information contained in paragraph a. of the subject letter referred to a site visit being conducted on June 23, 1998. A site visit was not performed, however, my staff will be contacting you shortly regarding a future site visit to determine if a wetland was created at the drainage basin location.

File Number 970000099 is assigned to this project. Please refer to this number in any future correspondence with our office.

Should you have any questions or need additional information, you may call Ms. Lolly Silva of my staff at (808) 438-9258, extension 17.

Sincerely,

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



**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Mr. Paul Mizue, P.E.  
Chief, Civil Works Branch  
Department of the Army  
U.S. Army Engineer District, Honolulu  
Fort Shafter, Hawaii 96858-5440

Attention: Mr. George P. Young, P.E.  
Chief, Operations Branch

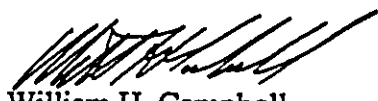
Dear Mr. Mizue:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
File Number 97000099  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) of June 26, 1998 and July 27, 1998. We acknowledge that a site visit to determine if a wetland was created at the drainage basin location will be conducted in the future by your office.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager

BENJAMIN J. CAYETANO  
GOVERNOR  
STATE OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS  
P. O. BOX 1879  
HONOLULU, HAWAII 96805

cc  
NB WAC JY DYY EWH BEF  
LGS KALI WATSON  
BS CHAIRMAN  
DY JUL 01 1998 HAWAIIAN HOME LANDS COMMISSION  
MM JOE M. K. M. YAMAGUCHI  
DEPUTY TO THE CHAIRMAN

SKM  
RKS CC LNS VR DMS WDI

June 29, 1998

Mr. William H. Campbell  
Kukuiula Development Company, Ltd.  
P.O. Box 3440  
Honolulu, Hawaii 96801

Dear Mr. Campbell:

Subject: Kukuiula Bay Resort, Draft Supplemental Environmental  
Impact Statement, TMK 2-6-3:1 por. & 40, 2-6-4:38 por.  
& 40 por., Kaloa, Kauai, Dated June, 1998

Thank you for the opportunity to review the subject document.

The Department of Hawaiian Home Lands (DHHL) has substantial property interests in Hanapepe, Waimea and Kekaha. Many of DHHL's existing and foreseeable developments, located in close proximity to the proposed development, uses groundwater drawn from the same aquifer system as the proposed development.

The estimated water demand of the proposed development is 3.1 mgd. The existing potable water system (source, storage and transmission) does not have the capacity to meet the needs of the proposed development.

DHHL is concerned that the proposed project may adversely affect the supply of water for current and foreseeable development and use of Hawaiian Home Lands. Thus, DHHL is interested in knowing to what extent the proposed project will affect the groundwater resources in the area.

The subject document states that KDC recently developed the Omao well to service the demands of the proposed project. The capacity of this well was not identified in the subject document. Instead, a pumping rate measured in gallons per minute (gpm) was provided. This unit of measure does not provide the information needed to assess the capacity of the

Mr. William H. Campbell  
June 29, 1998  
Page 2

Omao source and the impact pumping will have upon the Koloa aquifer.

Furthermore, the subject document does not identify how the Omao well and the proposed construction of three additional wells will impact the water quality of 1) the Koloa aquifer system, 2) adjacent aquifer systems and 3) related streams and/or near-shore fisheries.

If you have any questions, please call Daniel Ornellas at 586-3837.

Aloha,

*Daniel Ornellas*  
for KALI WATSON, Chairman  
Hawaiian Homes Commission

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Mr. Kali Watson, Chairman  
Hawaiian Homes Commission  
State of Hawaii  
Department of Hawaiian Home Lands  
P.O. Box 1879  
Honolulu, Hawaii 96805

Dear Mr. Watson:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated June 29, 1998.

A Water Master Plan was prepared for the overall Kukui'ula project and was approved by the County of Kauai, Department of Water. Subsequently, the Omao well was drilled and the pumping capacity of the well tested at 1,050 gallons per minute (gpm), or 1.008 million gallons per day (mgd). Development and use of this well will be in compliance with the standards of the State Water Commission and the Kauai Department of Water.

Kukui'ula Development Company is working with the Kauai Department of Water to provide public water facilities. The Water Master Plan will be revised to reflect this change from a private system to a public system.

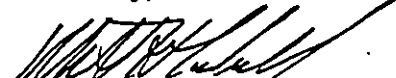
Based on studies performed in conjunction with the Water Master Plan and the development of the well, the well is located within the Koloa Aquifer System that has an abundance of groundwater controlled by a complex subsurface geology. High level water is found in the Koloa formation and basal water occurs below the Koloa formation in the Napali formation.

The Koloa formation covers the coastal areas, which prevents basal water in the Napali formation from entering the ocean. High level and perched water in the Koloa formation, however, enters the sea along the coastline and seeps into gullies and streams. The Omao well has been drilled to sufficient depth to draw basal water from the Napali formation. Thus, adverse impacts on nearshore fisheries or streams are not anticipated.

The Napali basal aquifer is recharged mainly by rainfall in the interior highlands of the island. Existing wells in the area indicate that the wells are very productive and show superior characteristics.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell

Executive Vice President and Manager

822 Bishop Street • P.O. Box 3440 • Honolulu, HI 96801-3440 • Telephone (808) 525-6611 • Fax (808) 525-8447

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# DEPARTMENT OF WATER

County of Kauai

*"Water has no Substitute -- Conserve It!"*

July 10, 1998

Mr. William H. Campbell  
Kukui`ula Development Company, Ltd.  
P. O. Box 3440  
Honolulu, HI 96801

Dear Mr. Campbell:

RE: Draft Supplemental Environmental Statement (DSEIS) for Kukui`ula Bay Resort,  
TMK:2-6-03:por. 1 and 40 & 2-6-04:por. 38 and por. 40, Koloa, Kauai

We have reviewed the subject DSEIS, and have the following comments to offer:

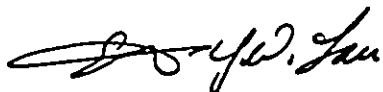
The subject development is part of the Kukui`ula Planned Community Master Plan. A Water Master Plan is required for this Planned Community. The Department of Water must approve all applicable water facilities.

The Department would like further information on where the effluent from the WWTP will be disposed. It was stated in the report that it would be disposed of at a designated site located above the WWTP. Page 5-9, Section A. "Impacts" reports that the WWTP's effluent may be used to irrigate the golf course and other areas. It is also stated that with proper management, the treated effluent should not adversely impact the ground water. Please elaborate on that statement. Is there a change that the ground water may be adversely impacted if proper management is not used?

All disposal systems and/or methods used by the WWTP must meet the satisfaction of the Department of Health and the Department of Water.

Thank you for your attention to this matter. If you have any questions, please call Keith Aoki of my staff at (808) 245-5418.

Sincerely,



Ernest Y. W. Lau  
Manager and Chief Engineer

KA:ls  
C:\lskukuiula.doc

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Mr. Ernest Y. W. Lau  
Manager and Chief Engineer  
Department of Water  
County of Kauai  
4398 Pua Loke Street  
Lihue, Kauai, Hawaii 96766

Dear Mr. Lau:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated July 10, 1998. A Water Master Plan was prepared for the overall Kukui'ula project. The Kukui'ula Development Company plans to work with the Department of Water to provide public water facilities for the overall Kukui'ula project, rather than the private water system originally contemplated. All applicable potable water facilities will be developed in accordance with the requirements of the Department of Water and State Water Commission.

The Wastewater Treatment Plant (WWTP) currently does not produce effluent requiring disposal due to low flows presently being treated. However, as the volume of wastewater increases, treated effluent will be used for irrigation. Approximately 74 acres within and around the WWTP are designated to be irrigated with effluent in accordance with the "Effluent Disposal Plan" that was prepared and approved by the State Department of Health.

The WWTP will provide secondary level treatment and produce R-2 quality effluent. Ultimately, the effluent will be used to irrigate the golf course, drainage features and landscaping through a drip irrigation system in compliance with the Department of Health reuse guidelines and in accordance with applicable Department of Water requirements. The effluent will be chlorinated for disinfection prior to irrigation.

In a WWTP upset condition, injection wells will be used to dispose of the effluent. These upset conditions are generally monitored at the WWTP. The project is located below the underground injection control (UIC) line. Therefore, injection wells are permitted.

Under normal conditions, the effluent will be directed to the irrigation system. Nutrients in the effluent are expected to be absorbed by the plants and the soil prior to percolation. Thus, impacts on the groundwater are not anticipated.

Mr. Ernest Y. W. Lau  
August 7, 1998  
Page 2

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager

(P) 1441.8

JUL 15 1998

Mr. William H. Campbell  
Executive Vice President and Manager  
Kukuiula Development Company, Ltd.  
822 Bishop Street  
P. O. Box 3440  
Honolulu, Hawaii 96801

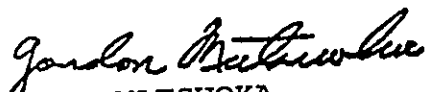
Dear Mr. Campbell:

Subject: Kukuiula Bay Resort, Koloa, Kauai  
Draft Supplemental Environmental Impact Statement

Thank you for the opportunity to review the subject document. The proposed project will not impact any Department of Accounting and General Services' (DAGS) projects or existing facilities at this time. However, DAGS recommends that the 12-acre site for a new elementary school be shown on the current land use plan. The inclusion of the future elementary school on the current land use plan will assure its optimal placement in regards to access by the general population of the subject community and access to the community's archeological park, natural preserve and wetland educational resources. Please coordinate any school planning issues with the Department of Education.

If there are any questions, please have your staff contact Mr. Jimmy Kurata of the Planning Branch at 586-0492.

Sincerely,

  
GORDON MATSUOKA  
Public Works Administrator

JK:jtk  
c: OEQC  
County of Kauai, Planning Dept.  
Office of Planning  
✓Townscape, Inc.



**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Mr. Gordon Matsuoka  
Public Works Administrator  
State of Hawaii  
Department of Accounting and General Services  
1151 Punchbowl Street, Rm. 426  
Honolulu, Hawaii 96813

Dear Mr. Matsuoka:

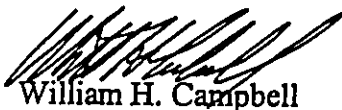
SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated July 15, 1998. We acknowledge your comment that the subject project will not impact any Department of Accounting and General Services projects or existing facilities at this time.

As part of the Kukui'ula Master Plan, a 7-acre site has already been designated for expansion of Koloa School. We expect to receive notification from the State for the transfer of this site at the appropriate time. When your office is prepared to pursue the development of the second school, we expect to work with your office, the Department of Education, and other appropriate government agencies to locate the other 12-acre school site.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager



STATE OF HAWAII  
 OFFICE OF HAWAIIAN AFFAIRS  
 711 KAPI'OLANI BOULEVARD, SUITE 500  
 HONOLULU, HAWAII 96813-5249  
 PHONE (808) 594-1888  
 FAX (808) 594-1865

July 22, 1998

Mr. William H. Campbell  
 Kukui'ula Development Company, Ltd.  
 822 Bishop Street  
 P.O. Box 3440  
 Honolulu, Hawaii 96801

~~INB~~ ~~WHC~~ ~~JY~~ ~~DYY~~ PWH BEF  
 LGS ~~SMK~~  
 BS MKV  
 DY JUL 27 1998 JX  
 MM TSY  
 SKM  
~~PKS~~ CC LNS VP. DMS WDP

Re: Kukui'ula Bay Resort, Draft Supplemental Environmental Impact Statement (DSEIS),  
 Koloa, Kaua'i, TMK(s) (4) 2-6-02 por. 1,40 and 2-6-04 por. 38, por.40.

Dear Mr. Campbell:

Thank you for the opportunity to review the draft supplemental Environmental Impact Statement for the Kukui'ula Bay Resort project. The Office of Hawaiian Affairs (OHA) has the following concerns.

First, the DSEIS and the 1989 Environmental Impact Statement fail to comment on traditional Native Hawaiian gathering rights which may exist within the project area. We urge you to make every effort to ascertain early in the review and permitting process, whether such rights exist. The results should be included in the DSEIS along with a plan for accommodating those rights.

Second we are concerned with the loss of prime agricultural lands for the resort project. The DSEIS contends that the loss of prime agricultural lands will not be hardship since there currently exists an excess of unused agricultural land. In the short term, it may be reasonable to characterize the current situation as excess agricultural lands. However, this situation exists in a turned down economy. The DSEIS fails to discuss the long term effects and planning issues which will result from of the loss of prime agricultural land to resort and residential use.

Third, the DSEIS states that a previously planned marina will not be built and that in its place a wetland will be created. This more ecologically sensitive approach to area planning should be commended. However, Appendix C "Kukui'ula Bay Village, Updated Issues Analysis in section 1.2 states that "[f]urther improvements are planned for the harbor, possibly including two boat

Mr. William H. Campbell  
Kukui'ula Development Company, Ltd.  
July 22, 1998  
Page two

launching ramps, parking for boats and automobiles and support facilities, such as a supplies store and a restaurant." The body of the DSEIS is silent on these improvements. Whether or not these improvements are anticipated in this portion of the planned community there should be a frank discussion of what the improvements are anticipated and how they will affect the environment.

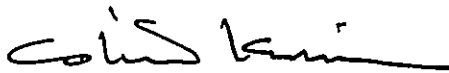
Finally, Figure 3-7 Existing and Future View of the Resort Site is inadequate. The building views sketched over the photograph are almost impossible to see and are certainly not indicative of the changes in view plane which can be expected with this project.

Should you have any questions concerning our comments on this Drafted Supplemental Environmental Impact Statement, please contact Colin Kippen, Land and Natural Resources Division Officer or Lynn Lee, EIS Planner, at 594-1936.

Sincerely,



Randall Ogata  
Administrator



Colin Kippen  
Land and Natural Resources Division Officer

cc: Board of Trustees  
Office of Environmental Quality Control  
Planning Department, County of Kaua'i

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Mr. Randall Ogata, Administrator  
State of Hawaii  
Office of Hawaiian Affairs  
711 Kapiolani Boulevard, Suite 500  
Honolulu, Hawaii 96813

Attention: Mr. Colin Kippen  
Land and Natural Resources Division Officer

Dear Mr. Ogata:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS). The following is a response to your comments in your letter of July 22, 1998:

1. Historical research of the property indicates that the bulk of the low-lying portions of the Koloa lands were irrigated fields in prehistoric times. Early historical accounts describe an agricultural complex of taro, yams, sweet potato and sugarcane. Information on traditional farming in the area during the mid-1800s includes references to cattle and commercial sugarcane growing, indicating that market-oriented agriculture was beginning to dominate.

The Resort area is a portion of the lands that had been under commercial sugarcane cultivation from the late 1890s until the recent closure of McBryde Sugar Co. in 1996. The site contains no unique topographical features, and all identified archaeological sites are located, outside of the Resort area.

Based in part on the history of the area, the absence of natural and cultural resources at the Resort site and the current use of a portion of the site as a drainage basin, the impact of the development of the site on traditional practices appears minimal.

2. According to statistics from the State Department of Agriculture, the island of Kauai, in 1996, had total agricultural acreage of 214,000 acres with only 43,000 acres under cultivation. This points to a large supply of land not in active agricultural production. The development of the project will result in the loss of approximately 30 acres of land currently used for papaya and seed corn production. The removal of these 30 acres will not have a significant impact on the agricultural industry or the availability of agricultural lands on Kauai.

A&B-Hawaii (A&B), the parent company of Kukui'ula Development Company, has recommitted former cane lands to diversified agriculture. Lands that were previously planted in sugarcane by McBryde Sugar Company (subsidiary to A&B) now contain diversified crops of coffee, vegetables and fruits. A&B also developed a 277-acre

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Mr. Randall Ogata  
Office of Hawaiian Affairs  
August 7, 1998  
Page 2

agricultural park just north of the Resort for the cultivation of papaya, bananas and vegetables. Conversion of agricultural lands to urban use is carefully reviewed by A&B and their subsidiaries, including Kauai Coffee Company, to ensure viability and productivity of their lands on Kauai and elsewhere in the State of Hawaii.

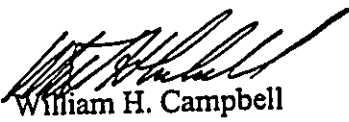
3. The marina is no longer planned for this project. The lagoon/wetland has replaced the marina.

Harbor related improvements (boat launch ramp, parking, etc.) mentioned in the SEIS refer to the possible development of future harbor facilities on private lands at Kukui'ula Harbor. These lands are currently used for residential purposes and located outside of the project area. If and when these lands are proposed for such harbor related uses, the applicable government permits and approvals will be sought.

4. As stated in the SEIS, the Resort is planned as a low-density development. Given the total acreage of the Resort (77-acres) and a unit count of 700 units (including lock-outs), the overall density of the site is about 9 units per acre. Units are planned in 2 to 4 story buildings. Additionally, the 100-foot building setback established along Lawai Road combined with the 20-acre lagoon provides a spatial separation between the Resort buildings. Landscaping within the Resort will further screen the buildings. The photomontage provided in the SEIS is intended to reflect the visual appearance of the Resort under these circumstances.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
P.O. BOX 621  
HONOLULU, HAWAII 96809

AQUACULTURE DEVELOPMENT  
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CONVEYANCES  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
LAND DIVISION  
STATE PARKS  
WATER RESOURCE MANAGEMENT

**JUL 24 1998**

Ref.:LD-PEM

LD Ref.:KUKUIULA.COM

Mr. William H. Campbell  
Kukui'ula Development Company, Ltd.  
P. O. Box 3440  
Honolulu, Hawaii 96801

Dear Mr. Campbell:

Subject: Request for Comments - Draft Supplemental Environmental Impact Statement,  
Kukui'ula Bay Resort, Koloa, Kauai, Tax Map Key: 2-6-03:Por. 1, 40 &  
2-6-04:Por. 48 & 40

We have reviewed the subject Draft Supplemental Environmental Impact Statement for the subject project and would like to offer the following comments:

Land Division - Engineering Branch

Areas of the proposed project site abutting Lawai Beach Road, according to FEMA Community Panel Map No. 150002 0191 D, is located in Zone X (shaded). This is an area subject to either one of the following Conditions:

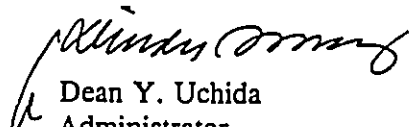
1. Areas of 500-year flood;
2. Areas of 100-year flood with average depths less than one (1) foot or with drainage area less than one square mile;
3. Areas protected by levees from 100-year flood.

The remainder of the project site is located in Zone X (no shading), an area determined to be outside the 500-year flood plain.

Mr. William H. Campbell  
Page 2

Thank you for the opportunity to review the Draft Supplemental Environmental Impact Statement for the subject project, we have no further comments to offer at this time. Should you have any questions, please contact Patti Miyashiro of our Land Division at 587-0430.

Very truly yours,

  
Dean Y. Uchida  
Administrator

c: Kauai Land Board Member  
Kauai District Land Office  
Ld Div-Engineering Branch  
COK/Plng Dept.-Dee M. Crowell, Director  
✓Townescape, Inc.-Joanne Hiramatsu

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

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August 7, 1998

Mr. Dean Uchida, Administrator  
State of Hawaii  
Department of Land and Natural Resources  
Land Division  
P.O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Uchida:

SUBJECT: Kukui`ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS). We concur with the information you provided on the FEMA flood zones in your letter of July 24, 1998

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager



BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII

COPY



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
33 SOUTH KING STREET, 6TH FLOOR  
HONOLULU, HAWAII 96813

July 24, 1998

Mr. Dee Crowell, Director  
County of Kauai/Planning Department  
4444 Rice Street, Suite 473  
Building "A"  
Lihue, Kauai, Hawaii 96766

Dear Mr. Crowell:

SUBJECT: Historic Preservation; Review -- Draft Supplement EIS Kukui'ula Bay Resort  
TMK: 2-6-03: por. 1, 40 and 2-6-04: 38 and por. 40  
Koloa, Kaua'i

Several significant historic sites existed in the area (heiau, rock walls, habitation sites and lo'i). In 1988, an archaeological survey was conducted (Hammatt, et.al. 1988) which identified 58 significant historic sites.

Seventeen significant historic sites were in the Phase I project area that needed to be mitigated by data recovery work. In 1992-93 (Hammatt, et.al) completed the data recovery fieldwork for Phase I. The final report for this work has recently been submitted and our office is currently reviewing the report. Recently, Phase II data recovery fieldwork was conducted. An archaeological data recovery report has yet to be received by our Division on this Phase II work.

Several additional sites were to be preserved in the whole project area. A draft preservation plan has been submitted to our Division. It is our understanding that once we approve the data recovery reports for Phases I and II, the preservation plan and the interpretive text will be finalized.

In addition, during the past year our staff archaeologist and an archaeologist from the community inspected CSH 4 (State Site No. 50-30-10-1904) listed as a rock pile. Upon further inspection, we believe that beneath the cane field rocks is a two terraced platform, which appears to align with the other heiau on this ridge. We believe that it should be preserved. According to the new development plans this area is either in the open space or designated as agriculture.

Our only other concern is in the marina area. Recent construction near the shoreline of the Kukui'ula Harbor has uncovered human skeletal remains believed to be Hawaiian. We would recommend that the initial ground disturbance in this area be monitored by a qualified

MICHAEL D. WILSON, CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY  
GILBERT COLOMA-AGARAN

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CONSERVATION AND

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CONVEYANCES

FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION

DIVISION  
LAND MANAGEMENT

STATE PARKS

WATER AND LAND DEVELOPMENT

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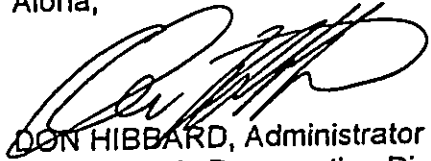
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D. Crowell  
Page 2

archaeologist, to cover the possibility of inadvertent burial finds. If it is determined that the potential for finding human remains is very slight, the archaeological monitor can be on-call, rather than be present every day at the project.

If you have any questions, please call Nancy McMahon 742-7033.

Aloha,



DON HIBBARD, Administrator  
State Historic Preservation Division

NM:amk

c. OEQC  
Townscapes, Inc. 900 Fort Street Mall, suite 800, Honolulu, HI 96813

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

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August 7, 1998

Mr. Don Hibbard, Administrator  
State of Hawaii  
Department of Land and Natural Resources  
State Historic Preservation Division  
33 South King Street, 6<sup>th</sup> Floor  
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

SUBJECT: Kukui`ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Supplemental Environmental Impact Statement (SEIS) Preparation Notice. We concur with the information you provided on the status of archaeological work performed to date in your letter of July 24, 1998

None of the archaeological sites that were found on the Kukui`ula project site are in the vicinity of the proposed Resort, including Site CSH 4 (State Site No. 50-30-10-1904). However, at the appropriate time, further studies of this site will be conducted to determine the appropriate course of action in consultation with your office.

The Resort does not have frontage on the shoreline and construction activity is not anticipated near the shoreline. However, should human remains or other archaeological resources be uncovered during construction, work will stop and your office will be consulted.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell

Executive Vice President and Manager



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

**ENERGY, RESOURCES, AND TECHNOLOGY DIVISION**  
235 South Beretania St., 5th Flr., Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

**BENJAMIN J. CAYETANO**  
GOVERNOR  
**SEIJI F. NAYA, Ph.D.**  
DIRECTOR  
**BRADLEY J. MOSSMAN**  
DEPUTY DIRECTOR  
**RICK EGGED**  
DIRECTOR, OFFICE OF PLANNING

Tel.: (808) 587-3807  
Fax: (808) 586-2536

June 25, 1998

Mr. William H. Campbell  
Kukui'ula Development Company, Ltd.  
822 Bishop St.  
P.O. Box 3440  
Honolulu, Hawaii 96801

Dear Mr. Campbell:

Subject: Kukui'ula Bay Resort  
Draft Supplemental Environmental Statement (DSEIS)

Thank you for the opportunity to comment on the DSEIS for the Kukui'ula Bay Resort. We understand that the resort will consist of a 200-room hotel, two timeshare condominiums, a commercial site, a lagoon, and supporting landscaping, resort amenities, roadways, and infrastructure. Our comments are addressed to two areas: (1) State energy conservation goals, and (2) recycling and recycled-content products.

- (1) Energy conservation goals. As you are aware, Draft Supplemental Environmental Statements should comply with the requirements found in State laws for evaluating any energy impacts that the project will have. The mandate for such an evaluation is found in Chapter 344, HRS ("State Environmental Policy") and Chapter 226 ("Hawaii State Planning Act"). In particular, we would like to call to your attention HRS 226 18(c)(4) which includes a State objective of promoting all cost-effective conservation through adoption of energy-efficient practices and technologies.

You have mentioned some possible energy conservation measures in sections 1.7.20, 6.2.1, and 10.13. We would like to have the developer address specifically how it plans to adopt energy efficient practices and technologies in this project. The developer should contact Kauai Electric to obtain information on rebates and incentives that are available for energy conservation measures under its Demand-side Management program. In addition, we would like to remind you of the requirements of the Kauai Energy Code. We are also enclosing a brochure on

Mr. William H. Campbell  
Page 2  
June 25, 1998

insulation for your information. Although it addresses residential methods, it may have some application to the resort.

(2) Recycling and recycled-content products. The following are generic recommendations from the Clean Hawaii Center:

- Develop a job-site recycling plan for the construction phase of the project and recycle as much construction and demolition waste as possible;
- Incorporate provisions for recycling into the built project – a collection system and space for bins for recyclables;
- Specify and use products with recycled-content such as: steel, concrete aggregate fill, drywall, carpet and glass tile; and
- Specify and use locally-produced products such as plastic lumber, hydromulch, soil amendment, and glass tile.

We are also enclosing some brochures on recycling and ask that you pass them on to the developer. Please contact Ms. Gail Suzuki-Jones at the Clean Hawaii Center, telephone: 587-3802, for additional information on recycling.

Very truly yours,



Maurice H. Kaya  
Energy, Resources, and Technology  
Program Administrator

Enclosures

c: Dee M. Crowell, Planning Department, County of Kauai  
Joanne Hiramatsu, Townscape, Inc.  
OEQC

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

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August 7, 1998

Mr. Maurice H. Kaya  
Energy, Resources, and Technology Program Administrator  
State of Hawaii  
Department of Business, Economic Development & Tourism  
Energy, Resources, and Technology Division  
P.O. Box 2359  
Honolulu, Hawaii 96804

Dear Mr. Kaya:


SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated June 25, 1998 regarding energy conservation and recycling.

The developer of the project will be encouraged to adopt energy efficient practices and technologies. Information on rebates and incentives available for energy conservation measures will be sought from Kauai Electric prior to development. Recycling programs will also be encouraged during and after construction, as discussed in section 5.5(B) of the Draft SEIS. We acknowledge the generic recycling recommendations outlined in your letter.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell

Executive Vice President and Manager



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
P.O. BOX 621  
HONOLULU, HAWAII 96809

AQUACULTURE DEVELOPMENT  
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FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
LAND DIVISION  
STATE PARKS  
WATER RESOURCE MANAGEMENT

JUL 27 1998

Ref.:LD-PEM

LD Ref.:KUKUIULA.COM

Mr. William H. Campbell  
Kukui'ula Development Company, Ltd.  
P. O. Box 3440  
Honolulu, Hawaii 96801

Dear Mr. Campbell:

Subject: Request for Comments - Draft Supplemental Environmental Impact Statement, Kukui'ula Bay Resort, Koloa, Kauai, Tax Map Key: 2-6-03:Por. 1, 40 & 2-6-04:Por. 48 & 40

This is a follow-up to our letter dated July 22, 1998 regarding the subject request. At this time we would like to offer the following additional comments:

Commission on Water Resource Management

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.

We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.


A pump installation permit is required if Well No. 5428-01 is to be used for water supply. The pump test data are inadequate to support continuous withdrawal at 1,050 gpm.

We recommend that the report disclose the source of non-potable water that is proposed for use to meet the lagoon and irrigation water requirements.

Mr. William H. Campbell  
Page 2

Thank you for the opportunity to provide additional comments for the Draft Supplemental Environmental Impact Statement for the subject project, we have no further comments to offer at this time. Should you have any questions, please contact Patti Miyashiro of our Land Division at 587-0430.

Very truly yours,

  
Dean Y. Uchida  
Administrator

c: Kauai Land Board Member  
Kauai District Land Office  
CWRM  
COK/Plng Dept.-Dee M. Crowell, Director  
Townscape, Inc.-Joanne Hiramatsu



**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

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August 7, 1998

Mr. Dean Uchida, Administrator  
State of Hawaii  
Department of Land and Natural Resources  
Land Division  
P.O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Uchida:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated July 27, 1998

As stated in the SEIS, to conserve potable water, irrigation of the golf course, drainage swales, and landscaping will utilize R-2 effluent from the project's wastewater treatment plant. Non-potable irrigation water from an existing reservoir north of the site will be used to replenish water lost in the lagoon through seepage and evapotranspiration. The lagoon will also be excavated to the groundwater level, which is several feet lower than the current elevation of the drainage basin.

We acknowledge that Well No. 5428-01 will require a pump installation permit. Currently, the well is expected to yield approximately 1 mgd at a withdrawal rate of 1,050 gpm for approximately 16 hours a day. Coordination with the County's Water Use and Development Plan will be undertaken.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,

  
William H. Campbell  
Executive Vice President and Manager

TOWN-PLANNING

MARYANNE W. KUSAKA  
MAYOR



PLANNING DEPARTMENT

DEE M. CROWELL  
PLANNING DIRECTOR  
IAN K. COSTA  
DEPUTY PLANNING DIRECTOR  
TELEPHONE (808) 241-6677  
FAX (808) 241-6699

July 28, 1998

Mr. William Campbell  
Kukuiula Development Co., Ltd.  
P.O. Box 3440  
Honolulu, HI 96801

SUBJECT: Supplemental Environmental Impact Statement (SEIS)  
Kukuiula Bay Resorts

The following are our comments on the SEIS:

- a. Relative to traffic circulation, we feel that Poipu Road should be the road that eventually serves as the "south shore by-pass." As proposed, Poipu Road ends at Lawai Road near the harbor. Poipu Road is a major roadway for the area and should continue as such throughout the project and be available to connect further west.

As shown on the proposed plans, the "mauka road" is intended to serve as the "south shore by-pass." This concept places a major intersection closer to Koloa town and could have problems extending east of Poipu Road. We recommend that this matter be studied with the Planning and Public Works Departments at the time of General Plan and Zoning Amendments.

- b. Because resort development will be added into the density for Phase I, traffic volumes are anticipated to increase for the Phase I portion of the project. Conditions related to traffic imposed for current Phase I zoning were based on development exclusive of resort use. Traffic impacts for Phase I will have to be re-examined to include the resort element. Conditions from the Phase I zoning amendment will have to be modified to account for the resort element.
- c. The timing of the construction of the westerly by-pass road will be a major concern with the advent of the resort component in Phase I. In concept, there will be a threshold point when traffic volumes from Phase I will

Mr. William Campbell  
Page 2  
July 28, 1998

mandate its construction. This matter will have to be studied in detail to ensure the proper timing of the bypass road construction during Phase I.

- d. Access from Lawai Road is a major concern should Lawai Road be used for access to the resort area in the early stages of the project. The interior roadways leading to the resort area should be developed in the early stages to reduce traffic on Lawai Road. A schedule relating to the timing of the development of the interior roadways should be prepared for the review and approval of the Public Works and Planning Departments.
- e. We anticipate an increased burden on recreational facilities in the use of the harbor when the resort component is developed. We also anticipate that the County's park area adjacent to the harbor will be impacted by the increased use. The exact impacts are not clear at this time, however, that matter should be studied and addressed at the time of General Plan and Zoning amendment.
- f. In order to break the building massing around the resort portion an open space area which could double as a passive park should be considered somewhere in that portion of the project.
- g. Wetland maintenance is important to avoid stagnant water and mosquito related problems. A detailed maintenance plan should be developed at time of General Plan and Zoning amendment to ensure that the wetlands will not present problems to the neighboring communities.

Should you have any questions on the matters please feel free to contact Keith Nitta of my staff at 241-6677.



DEE M. CROWELL  
Planning Director

cc: OEQC

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

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August 7, 1998

Mr. Dee M. Crowell, Director  
Planning Department  
County of Kauai  
4444 Rice Street  
Lihue, Kauai, Hawaii 96766

Attention: Mr. Keith Nitta

Dear Mr. Crowell:

Subject: Kukui'ula Bay Resort  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS). The following are our responses to your comments in your letter of July 28, 1998:

- a. We believe that the location of the project's "Mauka Road" is the approximate alignment of the "south shore by-pass" road indicated in the Kauai Long-Range Land Transportation Plan (KLLTP), prepared by the State Department of Transportation. The Mauka Road, under the KLLTP, is intended to extend both eastward to Lihue and westward towards Kalaheo. The project's Mauka Road alignment also ties into an existing agricultural roadway that passes through the National Tropical Botanical Gardens in Lawai Valley.
- b. As discussed in the Traffic Impact Analysis Report included in the Draft SEIS, improvements that were recommended will be constructed at the appropriate time. The proposed Resort project has not changed any timing of improvements. The updated TIAR indicates that the proposed changes will not have a significant effect on previous traffic estimates. Recommendations made in the earlier traffic study are still valid.
- c. Construction of the "Westerly Bypass Road" is required after 1,738 units of the Kukui'ula project are completed. This requirement will still be implemented, although the analysis in the TIAR indicates that as a result of the first phase of the Koloa-Poipu Bypass Road, Poipu Road could support up to 2,050 units in the Kukui'ula Project.
- d. The internal subdivision roads will be constructed in segments as development occurs along this alignment or until the unit count reaches certain threshold levels of service, as described in the traffic report. The TIAR indicated that Lawai Road has the capacity to accommodate 370 additional units.

Mr. Dee Crowell  
Planning Department  
August 7, 1998  
Page 2

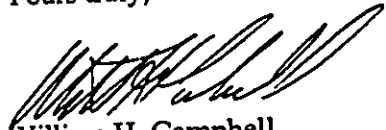
- e. The Kukui`ula Project will include the development of a range of recreational amenities. These include an 18-hole golf course, a 15-acre archaeological park, historical preserves, active and passive parks, and open space areas. Pedestrian and bike paths are planned throughout the overall project along the major roadways. The Resort will provide on-site amenities such as swimming pools and tennis courts for visitors. The proposed 20-acre lagoon will also be a passive recreational amenity. The number and diversity of recreational facilities planned will enhance the existing inventory of recreational facilities.
- f. The 20 acres planned for the lagoon will serve as a passive recreational amenity that will provide spatial separation between the various components of the Resort. This is much larger than the 6-acre park identified in previous land use plans for the Resort area.

As stated in the SEIS, the Resort is planned as a low-density development. Given the total acreage of the Resort (77-acres) and a unit count of 700 units (including lock-outs), the overall density of the site is about 9 units per acre. Units are planned in 2 to 4 story buildings. Additionally, the 100-foot building setback established along Lawai Road combined with the 20-acre lagoon provides a spatial separation between the Resort buildings. Landscaping within the Resort will further screen the buildings.

- g. As stated in the Draft SEIS, to prevent stagnant water and breeding of mosquitoes, pumps are planned to circulate the water in the lagoon. The lagoon will also be stocked with the appropriate fish species to control the mosquito population. Consultation with the U.S. Fish and Wildlife Service and the State Department of Land and Natural Resources will continue to develop a healthy and thriving habitat for endangered species. Maintenance programs, such as nuisance plant eradication, nuisance animal control, maintenance dredging, odor control, and mosquito control will be developed for the lagoon.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager

3494 Waha Rd.  
Kalaheo, HI. 96741  
August 4, 1998

**William H. Campbell  
Kukui`ula Development Co.  
P.O. Box 3440  
Honolulu, HI. 96801**

**Dear Mr. Campbell:**

**I am writing this letter as public comment on the draft EIS for the proposed A & B development at Kukui`ula Harbor on Kauai.**

**As a resident, my husband and I frequently visit the Poipu area, especially, the beaches. Since there are relatively few beaches in the Poipu area compared to the population, the beaches all along Poipu and Lawai Beach Road are always crowded, winter and summer. The Lawai Beach Resort, which is next to the proposed development, has the only sandy beach in the area and it is wall-to-wall people every time we ride by.**

**I believe the environmental impacts on the entire Poipu area should be considered, not just the immediate vicinity of the harbor. Regardless of the fact that the proposed development is inland, those residents and visitors will be using our local beaches. Another 1500 to 3,000 people using the beaches in that area will definitely have a major negative impact.**

**I absolutely think that any more high density development (hotel, condos, timeshares) in that area is inappropriate. Poipu is already developed to the point where recreational facilities are strained to the limit. It seems to me that, if there is any development at all it should be mixed-income residential development only, and phased in over a long period of time.**

**Sincerely,**

*Patricia Egan*

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

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August 7, 1998

Ms. Patricia Egger  
3494 Waha Road  
Kalaheo, Hawaii 96741

Dear Ms. Egger:

Subject: Kukui'ula Bay Resort  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated August 4, 1998.

This SEIS focuses on the Resort area primarily because the 1989 EIS that was accepted by the County addressed the environmental impacts of the entire 1,000-acre Kukui'ula Planned Community Project. The Kukui'ula Project, as addressed in the 1989 EIS, will include the development of a range of recreational amenities. These include an 18-hole golf course, a 15-acre archaeological park, historical preserves, active and passive parks, and open space areas. Pedestrian and bike paths are planned throughout the overall project along the major roadways.

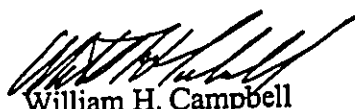
The Resort will provide on-site amenities such as swimming pools and tennis courts for visitors. The proposed 20-acre lagoon will also be a passive recreational amenity. The number and diversity of recreational facilities planned will enhance the existing inventory of recreational facilities.

As stated in the SEIS, the Resort is planned as a low-density development. Given the total acreage of the Resort (77-acres) and a unit count of 700 units (including lock-outs), the overall density of the site is about 9 units per acre. Units are planned in 2 to 4 story buildings. Additionally, the 100-foot building setback established along Lawai Road combined with the 20-acre lagoon provides a spatial separation between the Resort buildings and existing developed areas. Landscaping within the Resort will further screen the buildings.

Development of the Kukui'ula project will be phased over a period of 25 or more years, depending on market and economic factors. The Resort is expected to have a 5 to 10 year construction timetable.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager

August 5, 1998

Mr. William H. Campbell  
Kukuiula Development Co.  
P. O. Box 3440  
Honolulu, HI 96801

Dear Mr. Campbell:


This letter is in regard to A&B's planned community in Poipu. According to the article in The Garden Island of August 4, 1998, the public has until August 7 to respond to revised draft EIS.

The size and scope of this project seems rather large in light of Kauai's economy. With two hotels still shuttered in Poipu, and the population stable or dropping, this much development does not seem necessary. The density is already so high in the area of Lawai Beach Resort, Prince Kuhio, Kuhio Shores and the many vacation rentals, that the beaches are overcrowded. The qualities that make the South Shore so special are being compromised with too much development.

That this project would create some jobs is true, but I wonder if the increase in population, traffic and overcrowding of our small beaches is worth it.

Thank you for your time and attention in this matter.

Sincerely,

  
Mary S. Rahilly  
3450 Waikomo Rd  
Koloa, HI 96756

cc: townscape



**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Ms. Mary Rahilly  
3450 Waikomo Road  
Koloa, Hawaii 96756

Dear Ms. Rahilly:

Subject: Kukui'ula Bay Resort  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated August 5, 1998.

As stated in the SEIS, the Resort is planned as a low-density development. Given the total acreage of the Resort (77-acres) and a unit count of 700 units (including lock-outs), the overall density of the site is about 9 units per acre. Units are planned in 2 to 4 story buildings. Additionally, the 100-foot building setback established along Lawai Road combined with the 20-acre lagoon provides a spatial separation between the Resort buildings. Landscaping within the Resort will further screen the buildings.

The overall Kukui'ula Project, as addressed in the 1989 EIS, will include the development of a range of recreational amenities. These include an 18-hole golf course, a 15-acre archaeological park, historical preserves, active and passive parks, and open space areas. Pedestrian and bike paths are planned throughout the overall project along the major roadways.

The Resort will provide on-site amenities such as swimming pools and tennis courts for visitors. The proposed 20-acre lagoon will also be a passive recreational amenity. The number and diversity of recreational facilities planned will enhance the existing inventory of recreational facilities.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,

  
William H. Campbell  
Executive Vice President and Manager

August 5, 1998

Mr. William H. Campbell  
Kukuiula Development Co.  
P. O. Box 3440  
Honolulu, HI 96801

Dear Mr. Campbell:

This letter is regarding A&E's planned community in Poipu.

I understand that this project has been on hold for some time and has been revised due to Kauai's economy and Hurricane Iniki. I feel this project is too large in light of our population and the number of existing hotels, timeshares, and vacation rentals in Poipu.

One of the statements in the Garden Island Newspaper was that this project would focus more on "eco-tourism". I wonder how hotels, timeshares, single family homes and shops can be part of that theme. The qualities that residents and visitors appreciate about Poipu would certainly be compromised.

Thank you for your time and attention in this matter.

Sincerely,

Steven Hashi

P.O. Box 1010  
Kalaheo, HI 96741

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Mr. Steven Hashi  
P.O. Box 1010  
Kalaheo, Hawaii 96741

Dear Mr. Hashi:

Subject:       Kukui'ula Bay Resort  
              Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated August 5, 1998.

As stated in the SEIS, the overall Kukui'ula project has undergone changes in response to challenges that have arisen over the course of the project, including Hurricane Iniki and Kauai's continuing poor economic conditions. We have invested considerable resources in the development of Kukui'ula. The Resort that is the subject of this SEIS represents a strategic component of the overall master plan. Over the years we have undertaken various measures to meet community and government concerns. These include:

- Construction of drainage improvements to minimize flood hazards and sedimentation in Kukui'ula Bay.
- Revised the project master plan to relocate residential uses outside of flood and tsunami areas.
- Constructed roadway improvements along Lawai Beach Road.
- Constructed a regional wastewater treatment plant to accommodate the overall project as well as the surrounding community.
- Constructed affordable housing at Eleele Nani Phase 2 and dedicated land for affordable housing at Paanau.

Thus, a considerable amount of time and resources have been expended on the project to date.

The Resort is planned as a low density development that will have a lagoon as its focal point. The lagoon is expected to become a habitat for water bird species that will serve as a passive recreational resource for the adjacent visitor units.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell

Executive Vice President and Manager

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822 Bishop Street • P.O. Box 3440 • Honolulu, HI 96801-3440 • Telephone (808) 525-6611 • Fax (808) 525-8447

A wholly owned subsidiary of A&B-Hawaii, Inc.



KOLOA COMMUNITY ASSOCIATION  
P.O. BOX 1313  
KOLOA, KAUAI, HAWAII 96756

Via Facsimile 808-241-6699

August 5, 1998

Dee Crowell , Kauai County Planning Director  
County of Kauai, Planning Department  
Contact: Keith Nitta  
4444 Rice St., Suite 4473  
Lihue, HI 96766

Re: Kukui'ula Bay Village , A&B Proposal for Koloa Area

The proposed hotel and time share condos with a lagoon/wetlands area is more palatable than the earlier proposals. If a hotel is to be added in the south shore area, we only support that occurring in the westerly direction. We trust the walk areas through the lagoon/wetlands will be open to the community to use as well as residents of the area. We are also concerned that this proposed project be of the same quality as those hotels presently in the south shore. It was our understanding that zoning for condominiums in the south shore was already at the maximum .

Our concerns are several:

**1) INFRASTRUCTURE:**

- \* Major change in traffic flow
- \* Impact on community - negative
- \* Provide vertical and horizontal road relief
- \* Prior triggers based on significantly different plan

\* Change trigger amount for by-pass based on present plan

The most significant issue is the infrastructure/traffic concern. The proposal will increase the road use many times over (200 rooms, 300 - 500 condos = 1200- 1500 additional cars per day) just with this addition.

A basic principle is that this development should not diminish the quality of life for the present residents of Koloa, during the construction or once it is open and functioning.

Therefore, significant improvements in the infrastructure will be required. These should be in place when construction begins. ( Not like the eastern bypass that was only built after the disaster of the roads of Koloa/Poipu after the Hyatt opened)

We can only support this proposal IF significant traffic remedies are installed at the beginning of the development. Should the improvements be diminished, deleted, or delayed to completion - we CANNOT support this development. A signal at the entrance or the Lawai intersection is not a solution to the traffic increase. A good traffic plan should be developed for the area. We want to call attention to the plan for an exit from the project across from Gloria's B&B. This will trigger serious congestion and impact this area negatively. If the road is moved close to the Spouting Horn entrance, it will put increased traffic in an area that is already designated a busy location.

This proposal plans only to add horizontal roads that will eventually elevate the Lawai Rd. impact. But there is no plan for the near future to deal with the impact on the whole community due to vertical traffic through Koloa. All construction, all employees, all visitors will have to go through downtown Koloa, down Poipu road for a large distance, before any alternative road is offered. We consider this a severe impact on the Koloa/Poipu area and poor long range planning. We trust Planning will require both vertical and horizontal improvements in the beginning of the development.

At present, the western by-pass vertical road is due to be built only when there are 1750 units occupied! This means that at least 4000 of the planned 6000 potential cars would be ON the road BEFORE any alternate would be constructed. This does not take into account the addition of resort driving - more frequent and less familiar drivers, varied numbers in the condos, etc. We believe the by-pass plan should be fully reevaluated and required soon.

The impact on the Koloa area is immense. The impact on the visitor industry in this area will be immense - and negative! We encourage people to come and visit and then create a road situation in which they will sit for 30 minutes trying to leave Poipu. We invite Planning to come and visit our area during pau hana time even now. It is often backed up traffic for a good mile leaving Koloa. This is without the addition of construction, employees and visitors for a whole new resort. And - remember - Waiohai will eventually be added and bring another return of a size able number of cars( 400 rooms + employees).

## 2) RECREATIONAL FACILITIES

- \* Park facilities with deadlines
- \* Swimming pool and/or gym for children

What plans are there for meeting the needs for recreation for this major increase in people, both tourist and longer term residents? The beach area at the Sheraton cannot possibly sustain this increase alone. It will destroy the quality, for the Sheraton/Kiahuna residents as well as the present many residents who recreate here regularly. Poipu Park can handle more, but hardly this large amount.

The park for residents will be needed for this increase as well as keeping the commitment to the community to provide this recreational area.

A swimming pool might be a partial solution for an alternative activity to the beach. A gym or youth center would be a very wise idea.

There does not seem to be any concrete agreement for when the designated parks will be completed and available to residents. A firm dated plan for the parks needs to be created.

## 3) CONTRIBUTION TO THE KOLOA COMMUNITY

We ask what this project is offering the present community in improving the quality of life here now. We can see many ways in which the community is in danger of losing quality. What is being contributed? Dollars are helpful but they do not make up for the loss of life quality.

The parks for residents and a swimming pool might be a partial solution. A gym or youth center would be a very wise idea. Assistance with the transfer station would be helpful to the community also.

## 4) AGREEMENTS WITH COUNTY/ KOLOA AREA

An on-going problem with developments on Kauai has been the lack of consistent follow through on commitments that are made as conditions of the project.

There is a list of conditions that were placed on this project in 1995. They include:

- Phase one 65% build-out before Phase 2 considered; traffic plans for construction and permanent use; participation in road development and improvements;
- marine studies; commercial development plans; EIA regarding road changes;
- \$250,000 towards cost of road changes; several park dedications; paths to and

from the parks; participation in transfer station.

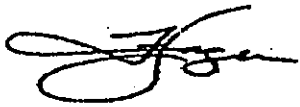
These should be reviewed and carefully determined which need to be completed now, which prior to permitting, and which will be completed at the end of the project. We would like to be included in that discussion so that the communities needs are met.

We also comment that there is a study on visitor units approved in the south shore area. (This is commonly known as Heather's Report.) It would be appropriate to review this proposal for additional units with this study in mind.

In conclusion the expansion of this development should be accompanied by the necessary segments of infrastructure.

To assure that this occurs , this developer should be required by ordinance to not only accomplish that part of the infrastructure ( streets , sewer, utilities ) that occurs within their property boundaries, but also to the development of off site improvements impacted by this development .

Sincerely ,



Fred Jager , President

c. Via Facsimile :  
OEQC  
C. Townscape  
A&B Properties

## KUKUI'ULA DEVELOPMENT COMPANY, INC.

---

August 14, 1998

Mr. Fred Jager, President  
Koloa Community Association  
P.O. Box 1313  
Koloa, Kauai, Hawaii 96756

Dear Mr. Jager:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated August 5, 1998. The following is a response to concerns raised in your letter.

I. Infrastructure

As discussed in the Traffic Impact Analysis Report included in the Draft SEIS, improvements that were recommended will be constructed at the appropriate time. The proposed Resort project has not changed any timing of improvements. The updated TIAR indicates that the proposed changes will not have a significant effect on previous traffic estimates. Recommendations made in the earlier traffic study are still valid.

The Major Project Road is intended to ultimately be the primary access to service the Resort. As part of the Major Project Road, the intersection of Lawai and Poipu Beach Roads will be reconfigured to form a cross intersection whereby the Major Project Road will directly lead to Poipu Beach Road. The "Western Bypass" road is also planned to be constructed when the threshold of 1,738 units is reached.

Internal subdivision roads will be constructed in segments as development occurs along its alignment or until the unit count reaches certain threshold levels of service, as described in the traffic report. The TIAR indicated that Lawai Road has the capacity to accommodate 370 additional units.

It should be noted that, Lawai Road, from the intersection with Poipu Road to the vicinity of Kukui'ula Bay, was widened by A&B to have a 43-foot right-of-way where Lawai Road abuts the project site. Improvements included partial realignment of Lawai Road, a minimum of 6 feet of additional pavement width, sidewalks, curbs, gutters and a planting strip, which is being maintained by A&B.

2. Recreational Facilities

The Kukui'ula Project will include the development of a range of recreational amenities. These include an 18-hole golf course, a 15-acre archaeological park, historical preserves, active and passive parks, and open space areas. Pedestrian and bike paths are planned throughout the overall project along the major roadways. The Resort will provide on-site



Mr. Fred Jager, President  
August 14, 1998  
Page 2

amenities such as swimming pools and tennis courts for visitors. The proposed 20-acre lagoon will also be another passive recreational amenity. The number and diversity of recreational facilities planned will enhance the existing inventory of recreational facilities.

According to County ordinance, park dedication requirements for the Kukui`ula project would be approximately 14 acres. The Kukui`ula project currently has a total of 32 acres designated for parks, plus 11.5 acres for the archaeological park, and 11.5 acres of open space preserve. This acreage more than satisfies the County park dedication requirements.

The Resort is also expected to provide on-site recreational activities such as swimming and tennis that would minimize impact upon nearby public recreational facilities. The lagoon also provides a unique educational and ecological attraction for visitors and residents.

3. Contribution to the Koloa Community

As indicated in item 2 above, recreational facilities throughout the Kukui`ula project are more than what is required under County ordinance. The parks and church sites planned within the project could be potential locations for a gym or youth center.

As part of the conditions of the General Plan ordinance for the Kukui`ula project, A&B is required to participate in the long range planning of a refuse transfer station for the Koloa-Poipu area.

4. Agreements with County/Koloa Area

We acknowledge the conditions imposed as part of the zoning and general plan ordinances for the Kukui`ula project.

The necessary permits and approvals required for development of the project will be obtained pursuant to State and County rules and regulations. We will be seeking input from the local community as we process those applications. All infrastructure will be constructed, as needed, to service the various project components.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,

  
William H. Campbell  
Executive Vice President and Manager

BENJAMIN J. CAYETANO  
GOVERNOR



GARY GILL  
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

August 7, 1998

Mr. Dee M. Crowell, Director  
Planning Department  
4444 Rice Street, Suite 473  
Lihue, Hawaii 96766

Dear Mr. Crowell:

Subject: Draft SEIS for the Kukuiula Bay Resort, Kauai

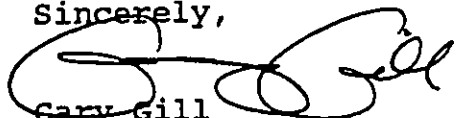
Thank you for the opportunity to review the subject document. We have the following comments and questions.

1. A 20-acre lagoon site will be excavated to provide a permanent water feature. Please disclose where the excavated materials will be disposed. Will the materials be tested for contamination before disposal?
2. The lagoon will be excavated down to the ground water table. Please describe measures to prevent the groundwater from being contaminated.
3. An erosion control plan will be developed for construction operations. Please describe the details of this proposed plan.
4. The original EIS for the overall Kukuiula Planned Community recommended that 3 significant archaeological sites be preserved. Describe the status of the preserved sites.
5. Construction of the project will cause a temporary impact on the available foraging grounds for endangered water birds. Please describe if there are any nearby alternative foraging sites for the water birds. If not, describe mitigation measures to minimize this impact.
6. Please analyze the impact of this project on cultural practices and features (including traditional and customary gathering rights of native Hawaiians) associated with the project area. Please refer to the attached guidelines for assessing cultural impacts.

Mr. Crowell  
Page 2

Should you have any questions, please call Jeyan Thirugnanam at  
586-4185.

Sincerely,



Cary Gill  
Director

Attachment

c: Kukuiula Development Company. Inc.  
Townscape, Inc.

**GUIDELINES FOR ASSESSING CULTURAL IMPACTS**  
Adopted by the Environmental Council, State of Hawaii  
November 19, 1997

**I. INTRODUCTION**

It is the policy of the State of Hawaii under Chapter 343, HRS, to alert decision makers, through the environmental assessment process, about significant environmental effects which may result from the implementation of certain actions. An environmental assessment of cultural impacts gathers information about cultural practices and cultural features that may be affected by actions subject to Chapter 343, and promotes responsible decision making. Articles IX and XII of the State Constitution, other state laws, and the courts of the state require government agencies to promote and preserve cultural beliefs, practices, and resources of native Hawaiians and other ethnic groups. Chapter 343 also requires environmental assessment of cultural resources, in determining the significance of a proposed project.

The Environmental Council encourages preparers of environmental assessments and environmental impact statements to analyze the impact of a proposed action on cultural practices and features associated with the project area. The Council provides the following methodology and content protocol as guidance for any assessment of a project that may significantly affect cultural resources.

**II. CULTURAL IMPACT ASSESSMENT METHODOLOGY**

Cultural impacts differ from other types of impacts assessed in environmental assessments or environmental impact statements. A cultural impact assessment includes information relating to the practices and beliefs of a particular cultural or ethnic group or groups.

Such information may be obtained through scoping, community meetings, ethnographic interviews and oral histories. Information provided by knowledgeable informants, including traditional cultural practitioners, can be applied to the analysis of cultural impacts in conjunction with information concerning cultural practices and features obtained through consultation and from documentary research.

In scoping the cultural portion of an environmental assessment, the geographical extent of the inquiry should, in most instances, be greater than the area over which the proposed action will take place. This is to ensure that cultural practices which may not occur within the boundaries of the project area, but which may nonetheless be affected, are included in the assessment. Thus, for example, a proposed action that may not physically alter gathering practices, but may affect access to gathering areas would be included in the assessment. An ahupua'a is usually the appropriate geographical unit to begin an assessment of cultural impacts of a proposed action, particularly if it includes all of the types of cultural practices associated with the project area. In some cases, cultural practices are likely to extend beyond the ahupua'a and the geographical extent of the study area should take into account those cultural practices.

The historical period studied in a cultural impact assessment should commence with the initial presence in the area of the particular group whose cultural practices and features are being assessed. The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs.

The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural, including submerged cultural resources, which support such cultural practices and beliefs.

The Environmental Council recommends that preparers of assessments analyzing cultural impacts adopt the following protocol:

- (1) identify and consult with individuals and organizations with expertise concerning the types of cultural resources, practices and beliefs found within the broad geographical area, e.g., district or ahupua'a;
- (2) identify and consult with individuals and organizations with knowledge of the area potentially affected by the proposed action;
- (3) receive information from or conduct ethnographic interviews and oral histories with persons having knowledge of the potentially affected area;
- (4) conduct ethnographic, historical, anthropological, sociological, and other culturally related documentary research;
- (5) identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and
- (6) assess the impact of the proposed action, alternatives to the proposed action, and mitigation measures, on the cultural resources, practices and beliefs identified.

Interviews and oral histories with knowledgeable individuals may be recorded, if consent is given, and field visits by preparers accompanied by informants are encouraged. Persons interviewed should be afforded an opportunity to review the record of the interview, and consent to publish the record should be obtained whenever possible. For example, the precise location of human burials are likely to be withheld from a cultural impact assessment, but it is important that the document identify the impact a project would have on the burials. At times an informant may provide information only on the condition that it remain in confidence. The wishes of the informant should be respected.

Primary source materials reviewed and analyzed may include, as appropriate: Mahele, land court, census and tax records, including testimonies; vital statistics records; family histories and genealogies; previously published or recorded ethnographic interviews and oral histories; community studies, old maps and photographs; and other archival documents, including correspondence, newspaper or almanac articles, and visitor journals. Secondary source materials such as historical, sociological, and anthropological texts, manuscripts, and similar materials, published and unpublished, should also be consulted. Other materials which should be examined include prior land use proposals, decisions, and rulings which pertain to the study area.

### III. CULTURAL IMPACT ASSESSMENT CONTENTS

In addition to the content requirements for environmental assessments and environmental impact statements, which are set out in HAR §§ 11-200-10 and 16 through 18, the portion of the assessment concerning cultural impacts should address, but not necessarily be limited to, the following matters:

1. A discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints or limitations which might have affected the quality of the information obtained.
2. A description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken.
3. Ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained.
4. Biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area.
5. A discussion concerning historical and cultural source materials consulted, the institutions and repositories searched, and the level of effort undertaken. This discussion should include, if appropriate, the particular perspective of the authors, any opposing views, and any other relevant constraints, limitations or biases.

6. A discussion concerning the cultural resources, practices and beliefs identified, and, for resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site.
7. A discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area, affected directly or indirectly by the proposed project.
8. An explanation of confidential information that has been withheld from public disclosure in the assessment.
9. A discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs.
10. An analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.
11. A bibliography of references, and attached records of interviews which were allowed to be disclosed.

The inclusion of this information will help make environmental assessments and environmental impact statements complete and meet the requirements of Chapter 343, HRS. If you have any questions, please call us at 586-4185.

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

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August 14, 1998

Mr. Gary Gill, Director  
State of Hawaii  
Office of Environmental Quality Control  
235 South Beretania Street, Suite 702  
Honolulu, Hawaii 96813

Dear Mr. Gill:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Environmental Impact Statement

Thank you for your comments on the Draft Environmental Impact Statement (SEIS) dated August 7, 1998. The following is a response to your comments.

1. The existing drainage basin is dry most of the year except after a storm. The basin is not expected to contain any contaminants. The excavated material will be used as fill material in other areas of the project site. Should contaminants be suspected, the soil will be tested.
2. Construction of the lagoon is not expected to contaminate the groundwater. Potable water wells are located several miles mauka of the lagoon. The lagoon is also below the Underground Injection Control (UIC) Line and near the shoreline.

The lagoon is located within the Koloa Aquifer System that has an abundance of groundwater controlled by a complex subsurface geology. High level water is found in the Koloa formation and basal water occurs below the Koloa formation in the Napali formation.

The Koloa formation covers the coastal areas, which prevents basal water in the Napali formation from entering the ocean. High level and perched water in the Koloa formation, however, enters the sea along the coastline or seeps into gullies and streams. Most wells have been drilled to sufficient depth to draw basal water from the Napali formation. The lagoon will have no impact on the basal water contained in the Napali formation.

The Napali basal aquifer is recharged mainly by rainfall in the interior highlands of the island. Existing wells in the area indicate that the wells are very productive and show superior characteristics.

To maintain a healthy lagoon, consultation with the U.S. Fish and Wildlife Service has begun to establish a program of Best Management Practices. A clean and healthy lagoon is important for the survival of water birds that are expected to frequent the lagoon.

3. An erosion control plan will be developed for construction operations. This plan could include temporary siltation basins that will capture eroded soil and storm water runoff from areas that have been cleared of vegetation, thereby preventing discharge of soil and storm runoff into coastal waters. Cleared areas could also be planted with vegetation to

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Mr. Gary Gill, Director  
August 14, 1998  
Page 2

reduce erosion potential. The erosion control plan will be developed in conjunction with the appropriate government agencies for review and input.


4. The 1989 EIS recommended that three archaeological sites be preserved (Sites 3, 38A and 51). Sites 38A and 51 are located in the archaeological park proposed for the overall Kukui`ula Project and a Preservation Plan has been submitted to the State Historic Sites Division with approval forthcoming. Site 3 is located in a park area as part of Phase II of the Kukui`ula Project and appropriate measures will be undertaken at that time to preserve the site. None of these three sites that were recommended for preservation in the 1989 EIS are located within the Resort.
5. The drainage basin is not a primary foraging ground for water birds, except for short periods after a storm. Other foraging grounds are available at nearby irrigation reservoirs, other drainage basins in the vicinity of the Resort, and at the wastewater treatment plant ponds. The U.S. Fish and Wildlife Service and the Department of Land and Natural Resources have been consulted regarding the temporary impact on endangered water birds during the construction of the lagoon. Once the lagoon is constructed, the number and occurrence of water birds is expected to increase from predevelopment conditions.
6. Historical research of the property indicates that the bulk of the low-lying portions of the Koloa lands were irrigated fields in prehistoric times. Early historical accounts describe an agricultural complex of taro, yams, sweet potato and sugarcane. Information on traditional farming in the area during the mid-1800s includes references to cattle and commercial sugarcane growing, indicating that market-oriented agriculture was beginning to dominate.

The Resort area is a portion of the lands that had been under commercial sugarcane cultivation from the late 1890s until the recent closure of McBryde Sugar Co. in 1996. The site contains no unique topographical features, and all identified archaeological sites are located outside of the Resort area.

Based in part on the history of the area, the absence of natural and cultural resources at the Resort site and the current use of a portion of the site as a drainage basin, the impact of the development of the site on traditional practices appears minimal.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell

Executive Vice President and Manager

BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII



LAWRENCE MIKE  
DIRECTOR OF HEALTH

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. BOX 3378  
HONOLULU, HAWAII 96801

In reply, please refer to:

August 5, 1998

91-289E/epo

Mr. William H. Campbell  
Kukui'ula Development Co., Ltd.  
822 Bishop Street  
P. O. Box 3440  
Honolulu, Hawaii 96801

Dear Mr. Campbell:

Subject: Draft Supplemental Environmental Impact Statement  
(DSEIS)  
Kukui'ula Bay Resort  
Koloa, Kauai  
TMK: 2-6-03: Por. of 1, 40

Thank you for allowing us to review and comment on the subject document. In addition to the comments that we made in our letter to Mr. Harold Masumoto, State Planning Office, dated December 30, 1993 (enclosed), we have the following additional comments to offer:

Noise Concerns

1. The wastewater treatment plant is of primary concern due to its proximity to residences. Wastewater treatment plants contain motorized equipment that should be designed and acoustically treated in order to comply with the provisions of Chapter 11-46, Hawaii Administrative Rules, "Community Noise Control."
2. Noise associated with the golf course may adversely impact the adjacent residences. Every effort should be made to minimize the amount of noise from golf course maintenance activities. Essential maintenance activities (e.g., mowing of greens and fairways) should be conducted at times that do not disturb nearby residences.
3. There are also concerns regarding the potential noise impacts resulting from commercial areas, business areas, and community parks when adjacent to residential areas.

Mr. William H. Campbell  
August 5, 1998  
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91-289E/epo

Mitigative measures toward minimizing these impacts should be implemented within any planned, mixed-use community.

4. Construction activities must comply with the provisions of Chapter 11-46, Hawaii Administrative Rules, "Community Noise Control."

Should there be any questions on this matter, please call Mr. Jerry Haruno, Environmental Health Program Manager, Noise, Radiation and Indoor Air Quality Branch at 586-4701.

#### Pollution Runoff Control for the Residential Development

We recommend that nonpoint source pollution control concerns be addressed and that there be no increase in polluted runoff from the project. The construction of the subject project will greatly increase the acreage of impervious area, thereby increasing storm water runoff volumes. The State has developed *Hawaii's Coastal Nonpoint Pollution Control Program Management Plan*. This management plan addresses proper planning, design, and use of Best Management Practices to substantially reduce polluted runoff (nonpoint source pollution) generated by different activities. Please refer to the management plan (pages III-101 to III-162) for urban management measures. The management plan can be obtained from the Coastal Zone Management Program (587-2877) in the Office of Planning, Department of Business, Economic Development and Tourism.

The following are suggested management measures to consider:

1. For New Development

Please refer to *Hawaii's Coastal Nonpoint Pollution Control Program Management Plan* (pages III-104 to III-108). The New Development Management Measure should be achieved by reducing total suspended solid loadings by 80% once the site is permanently stabilized.

2. For Site Development

- a) Please refer to the management plan, pages III-112 to III-117;
- b) Within the conceptual landscape plan, include open "green areas" that will slow down and retain stormwater runoff. For example, the lands set aside for parks could be constructed as sediment basins

which would retain and prevent polluted runoff from entering coastal waters; and

- c) Limit disturbance of natural drainage features and vegetation.

3. For Construction Site Erosion and Sediment Control

- a) Please refer to the management plan, pages III-117 to III-123;
- b) Conduct grubbing and grading activities during the low rainfall months (April-October);
- c) Grub areas sequentially so that only a small portion of the site is bare at any time;
- d) Use vegetation, mulch, gravel, and porous pavement wherever feasible to maximize the acreage of pervious areas; and
- e) Replant or cover bare areas as soon as grading or construction is completed. New plantings will require soil amendments, fertilizers and temporary irrigation to become established. Use high planting and/or seeding rates to ensure rapid stand establishment.

4. Pollution Prevention

- a) We encourage the implementation of pollution prevention and education programs to reduce nonpoint source pollution. The City and State can be assisted in their efforts in environmental education by providing new homeowners educational packets that contain information on reducing nonpoint source pollution; proper storage, use, and disposal of household chemicals; and proper disposal of pet excrement; and
- b) We encourage large developments to imprint the message "Dump No Waste, Goes to Ocean" over storm drains to remind homeowners not to illegally dump materials in the storm drain system.

Any questions concerning these polluted runoff control comments should be directed to the Clean Water Branch, Polluted Runoff Control Program at 586-4309.

Polluted Runoff Control for Golf Course Development

The State has developed *Hawaii's Coastal Nonpoint Pollution Control Program Management Plan*. This management plan addresses proper planning, design, and use of Best Management Practices to substantially reduce polluted runoff (nonpoint source pollution) generated by golf course development and management. Please refer to the management plan (pages III-148 to III-154) for golf course management measures (see enclosure #2). The management plan can be obtained from the Coastal Zone Management Program (587-2877) in the Planning Office, Department of Business, Economic Development and Tourism.

The following are suggested management measures to consider:

1. Develop and implement grading and site preparation plans to:
  - a) Design and install a combination of management and physical practices to settle solids and associated pollutants in runoff from heavy rains and/or wind;
  - b) Prevent erosion and retain sediment, to the extent practicable, on-site during and after construction;
  - c) Protect areas that provide important water quality benefits and/or are environmentally sensitive ecosystems;
  - d) Avoid construction, to the extent practicable, in areas that are susceptible to erosion and sediment loss;
  - e) Protect the natural integrity of water bodies and natural drainage systems by establishing streamside buffers; and
  - f) Follow, to the extent practicable, the amended U. S. Golfing Association (USGA) guidelines for the construction of greens.
2. Develop nutrient management guidelines appropriate to Hawaii for qualified superintendents to implement so that nutrients are applied at rates necessary to establish and maintain vegetation without causing leaching into ground and surface waters.

Mr. William H. Campbell  
August 5, 1998  
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91-289E/epo

3. Develop and implement an integrated pest management plan. Follow Environmental Protection Agency (EPA) guidelines for the proper storage and disposal of pesticides.
4. Develop and implement irrigation management practices to match the water needs of the turf.

Any questions on these matters should be directed to the Polluted Runoff Control Program in the Clean Water Branch at 586-4309.

Sincerely,



BRUCE S. ANDERSON, Ph.D.  
Deputy Director for  
Environmental Health

Enclosures

c: NR&IAQB  
KDHO  
CWB  
Planning Department, County of Kauai  
Townscape, Inc.

ENCLOSURE #1

JOHN WAIHEE  
GOVERNOR OF HAWAII



JOHN C. LEWIN, M.D.  
DIRECTOR OF HEALTH

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 3378  
HONOLULU, HAWAII 96801

In reply, please refer to:  
91-289/EPO

December 30, 1993

TO: Harold S. Masumoto, Director  
Office of State Planning

FROM: John C. Lewin, M.D.  
Director of Health *[Signature]*

SUBJECT: Petition for Amendment to the State Land Use District Boundaries **FOR**

Petition No.: A93-696  
Petitioner: Kukui'ula  
Requested Changes: Agricultural to Urban  
Proposed Use: Kukui'ula Planned Community  
Location: Koloa, Kauai  
TMK: 2-6-3:por. 1, 4, 23, por. 31 and Others

Thank you for allowing us to review and comment on the subject request. We have the following comments to offer:

Air Pollution

Control of Fugitive Dust:

As identified by the Air Quality Study for the proposed development, Appendix L, there is a significant potential for fugitive dust during the construction activities in an area of this size. Implementation of adequate dust control measures during all phases of construction is warranted. Construction activities must comply with provisions of Chapter 11-60.1, Hawaii Administrative Rules, section 11-60.1-33 on Fugitive Dust.

Contractor should provide adequate means to control dust from road areas and during the various phases of construction activities, including but not limited to:

1. Planning the different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing material transfer points and on-site vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;
2. Providing an adequate water source at site prior to startup of construction activities;
3. Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
4. Control of dust from shoulders, project entrances, and access roads;
5. Providing adequate dust control measures during weekends, after hours, and prior to daily startup of construction activities;

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6. Providing dust control for bare areas on individual lots, prior to lots being sold and eventually grassed by future owners.

Questions on this matter should be directed to Mr. Wilfred Nagamine, Manager, Clean Air Branch at 586-4200.

#### Solid Waste

The projected volume of solid waste to be generated in this planned community at full build-out is 30 tons per day. The discussion of solid waste impacts addresses the existing capacity at the County's new Kekaha Landfill, Phase II. The Department of Health reminds the developer of the State of Hawaii waste diversion goals, established by Act 324, Hawaii Revised Statutes, 1991, targeting 25% waste diversion by 1995, and 50% diversion by the year 2000. Each new development in the State should include measures to encourage recycling and source reduction on site in order to conserve landfill capacity. The mitigation efforts discuss the possibility of composting golf course and landscape generated greenwaste, but includes no commitment to divert recyclables such as glass, plastic, paper or aluminum from the development.

The Department of Health suggests that the Office of State Planning refer to the following Standard Conditions for inclusion as conditions of this boundary change:

1. Petitioners for a Land Use District Boundary Amendment shall develop an overview of the solid waste impacts resulting from the proposed land use change, including a conceptual plan for minimizing the generation and disposal of waste during construction and operations, based on the State's waste management hierarchy and goals and any applicable County goals or conditions.
2. The developer shall, based on the impact analysis, participate in the funding and construction of necessary solid waste disposal and diversion facilities, on a pro-rata basis, as determined by the State's DOH and the County's Department of Public Works.
3. A further condition of any boundary change should require, at the time of local zoning approval, the submittal of a detailed Integrated Waste Management Plan for the development to the County's Department of Public Works, which would address specific waste diversion programs necessary to assist in meeting the State and County reduction goals.
4. The developer shall investigate the use of secondary resources (recycled materials) whenever possible in the construction of the project, including but not limited to, the use of crushed glass as an aggregate substitute in road paving and the use of locally-produced greenwaste compost as a soil amendment in landscaping.

Should you have any questions on this matter, please contact Mr. John Harder of the Office of Solid Waste Management at 586-4227.

#### Water Pollution

A National Pollutant Discharge Elimination System (NPDES) permit is required for any discharge to waters of the State including the following:

1. Storm water discharges relating to construction activities for projects greater than five acres;



Mr. Harold S. Masumoto  
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2. Storm water discharges from industrial activities;
3. Construction dewatering activities;
4. Cooling water discharges less than one million gallons;
5. Ground water remediation activities; and
6. Hydrotesting water.

Any person wishing to be covered by the NPDES general permit for any of the above activities should file a Notice of Intent with the Department's Clean Water Branch at least 90 days prior to commencement of any discharge to waters of the State.

The developer shall contact the Clean Water Branch of the Department of Health and resolve any concerns regarding the proposed marina. The concern may include, but are not limited to, necessary precautions for the possible pollution problems that may arise from spills that occur if a fueling dock is provided and spills that may occur while pumping out shipboard sanitary systems.

Any questions regarding this matter should be directed to Mr. Denis Lau of the Clean Water Branch at 586-4309.

Other Comments

1. The proposed development shall be serviced by the Kukui'ula wastewater treatment works.
2. The proposed development shall meet the "Twelve (12) Conditions Applicable To All New golf Course Development" (attached).
  - a. A detailed irrigation plan for the areas where effluent reuse is proposed shall be submitted to the Wastewater Branch for review and approval. The detailed plan shall meet the requirements of draft #9 of the "Guidelines for the Treatment and Reuse of Reclaimed Water." Should you have any questions, please contact Mr. Terry Kearny at 586-4294.
  - b. All non-drinking water systems, shall be identified by appropriate signs. Also, the non-drinking water systems should use different piping materials from those used for drinking water to ensure that the systems are easily distinguishable from each other.
3. The new drinking water source(s) and drinking water system shall be approved by the Safe Drinking Water Branch of the Department of Health. The proposed drinking water source(s) and drinking water system shall meet the requirements of Title 11, Chapter 11-20, "Potable Water Systems," Hawaii Administrative Rules.
4. The development shall comply with the applicable requirements of Title 11, Chapters: 11-11, "Sanitation," pertaining to natural ventilation and minimum sanitary facilities; 11-14, "Housing;" 11-26, "Vector Control;" and 11-39, "Air Conditioning and Ventilating;" Hawaii Administrative Rules.

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December 30, 1993  
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5. All food services and food establishments shall meet the requirements of Chapter 1-A, "Food Service and Food Establishment Sanitation Code," Public Health Regulations, Department of Health, State of Hawaii.
6. Should a cart barn be constructed, it shall be provided with appropriate measures, including but not limited to, drip pans, structural catchment system, absorbent materials, and other similar measures to minimize the release of used oil/fluids from the batteries, golf carts and other equipment during maintenance.
  - a. Battery electrolytes, oils and lubricants shall be properly stored and dispensed.
  - b. Used batteries, motor oil, fluids and lubricants shall be properly stored and disposed of.
7. The property may harbor rodents which will be dispersed to the surrounding areas when the site is cleared. In accordance with Chapter 26, "Vector Control," Title 11, Administrative Rules, State of Hawaii, the applicant shall ascertain the presence or absence of rodents on the property. Should the presence of rodents be determined, the applicant shall eradicate the rodents prior to clearing the site.
8. The proposed electric power transmission line may be situated near residences of the proposed development. Near-by proposed residences may be affected by the proposed transmission line. A prudent approach is needed at this time to regulate magnetic fields around high-frequency transmitters and low-frequency electric power facilities. The public should be protected against the known and possible health risks associated with transmitters. The existing research data suggests that uncertainties relating to the health effects of electromagnetic fields should be resolved in favor of protecting public health. Where technically feasible, public exposures should be minimized. The applicant shall contact the Hazard Evaluation and Emergency Response Office of the Department of Health to address and resolve this concern.
9. The proposed development shall be provided with potable water from an approved source.
10. Due to the general nature of the application submitted, we reserve the right to impose future environmental health restrictions when more detailed information is submitted.
11. The Department of Health recommends that the developer and/or contractor be required to hold a public informational meeting in the surrounding community to describe the project and potential environmental impacts and to respond to concerns relating to the project.

Should you have any questions, you may also contact Mr. Clyde Takekuma, Chief Sanitarian, Kauai District Health Office at 241-3323.

Attachment

c: CAB  
OSWM  
CWB  
Kauai DHO

JCL:AB:sy

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**B. Golf Course Management Measure**

ENCLOSURE #2

- (1) Develop and implement grading and site preparation plans to:**
  - (a) Design and install a combination of management and physical practices to settle solids and associated pollutants in runoff from heavy rains and/or from wind;**
  - (b) Prevent erosion and retain sediment, to the extent practicable, onsite during and after construction;**
  - (c) Protect areas that provide important water quality benefits and/or are environmentally-sensitive ecosystems;**
  - (d) Avoid construction, to the extent practicable, in areas that are susceptible to erosion and sediment loss;**
  - (e) Protect the natural integrity of waterbodies and natural drainage systems by establishing streamside buffers; and**
  - (f) Follow, to the extent practicable, the amended U.S. Golfing Association (USGA) guidelines for the construction of greens.**
- (2) Develop nutrient management guidelines appropriate to Hawaii for qualified superintendents to implement so that nutrients are applied at rates necessary to establish and maintain vegetation without causing leaching into ground and surface waters.**
- (3) Develop and implement an integrated pest management plan. Follow EPA guidelines for the proper storage and disposal of pesticides.**
- (4) Develop and implement irrigation management practices to match the water needs of the turf.**

**VI.B.1. Description**

Because Hawaii is a major tourist destination, there are numerous golf courses on most islands, and many more are planned. According to PER (1995), there are more golf courses than would be expected for its resident or *de facto* populations. Eighty golf courses have already been built in Hawaii, and 76 more are either under construction or planned. Assuming an average of 150 acres per 18-hole course, this land use occupies approximately 12,000 acres in golf courses already built and 23,400 total acres if all those planned and approved were to be built. This intensively managed and landscaped acreage, often located adjacent to the coast, represents a significant land use.

The goal of this management measure is to minimize and prevent the migration of nonpoint source pollutants from golf courses into ground, surface, and coastal waters.

### Part III - Management Measures for Urban Areas

*This management measure has been developed specifically for Hawaii and is not contained in EPA's Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters.*

***Justification for Additional Management Measure:*** *Regardless of the current state and quality of management and maintenance of golf courses, this land use has the potential to be a significant source of polluted runoff due to the proportion of land area involved, the intensity of its management and the quantity of chemicals used.*

*Golf courses have the potential to be a nonpoint source of pollution. During the construction of a golf course, for example, erosion is a primary concern. Without adequate drainage and erosion control measures, water or wind may transport sediments off-site and into surface waters. In addition, golf course superintendents apply nutrients to the soil to make up for nutrient deficiencies. They primarily apply Nitrogen (N), Phosphorus (P) and Potassium (K) to the soil. Without proper management, these nutrients may leach into groundwater or run off into streams and coastal waters. Pesticides, including herbicides, insecticides and fungicides, are another potential contributor to nonpoint source pollution if they leach into surface, ground or coastal waters. In a survey of 37 golf courses in Hawaii, researchers identified 30 different pesticides in use (Brennan et.al. 1992).*

#### **VI.B.2. Applicability**

This management measure applies to all golf courses in Hawaii that are in operation, under construction, or to be built in the future. It should be noted that the other urban management measures also apply to the construction and operation of golf courses.

#### **VI.B.3. Management Practices**

These BMPs are based on state-of-the-art management practices currently being implemented by golf course superintendents.

##### **Soil and erosion control during construction:**

- a. A golf course developer should design and implement an erosion control plan.
- b. Maintain natural drainage features wherever possible.
- c. Screen and test imported soils for pesticide residue and pests.
- d. Retain existing ground cover until the latest date before construction.
- e. Minimize the duration of construction.
- f. Install sedimentation basin at the onset of grading operations.
- g. Develop drainage control features early during construction phase.
- h. Use temporary berms and cut-off ditches, where needed, to control erosion.
- i. Use temporary sprinklers, where practical, in non-active construction areas when ground cover is removed.
- j. Station water truck on site during construction periods to provide for immediate sprinkling as needed in active construction zones.
- k. Thoroughly water graded areas after construction activities have ceased for the day or for the weekend.

- 
- l. Sod or plant all cut and fill slopes immediately after final grading work has been complete.
  - m. After final grading, plant grass on exposed areas.
  - n. Place and maintain adequate soil depth on fairways.
  - o. Divert drainage from greens and tees into catchment areas to filter pollutants from the water.
  - p. Encourage the use of plants that use little irrigation.
  - q. In dry areas, xeriscape with appropriate low-water plants.
  - r. Identify sensitive ecosystems during the design of the golf course.
  - s. Develop habitat to encourage native flora and fauna.
  - t. Establish appropriate buffers zones around and along intermittent and perennial streams, wetlands, anchialine pools, and shorelines that filter pollutants and prevent run-off.
  - u. Establish appropriate buffers zones next to endangered species habitats to filter pollutants and prevent runoff.

**Use of Nutrients:**

- v. A qualified golf course superintendent should administer the nutrient management guidelines.
- w. If necessary, consult the University of Hawaii Cooperative Extension Service (CES) or other qualified agronomists for further guidance.
- x. Schedule fertilizer application so that the chance of leaching and run-off of soluble fertilizers is minimized.
- y. Apply slow release fertilizers that will release nitrogen at a rate comparable to the rate at which it is used by the turf.
- z. Apply slow release nitrogen fertilizer in an insoluble form.
- aa. Calibrate fertilizer application equipment regularly.

**Use of pesticides:**

- bb. Design and implement an integrated pest management (IPM) plan that identifies, among other things, the pesticides, herbicides, and fungicides to be used and emergency response procedures to be undertaken in the event of a spill or accident. A qualified golf course superintendent, should administer this plan.
- cc. Ensure that golf course superintendents have taken the Department of Agriculture's certification course for the application of restricted-use pesticides as required under Chapter 4-66, HAR (Category 3 - Ornamental Plants and Turf Management).
- dd. If necessary, consult CES or other qualified specialist for further guidance.
- ee. Apply pesticides in conformance with the IPM plan.
- ff. Design the golf course to minimize pesticide use by selecting pest resistant grasses and multiple types of grasses where possible.
- gg. When pesticide applications are necessary, consider the persistence, toxicity, runoff potential, and leaching potential of available products. Use these criteria to select the product that is both adequate to control the pest and has the least overall potential for creating nonpoint source pollution.
- hh. Use pesticides that are for targeted organisms whenever possible (*i.e.*, baits for insects) and use mulches and other non-chemical techniques where appropriate.

### Part III - Management Measures for Urban Areas

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- ii. Encourage the use of alternative pesticides and biological controls where appropriate.
- jj. Evaluate the soil and physical characteristics of the site including mixing and loading areas for potential leaching and run-off.
- kk. Avoid applying pesticides in areas where there is a high potential for leaching.
- ll. Avoid locating greens and tees that may require high amounts of pesticides near residential areas.
- mm. Avoid applying pesticides near well heads.
- nn. Follow the label instructions of all pesticides.
- oo. Apply pesticides when runoff losses are unlikely.
- pp. Apply pesticides that are sprayed at a lowest possible height and only when the wind speed is slow (if possible, during wind speeds from 3 to 10 miles/hour).
- qq. Use coarse nozzle and low pressure spray equipment.
- rr. Calibrate pesticide spray equipment regularly.
- ss. Use adjuvant additives where appropriate.
- tt. Use non-volatile or low volatile chemicals, when appropriate.
- uu. Date pesticide containers and keep an inventory.
- vv. Purchase only the amount needed for the season because pesticides have a limited shelf life.
- ww. Determine the area to be sprayed and mix only the amount of pesticides that are needed.
- xx. Properly rinse and dispose of pesticide containers and equipment.
- yy. Use up supplies according to the directions on the label. If excess supplies will not be used, use the material exchange program within a reasonable amount of time.
- zz. Ensure proper storage of pesticides.
  - 1. Locate storage areas away from floodplains, water run-off areas and streams;

#### **Irrigation:**

- 2. A qualified golf course superintendent should administer the irrigation system.
- 3. Use appropriate methods to measure the evapotranspiration rate of water in the soil. Schedule irrigation on the basis of these measurements.
- 4. Avoid excessive irrigation where pesticides were recently applied.
- 5. Where appropriate, determine the amount of salts in the soils before irrigating.
- 6. Encourage the use of R-1 and R-2 reclaimed water classifications, where appropriate, for irrigation.

#### **VI.B.4. Implementation of Management Measure**

**(i) Organizational Structure:** This management measure is currently implemented under existing regulations. A number of State and county agencies implement components of the management measure, depending on where the proposed golf course is to be located.

## KUKUI'ULA DEVELOPMENT COMPANY, INC.

August 14, 1998

Bruce S. Anderson, Ph.D.  
State of Hawaii  
Department of Health  
P.O. Box 3378  
Honolulu, Hawaii 96801

Dear Dr. Anderson:

SUBJECT: Kukui'ula Bay Resort, Koloa, Kauai, Hawaii  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated August 5, 1998. Some of your comments address issues pertaining to the overall Kukui'ula Project and not the Resort, which is the subject of this SEIS. Impacts from uses such as the constructed wastewater treatment plant, the drainage system, the golf course and, sugarcane lands that existing at that time, were addressed in the 1989 EIS and in the State Land Use Commission Petition A93-696.

### Noise Concerns

1. The constructed wastewater treatment plant will comply with the provisions of Chapter 11-46, Hawaii Administrative Rules, "Community Noise Control."
2. Noise from golf course maintenance will be mitigated by the establishment of curfew times so as not to disturb nearby residences as stated in the 1989 EIS, Section 3.4.
3. The Resort Hotel and the Resort Commercial is buffered on the north and east sides by the golf course fairways and to the south by the time-share condominiums, the lagoon and a 100-wide building setback along Lawai Road. Thus, there is significant distance between the existing or planned residential uses and the hotel and commercial facilities that minimizes the potential for noise impacts.
4. Construction activities will comply with Chapter 11-46, Hawaii Administrative Rules, "Community Noise Control."

### Pollution Runoff Control for the Residential Development

#### 1. For New Development

As stated in the SEIS, the amount of silt entering coastal waters has been reduced from 19,000 tons per year to 3,380 tons per year since the construction of the drainage system in 1993, which is more than 80% reduction in sediments loads entering coastal waters.

Mr. Bruce S. Anderson, Ph.D.  
August 14, 1998  
Page 2

2. For Site Development

The drainage system for the overall Kukui`ula Project has been designed to retain excess storm water runoff from a 100-year, 24-hour storm for a developed "Phase 1" condition, as stated in the SEIS, Section 5.1 and the 1989 EIS Sections 2.3.1, 5.1. Retention/detention/siltation basins are planned throughout the Kukui`ula Project to filter out silt prior to entering coastal waters.

3. For Construction Site Erosion and Sediment Control

During construction your suggestions on site erosion and sediment control will be considered.

4. Pollution Prevention

Education packets on pollution prevention and imprinted messages over storm drains will be considered.

Pollution Runoff Control for Golf Course Development

Best Management Practices for the golf course was described in the State Land Use Commission Petition No. A93-696, Exhibit 13, Section 3.1.11 "Fertilizer and Pest Management" and Appendix K "Parametric Environmental Study of Groundwater Impact and Nearshore Oceanographic Input for the Planned Kukui`ula Golf Course at Koloa, Kauai", which was reviewed by your office. Your suggested management measures will also be considered during construction and subsequent operation of the golf course.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,

  
William H. Campbell  
Executive Vice President and Manager



**STANLEY E. & PATRICIA J. ERICKSON**  
1643 10<sup>TH</sup> Street West  
Kirkland WA 98033  
(425) 822-0547

August 6, 1998

~~NAC~~  
✓  
AUG 10 1998  
3003 RF  
✓

VIA FAX NO. 808-241-6699

Director of Planning  
Kauai Planning Commission

RE: Kukul'ula Project - EIS/Rezone

Dear Commission Members:

NB WHC JY DYY PWH LEP  
LGS SMK  
BS MKV  
DY AUG 10 1998 JX  
MM TSY  
SKM  
BKS CC LNS VP. DMS WDP

I own property on Lawai Beach Road.

Yesterday I received from a friend a copy of the article in the local paper concerning the proposed changes to the A&B planned community project near the Kukul'ula harbor. This is the first notification I have received of the revised environmental impact statement.

1. I would appreciate additional time to respond to the environmental impact statement. I have not even been able to obtain a copy of the environmental impact statement. Considering the size of the project it seems we need reasonable public input.

2. Although I do not want to make extensive comments or criticisms, not having reviewed the environmental impact statement, I would like to make the following statements based on the information in the newspaper article and my conversations with the A&B representatives yesterday:

- a. I am extremely concerned about the traffic on Lawai Beach Road.
- b. I am also concerned about additional time share units being proposed for Poipu area. I believe time share units are not the best long term development for the community.
- c. I am extremely concerned about construction of the condominium units on Lawai Beach Road which exceed the normal height of residential properties.
- d. If condominium units are to be developed on the subject property it would be desirable for the buildings and parking lots to be set back at least 400 feet

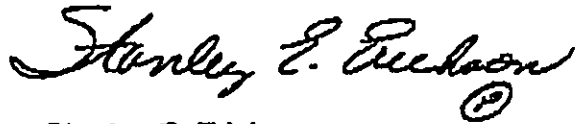
from Lawai Beach Road. The setback area could be used for storm retention ponds, open space, landscaping and the golf course. The Lawai Beach Road is a beautiful asset to the community and should be maintained.

I appreciate your courtesies in reviewing this letter. I will try and provide you with more information after I have had a chance to review the EIS. I will be leaving town for a couple of days.

This is a major project which A&B is proposing. It is important for the community. It should be reviewed to correctly balance the needs of all of the parties.

Please let me know where I can obtain a copy of the EIS. Thank you.

Sincerely,



Stanley E. Erickson

SEE:pp

cc: Tom Shigemoto, A&B  
Office of Environmental Quality, Honolulu

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Mr. Stanley E. Erickson  
1643 10<sup>th</sup> Street West  
Kirkland, Washington 98033

Dear Mr. Erickson:

Subject: Kukui'ula Bay Resort  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated August 6, 1998.

As stated in the SEIS, this project was initially conceived in 1958 and in the early 1980s A&B began to secure the appropriate approvals. A significant number of public hearings and community meetings have been held to inform residents about this project since that time.

According to the Traffic Impact Assessment Report (TIAR), Lawai Road has the capacity to accommodate an additional 370 units. Thereafter, other roadways or improvements will be necessary to provide access to the Resort. The use of Lawai Road to access the initial phases of the Resort is one alternative available at this time. Ultimately, however, other roads will be constructed to service the Resort.

The Resort is planned as a low-density development. Given the total acreage of the Resort (77-acres) and a unit count of 700 units (including lock-outs), the overall density of the site is about 9 units per acre. Units are planned in 2 to 4 story buildings. Additionally, the 100-foot building setback established along Lawai Road combined with the 20-acre lagoon provides a spatial separation between the Resort buildings. Landscaping within the Resort will further screen the buildings.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager

Kukuiula Development Co.  
PO Box 3440  
Honolulu, Hawaii 96801  
Att. William H. Campbell,

Aug 6, 1998

NB WHC JY DYY PWH BEF  
LGS SMK  
BS MKV  
DY AUG 1 0 1998 JX  
MM TSY  
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RKS CC LNS VR DMS WDP

Dear Bill,

Having read of your Kukuiula project in the August  
~~4th~~ 4th edition of the Garden Island, and checking on it  
further at the Planning Dept. would like to jot down a  
few thoughts on the subject.

1. Giving up the Marina is disappointing as Kukuiula Harbor  
is a false. From our own experience I believe your wild  
bird sanctuary will not work surrounded as it will  
be by a hotel and Condos. I could be wrong. But we  
had two old tree patches in Poipu of about 1/2 acre  
which we converted into a pond. The acoo, coo and  
cunius loved it and used it until the  
Sheraton Hotel was built across the road, then the  
birds would only come in at night. During the day  
people, particularly children, would frighten them  
away. It might work being larger.
2. I feel the Car haul road should be opened sooner to  
give access from Poipu to Nemi. The Poipu Rd. is  
all ready overstayed; it should have 2 lanes on the  
right side with a left lane for those heading for  
Lawai. As it is now one can sit & wait for 10 to 20  
cars coming from Lihue, or crossing from Lawai, before  
one can turn left - and it holds up all traffic.  
Perhaps a 4 stop sign would work for the present - it  
should have been installed years ago.

3. And please add a trash pickup station in your project (I read where the Fed. Gov't has set aside money for it!) either next to your sewer plant, west of the Pacific Tropical Garden at Spouting Horn or, possibly, a small valley west of the Western Bypass Rd suggested by my son Pai.
4. The western Bypass Rd. should be built before 2006.
5. And last, please leave the Smith Ditch that crosses our land and yours in place as it does catch quite a bit of run off from the hill above. When the Bypass Rd. is built perhaps it will solve some of the drainage problems in the area. Who knows.

Copy to  
Kauai County Planning  
Dept.  
4444 Rice St.  
Site 473  
Ihuae Ni  
96766

Sincerely,  
Betsey Jordan  
(Elizabeth Knerdson Jordan)  
PO Box 666 Koloa  
Hi 96756  
Tel. (808) 332-8371

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Ms. Betsy Toulon  
P.O. Box 6666  
Koloa, Hawaii 96756

Dear Ms. Toulon:

Subject:       Kukui'ula Bay Resort  
              Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS), dated August 6, 1998. The following is a response to your comments:

1.     We concur that a larger lagoon area, such as we have proposed, may be more attractive to the water birds. Also, controlled access to defined pathways and viewing areas will allow visitors to view bird habitat without threatening wildlife. We feel that the lagoon will provide a good habitat for endangered water birds.
2.     We acknowledge your comments and suggestions regarding roadways. To address the Resort's impact upon roads, we prepared a Traffic Impact Analysis Report that was included as part of the SEIS.
3.     We will work with the Kauai County Department of Public Works in the planning for a new refuse transfer station in the region.
4.     The Western Bypass Road is planned to be constructed when the unit count of 1,738 units have been constructed and occupied at the Kukui'ula project.
5.     We acknowledge your concerns regarding Smith Ditch and agree that the Bypass Road will provide an opportunity for a permanent solution to drainage in that area.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell

Executive Vice President and Manager

**Gloria's**  
Spouting Horn Bed & Breakfast

4464 Lawai Beach Road • Koloa, Kauai, HI 96756  
(808) 742-6995 (phone/fax)

August 7, 1998

Kukui'ula Development Co.  
P.O. Box 3440  
Honolulu HI 96801

Attn: William H. Campbell

Subj: Kukui'ula Bay Resosrt  
Land Use Plan

NR WHC JY DYY FWH BEF  
LGS SAK  
BS MKV  
DY AUG 10 1998 JX  
MM TSY  
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RKS CC LNS VR DMS WDF

Gentlemen:

As residents in the immediate area of the proposed hotel, time share condos and lagoon/wetlands, we wish to make known our concerns about the project.

Most significantly, of course, we would be seriously impacted by having the proposed "Major Project Road," exit across from our property (Gloria's B&B). The location of this exit road would greatly diminish our quality of life and present a considerable traffic hazard.

Unless this exit road is relocated (perhaps further west beyond Spouting Horn Park) where it will not impact a residential area, we would not be in support of this development.

Further, we have concerns about the transformation of this residentially zoned neighborhood into a low-end visitor destination and the environmental impact this will have on our already crowded beach parks. The lagoon/wetland proposal will not deter our visitors from the beach and, as it is now, there isn't enough beach park for local resident and existing timeshare, condominium and hotel use.

As currently proposed, we cannot support this development.

Sincerely,

  
Gloria Merkle

  
Bob Merkle

cc: Kauai County Plannint Department  
Townscape Inc.  
Office of Environmental Quality Control

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Gloria's Spouting Horn Bed & Breakfast  
Gloria and Bob Merkle  
4464 Lawai Beach Road  
Koloa, Hawaii 96756

Dear Mr. and Mrs. Merkle:

Subject: Kukui'ula Bay Resort  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS), dated August 7, 1998.

The location of the Major Project Road's intersection with Lawai Beach Road at a location further west beyond the Spouting Horn Park is an alternative that can be considered when the Major Project Road is designed.

As planned, the Resort is expected to be a unique mid-priced visitor destination with garden theme. The large lagoon is expected to attract a number of endangered native Hawaiian water birds that can be viewed by visitors via trails and viewing stations that are planned around the lagoon. The lagoon provides a unique passive recreational amenity for visitors to the area. The Resort will also provide on-site amenities such as swimming pools and tennis courts for visitors.

The overall Kukui'ula Project, as addressed in the 1989 EIS, will include the development of a range of recreational amenities. These include an 18-hole golf course, a 15-acre archaeological park, historical preserves, active and passive parks, and open space areas. Pedestrian and bike paths are planned throughout the overall project along the major roadways. The number and diversity of recreational facilities planned will enhance the existing inventory of recreational facilities for residents as well as visitors to the area.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell

Executive Vice President and Manager



NB WHC JY DYY FWH BEF  
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DY AUG 10 1998 JX  
MM TSY  
RKS CC LNS VR DMS WDP

August 7, 1998

To Whom It May Concern:

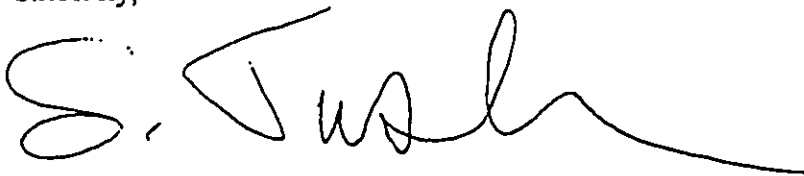
Regarding A & B proposal to develop property along Lawai Beach Road:

We vehemently oppose the new plan of 300 time share units. The South Shore is already saturated with time shares. Even if an alternate road is constructed, these new units will dramatically increase traffic along Lawai Beach Road which is a very narrow dead end street. The existing traffic at Lawai Beach Resort and Beach House Restaurant is extremely hazardous. This would only add to an already serious problem.

Also, if anything is built it should be a low rise complex, not something that will destroy the mountain views. Keep this a scenic area.

In closing the Comprehensive Zoning Ordinance of 1976 states clearly that this property is to be golf course and agriculture only. Please require A & B to adhere to the original plan.

Sincerely,



Steve Tusler  
4770 Lawai Beach Road  
Koloa, HI 96756

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Mr. Steve Tusler  
4770 Lawai Beach Road  
Koloa, Hawaii 96756

Dear Mr. Tusler:

Subject: Kukui'ula Bay Resort  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated August 7, 1998.

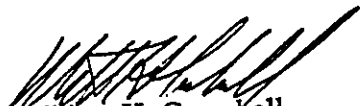
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The Resort is planned as a low-density development. Given the total acreage of the Resort (77-acres) and a unit count of 700 units (including lock-outs), the overall density of the site is about 9 units per acre. Units are planned in 2 to 4 story buildings. Additionally, the 100-foot building setback established along Lawai Road combined with the 20-acre lagoon provides a spatial separation between the Resort buildings. Landscaping within the Resort will further screen the buildings.

As indicated in the SEIS, the County currently designates the project site as "Urban Residential" on the County General Plan and over 700 acres of the Kukui'ula project have already been zoned for the development of single family residential, multi-family residential, commercial, business, parks, school, preserves and an 18-hole golf course. We are not aware of a 1976 ordinance that restricts the property to golf course and agricultural use only.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell

Executive Vice President and Manager

NG WHC JY DYY PWH BHF  
LGS SMK  
BS MKV  
DY AUG 10 1998 JX  
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RKS CC LNS VR DMS WDI

August 7, 1998

To Whom It May Concern:

Regarding A & B proposal to develop property along Lawai Beach Road:

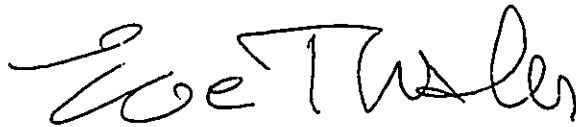
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Also, if anything is built it should be a low rise complex, not something that will destroy the mountain views. Keep this a scenic area.

In closing the Comprehensive Zoning Ordinance of 1976 states clearly that this property is to be golf course and agriculture only. Please require A & B to adhere to the original plan.

Sincerely,

Eve Tusler  
4770 Lawai Beach Road  
Koloa, HI 96756



**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Ms. Eve Tusler  
4770 Lawai Beach Road  
Koloa, Hawaii 96756

Dear Ms. Tusler:

Subject: Kukui'ula Bay Resort  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated August 7, 1998.

According to the Traffic Impact Assessment Report (TIAR), Lawai Road has the capacity to accommodate an additional 370 units. Thereafter, other roadways or improvements will be necessary to provide access to the Resort. The use of Lawai Road to access the Resort is one alternative available at this time. Ultimately, however, the Major Project Road will be the primary access to the Resort.

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Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager

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BS MKV  
DY AUG 1 0 1998 JX  
MM TSY  
SKM  
RKS CC LNS VR DMS WDF

August 7, 1998

To Whom It May Concern:

Regarding A & B proposal to develop property along Lawai Beach Road:

We vehemently oppose the new plan of 300 time share units. The South Shore is already saturated with time shares. Even if an alternate road is constructed, these new units will dramatically increase traffic along Lawai Beach Road which is a very narrow dead end street. The existing traffic at Lawai Beach Resort and Beach House Restaurant is extremely hazardous. This would only add to an already serious problem.

Also, if anything is built it should be a low rise complex, not something that will destroy the mountain views. Keep this a scenic area.

In closing the Comprehensive Zoning Ordinance of 1976 states clearly that this property is to be golf course and agriculture only. Please require A & B to adhere to the original plan.

Sincerely,



Donna Arnold  
4754 Lawai Beach Road  
Koloa, HI 96756

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Ms. Donna Arnold  
4754 Lawai Beach Road  
Koloa, Hawaii 96756

Dear Ms. Arnold:

Subject: Kukui'ula Bay Resort  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated August 7, 1998.

According to the Traffic Impact Assessment Report (TIAR), Lawai Road has the capacity to accommodate an additional 370 units. Thereafter, other roadways or improvements will be necessary to provide access to the Resort. The use of Lawai Road to access the Resort is one alternative available at this time. Ultimately, however, the Major Project Road will be the primary access to the Resort.

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As indicated in the SEIS, the County currently designates the project site as "Urban Residential" on the County General Plan and over 700 acres of the Kukui'ula project have already been zoned for the development of single family residential, multi-family residential, commercial, business, parks, school, preserves and an 18-hole golf course. We are not aware of a 1976 ordinance that restricts the property to golf course and agricultural use only.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager

NA WNC JY DTT FWM DEF  
LGS SAK  
BS MKV  
DY AUG 1 0 1998 JX  
MM TSY  
RKS CC LNS VR DMS WDP

August 7, 1998

To Whom It May Concern:

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In closing the Comprehensive Zoning Ordinance of 1976 states clearly that this property is to be golf course and agriculture only. Please require A & B to adhere to the original plan.

Sincerely,



Dev Arnold  
4754 Lawai Beach Road  
Koloa, HI 96756

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Mr. Dev Arnold  
4754 Lawai Beach Road  
Koloa, Hawaii 96756

Dear Mr. Arnold:

Subject: Kukui'ula Bay Resort  
Draft Supplemental Environmental Impact Statement

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Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager



NB WHC JY DYY PWH BEF  
LGS SMK  
BS MKV  
DY AUG 1 0 1998 JX  
MM TSY  
SKM  
RKS CC LNS VR DMS WDP

August 7, 1998

To Whom It May Concern:

Regarding A & B proposal to develop property along Lawai Beach Road:

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Also, if anything is built it should be a low rise complex, not something that will destroy the mountain views. Keep this a scenic area.

In closing the Comprehensive Zoning Ordinance of 1976 states clearly that this property is to be golf course and agriculture only. Please require A & B to adhere to the original plan.

Sincerely,



Cathy Dellinger  
4770 A Lawai Beach Road  
Koloa, HI 96756

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Ms. Cathy Dellinger  
4770A Lawai Beach Road  
Koloa, Hawaii 96756

Dear Ms. Dellinger:

Subject: Kukui'ula Bay Resort  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated August 7, 1998.

According to the Traffic Impact Assessment Report (TIAR), Lawai Road has the capacity to accommodate an additional 370 units. Thereafter, other roadways or improvements will be necessary to provide access to the Resort. The use of Lawai Road to access the Resort is one alternative available at this time. Ultimately, however, the Major Project Road will be the primary access to the Resort.

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As indicated in the SEIS, the County currently designates the project site as "Urban Residential" on the County General Plan and over 700 acres of the Kukui'ula project have already been zoned for the development of single family residential, multi-family residential, commercial, business, parks, school, preserves and an 18-hole golf course. We are not aware of a 1976 ordinance that restricts the property to golf course and agricultural use only.

Should you have any questions or additional comments and suggestions, please feel free to call me or Dan Yasui at 525-6611.

Yours truly,



William H. Campbell  
Executive Vice President and Manager

NB WHC JY DYY PWH BEF  
LGS SMK  
BS MKV  
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Sincerely,



4770 Don Hughes  
4754 Lawai Beach Road  
Koloa, HI 96756

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

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August 7, 1998

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4770 Lawai Beach Road  
Koloa, Hawaii 96756

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Sincerely,

*Alon Alonahugh*  
*4890 Lawai Beach Rd*  
*Koloa, Hi 96756*

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Mr. Don Donahugh  
4890 Lawai Beach Road  
Koloa, Hawaii 96756

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Sincerely,

Bea Donohugh  
4890 Lawai Beach Rd  
Koloa, HI 96756

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Ms. Bea Donahugh  
4890 Lawai Beach Road  
Koloa, Hawaii 96756

Dear Ms. Donahugh:

Subject: Kukui'ula Bay Resort  
Draft Supplemental Environmental Impact Statement

Thank you for your comments on the Draft Supplemental Environmental Impact Statement (SEIS) dated August 7, 1998.

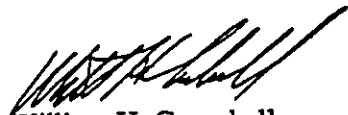
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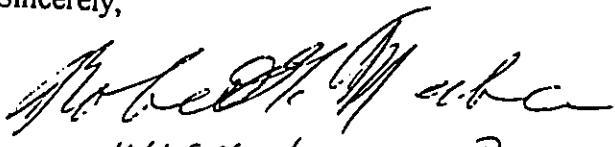
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Sincerely,

  
4464 Lawai Beach Rd  
Koloa HI 96756

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Mr. Robert Merkle  
4464 Lawai Road  
Koloa, Hawaii 96756

Dear Mr. Merkle:

Subject: Kukui'ula Bay Resort  
Draft Supplemental Environmental Impact Statement

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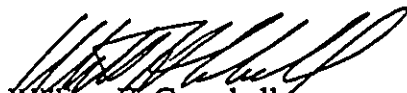
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Executive Vice President and Manager

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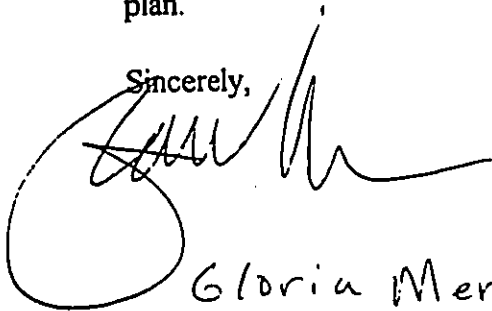
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Sincerely,



Gloria Merkle  
4464 Lawai Rd  
Koloa HI 96756

**KUKUI'ULA DEVELOPMENT COMPANY, INC.**

---

August 7, 1998

Ms. Gloria Merkle  
4464 Lawai Road  
Koloa, Hawaii 96756

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Executive Vice President and Manager

**APPENDIX A**

---

**Creating a New Coastal Wetland at Kukui`ula, Kauai**

**CREATING A NEW COASTAL WETLAND AT KUKUI'ULA, KAUAI**

*Prepared for*

**A & B Properties, Inc.**

by

William H. Magruder, Ph.D.  
464 Poipu Drive  
Honolulu, Hawaii 96825

Phone: 808-396-4151  
Fax: 808-396-0342  
E-mail: corial@lava.net

March 1998

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## 1. GENERAL INTRODUCTION.

As part of the Kukui'ula Phase I residential community, an extensive storm water drainage system was planned and designed by R. M. Towell and constructed by Goodfellow Brothers, Inc. The drainage system consists of a series of cutoff swales, ditches, and siltation basins that also provide for retention and detention of surface runoff water. Just inland from Kukui'ula Bay is the lowest siltation basin of the drainage system and is designated basin 30 in the R. M. Towell design and planning report. Basin 30 was originally planned to become a small boat harbor in Phase II, but for a variety of reasons, this is no longer feasible. As it presently exists, basin 30 is about 8 or 9 acres in size and is a fairly flat open area of mowed grasses, sedges and other plants. It infrequently becomes a pond of muddy water after heavy rainfall in the area and remains so for at least several weeks. In order to make this area more attractive and provide increased habitat for Hawaii's endemic endangered water birds, the feasibility of creating a more permanent wetland in basin 30 is examined in this report.

## 2. INTRODUCTION TO HAWAII'S COASTAL WETLANDS.

Probably no present coastal wetland in Hawaii is completely natural. As they are highly productive areas along the coastline, most if not all of them were extensively modified for wetland taro farming or fish ponds by Hawaiians long before European contact. Most if not all of them functioned as such until at least 1800, making all current coastal wetlands "natural" for at most 200 years. In addition, most existing wetlands have been extensively modified for a variety of reasons such as flood control in the last 200 years.

Coastal wetlands occurring "naturally" in Hawaii are highly varied but are often classified by the types of plants that grow in them. Most wetlands contain attributes of several wetland classifications and there is often no clear delineation between wetland types. For the purposes of this report, only permanent wetlands are considered. A marsh is a wetland that has predominately herbaceous species of plants such as grasses and sedges that emerge from at least the shallow water areas. A swamp is a wetland that has predominately woody species of plants such as large shrubs or trees. Marshes and swamps are further categorized by the salinity of the water in them and can be saltwater, brackish water, freshwater or a combination of these. Most Hawaiian coastal marshes have trees growing around their perimeter so that the marsh is surrounded by a swamp. The types of plants that grow in a Hawaiian coastal wetland and the suitability of a coastal wetland for wildlife habitat is largely determined by the depth of the water in the wetland and its salinity.

## 3. CREATING A COASTAL WETLAND AT KUKUI'ULA.

Given the current "green" and garden theme for the Kukui'ula development, the goal is to create a wetland at Kukui'ula that appears natural, is attractive and interesting, provides excellent water bird habitat, maintains its siltation basin capabilities and can be constructed and maintained with reasonable expense. The most appropriate wetland that could be created at Kukui'ula, and one that may have existed there 2000 years ago, is a freshwater to slightly brackish water coastal marsh with surrounding swamp area.



The reasons for selecting this type of wetland are, (1) it will look natural, (2) it will be visually attractive and interesting, (3) it will offer a variety of appearances from different locations, and (4) it will provide for the greatest amount and diversity of wildlife.

To make the wetland look and feel natural and provide for visitor enjoyment, it should have a sense of mystery, concealment, and strangeness while at the same time providing the opportunity for exploration and discovery. For its physical design, the outline of the pond should follow general elevation contours of the surrounding land. All existing straight shorelines and high angle uniform sloping edges must be hidden with vegetation, modified or eliminated. Also, the open central area of the wetland should be partially or completely hidden from view from most water level areas surrounding the wetland to provide the sense of mystery and concealment and also to provide privacy for wildlife. This can be done by establishing near shore plant species with sufficient height to obscure a clear view of the inner open water area. The near shore perimeter area that is constantly covered with water will be planted with large bulrushes that are rooted in the bottom and have leaves and stems that emerge up out of the water to overhead height. These will help control any shoreline erosion problems that would otherwise arise on the down wind edges of the wetland and they will also limit the growth of weedy species growing in from the waters edge. The dry land area immediately surrounding the water should have some swamp like areas planted with hau trees and/or large shrubs.

A trail should follow at least a part of the edge of the wetland on dry land and should pass through some areas of hau or milo thickets or other large shrubs and trees that are tall enough to form a tunnel for the path but not block views of the ocean from higher inland locations. Viewing areas will extend from the shoreline trail through the tall bulrushes and out into the marsh and each viewing area will offer a different perspective on the wetland and its wildlife. When visitors are walking along the trail they will not get a wide view of the open water, but only glimpses, hints, or sounds of what is there that will create an anticipation of what is in the center of the wetland. In traveling from the trail out through the tall shoreline vegetation to the viewing areas, the visitor will have a feel of going from one world to another. Their sense of mystery and concealment will end and they will discover a wonderful, unusual and interesting marsh world. Viewing areas such as platforms, kiosks or cross marsh walkways should be designed to be unobtrusive and blend in with the marsh habitat, not dominate it.

The central area of the marsh will be a combination of open deeper water, open shallow water, and islands and hummocks of various sizes and shapes covered mostly with low sedge, grass, and mat forming vegetation. The deeper areas of the inner wetland will likely be without vegetation, although depending on water salinity and clarity, totally submerged aquatic plants could grow, or water lilies or floating plants could grow. Several small to large islands as well as many small islets or hummocks should be included in the inner open area. The islands are necessary to provide refuge for water bird populations from predation and disturbance by cats, dogs and other animals as well as undisturbed nesting sites. At least some of them should be high enough to have dry areas when the water level in the wetland rises to its maximum storage level.

The most important wildlife feature of the wetland will be its birds. The kinds and numbers of bird present will be determined by the amount of suitable habitat and food.

In general, the more very shallow (less than 4 inches) open or semi open water habitat and the more edge area habitat between open water and islands or hummocks there is, the more foraging area for birds there will be and therefore, the more bird life there will be. The final design of the marsh should maximize these habitats. Islands should be long and narrow to provide a greater amount of edge area and also to appear natural. There should be many more small islands than large ones. This wetland should attract a variety of bird species as year round residents and as seasonal migrants. The four endangered endemic Hawaiian water birds (Hawaiian stilt, Hawaiian coot, Hawaiian moorhen, Hawaiian duck) were observed in the basin 30 area during February and March, 1998. Year round residents will likely also include the Black-crowned night heron, cattle egret, and perhaps feral ducks. A wide variety of seasonal and transient visitors should also find the Kukui'ula wetland a suitable place to inhabit.

#### 4. PLANTS FOR THE KUKUI'ULA COASTAL WETLAND.

Following the natural, green, and Hawaiian theme of the project, native plants should be used in and around the marsh as much as possible, although it is probably not practical or even possible to be fanatical about it. The native plants that grow in coastal marshes, and along the coastline in general, are indigenous native plants whose original ranges include many areas outside of Hawaii. Coastal marshes have few if any endemic native plants. There are a number of plants that grow in or around coastal marshes that have been accidentally or purposely introduced to Hawaii over the last 200+ years. Given the ease at which seeds and reproductive units are transported between wetlands by birds and other means, any plant that can grow in the marsh or along its edge will probably show up at some time. Some of these will enhance the Kukui'ula marsh, but some of them are troublesome weeds that will need to be controlled or eradicated.

Plant species that can grow in standing water are very specialized plants, and are adapted to a number of environmental conditions that prevent most plants from growing there. The number of species that grow in marshes, especially coastal marshes, is more limited than for most other types of habitat, but only a relatively few species are needed to create a natural appearing and functioning coastal marsh. Less than 12 species usually dominate the vegetation in any single coastal marsh in Hawaii. For the most part, the colors of marsh plants are going to be shades of green, so if colorful vegetation is desired, it will need to be planted on the dry land immediately surrounding the wetland.

The best way to establish plants at the Kukui'ula wetland is by a combination of planting and natural recruitment. It will probably be best to concentrate efforts on planting 4-8 desirable species that are likely to flourish in the wetland and provide the basic look of the wetland as well as habitat and food for birds. Planting a large wetland like the one planned at Kukui'ula will be a challenge. Growing them from seeds is possible, but the experience of others has been this is difficult, often doesn't work and when it does, requires much more time for the plants to form desired densities compared with transplanting portions of large plants. Better success has been obtained by taking soil from the bottom of an existing wetland and placing it on the bottom of the new wetland, but this is probably not possible in Hawaii and would likely result in the immediate introduction of undesirable weedy species that would need to be controlled. The plant

species needed, with the exception of water hyssop and taro are not and probably could not be available (at least in the quantity needed) from commercial nurseries in Hawaii, but even if they were, most attempts to use nursery raised wetland plants in created or restored wetlands have not been nearly as successful as transplanting portions of plants taken from existing wetlands. The best and only practical method of establishing the marsh vegetation is to harvest them from existing marshes on Kauai or elsewhere in Hawaii, and then transport them to Kukui'ula for immediate planting. Experience in wetlands created in other areas has shown a much higher survival rate of transplanted plants if they are planted in their new wetland within 24 hours of harvest from their old one. It is important to start planning for planting as soon as possible and it might be desirable to excavate a portion of basin 30 or use the basin just above (basin 14) as a marsh plant nursery to grow the desired marsh plants now for planting in the marsh when and as it is constructed. Many of the people in charge of maintaining public and private wetlands on Kauai, Oahu and Maui were very willing to let someone come in and remove some of their plants.

Initially, the problem will be to establish enough plants so the wetland will look natural. It will take a minimum of two years for the marsh vegetation to become well established and be attractive and probably 5 years for it to resemble a natural wetland. For the first 6 months to a year, it will likely be quite unattractive. At some time in the future, the vegetation will become too abundant, at which point, removal of some vegetation will be necessary to maintain the attractive appearance of the marsh and the diversity of bird life that is desired.

##### 5. PLANTS OF BRACKISH COASTAL MARSHES THAT CAN BE EXPECTED TO GROW IN A CREATED MARSH AT KUKUI'ULA.

The plants included here are those that can be expected to thrive in a slightly brackish water marsh such as could be constructed in the Kukui'ula siltation basin. Based on how they should be managed in the marsh, they have been separated into the following categories.

- (1) Species that should be planted in the marsh as soon after construction as possible. Diagram 1 shows generally where the various plant species should be planted in the marsh and surrounding area.
- (2) Species that need to be meticulously eliminated from the marsh if they appear on their own.
- (3) Species that should be allowed to grow in the marsh if they appear on their own.
- (4) Species that could be used for the area immediately surrounding the wetland.

While these plants can be expected to become dominant at the Kukui'ula marsh, for the first year or two of the marsh's existence, a great many different types of plants can be expected to appear along the waters edge and on the islands, especially if the water in the marsh has very low or no salinity.

Accepted scientific names follow the Manual of the Flowering Plants of Hawaii (Wagner, Herbst, and Sohmer, 1990). Other scientific names, common English names and Hawaiian names are also included in the text.

#### 5A. SPECIES THAT SHOULD BE PLANTED IN THE KUKUI'ULA MARSH.

Of these, one or both of the two large bulrushes are the most important plants to establish in the Kukui'ula marsh. They will provide the look and feel of the marsh and are also very important in controlling shoreline erosion that will occur from waves generated in the open water areas of the marsh by wind. Water hyssop and Bermuda grass should be planted as soon as possible to control shoreline erosion and limit the growth of other more weedy species until the bulrushes form dense shoreline thickets.

##### ***Bacopa monnieri*** Figures 1-3.

English name: Water hyssop.

Hawaiian name: 'Ae'ae

Status: Native indigenous. Present on Kauai. Found in nearly every tropical area of the world. Presently growing in the Kukui'ula settling basin in large amounts in the makai half of the basin where it forms light yellowish green mats.

Growth form: Herbaceous, low, creeping, mat forming plant to 8 inches high.

Perennial plant with inconspicuous small white light pink, light blue or light purple flowers. Occurs in coastal areas, commonly found in areas with slightly brackish water. Usually found in along the waters edge, or in other areas with continually damp soil. It can form dense floating mats out over deeper water. It can be mowed and is commonly cultivated as a ground cover in wet areas. Could be used much like grass along the edges of some areas of the marsh (or other water features) where open areas for viewing are desired. It will also grow quickly and provide shoreline erosion control until the large bulrushes become more established.

##### ***Bolboschoenus maritimus ssp. paludosus*** Figures 3-5.

Other scientific names: *Scripus maritimus*, *Scripus paludosus*.

English name: none?

Hawaiian name: Kaluha

Status: Native indigenous. Present on Kauai. Found in nearly every temperate and tropical area of the world. Presently growing in the settling basin at Kukui'ula, in one small low area about 15 ft by 10 ft near the green box on the weir that was previously used to house water level instrumentation.

Growth form: Emergent or continually wet soil perennial sedge, forms isolated clumps to large dense patches from 1.5-3 ft high.

Commonly used plant in created, restored or managed wetlands in North America and Europe. Roots are submerged, leaves grow up from submerged rhizomes (like the edible part of a ginger plant). Grows in a wide variety of fresh and brackish permanent and seasonal wetland habitats. In Hawaii, it is one of the first sedges to colonize a new habitat and sometimes a problem in near shore drainage ditches. It is an important food

source for a variety of birds and is often planted or managed on mainland waterfowl refuges.

***Colocasia esculenta*** Figures 6-8.

English name: taro.

Hawaiian name: kalo

Status: Polynesian introduction and now naturalized on most main Hawaiian Islands. Perhaps native to India, but widely cultivated and spread by humans such that original distribution is uncertain.

Growth form: Perennial herb with large leaves to 4 feet long, forms isolated clumps to large dense patches from 1.5-4 ft high.

Widely grown plant in Hawaii and elsewhere for its edible (after thorough cooking) leaves and "root". Grows in fresh but not brackish water. Can grow in water or in damp soil, depending on the variety. Several areas that are separated from the main marsh by dikes could be used to grow kalo in the manner of old Hawaii. An attractive plant with many varieties and leaf colors, early Hawaiians had an estimated 300 varieties of kalo. It may also be possible to grow kalo in the main marsh area, depending on the salinity of the water.

***Cynodon dactylon*** No picture.

English name: Bermuda grass.

Hawaiian name: manienie

Status: Recent introduction. Native to old world tropics, now found in nearly every temperate and tropical area of the world. Present at the Kukui'ula site as the most common grass on the sides of the basin.

Growth form: Creeping grass to 2 feet high.

This common lawn grass occurs as naturalized coastal wetland plant in Hawaii, and a distinctive robust form is abundant and in some places dominate in brackish marshes. Present and very common at the Kukui'ula site, already has the robust brackish marsh form there; would make an acceptable mowed grass at open areas of marsh or on dikes between taro ponds and main marsh. This grass can be used for shoreline erosion control until the large bulrushes become established.

***Cyperus laevigatus*** Figures 9-10.

Other scientific name: *Juncellus laevigatus*.

English name: none?

Hawaiian names: makaloo, makoloa, ehu'awa

Status: Native indigenous, found around to world in warm temperate and tropical areas. Occurs on most main Hawaiian islands.

Growth form: Emergent perennial sedge, forms isolated clumps to large dense patches.

An attractive dark green medium sized emergent or wet soil sedge, with thin stems 6 to 24 inches high growing from a creeping rhizome. Forms isolated clumps to larger

patches, mostly at the edges of brackish and freshwater coastal marshes. This species was and is the source of material for the finest Hawaiian weaving. The woven material is as flexible as cloth, and floor and bed covers, clothing, capes, cloaks, pa'u, and loin cloths were made from makaloa. A large makaloa mat was worn as a cloak by Kamehameha the Great.

***Schoenoplectus californicus*** Figures 2, 11-12.

Other scientific names: *Scripus californicus*, *S. tereticulmis*, *Elytrospermum californicum*.

English name: California bulrush.

Hawaiian name: Kaluha, 'aka'akai.

Status: Recent introduction?, native to warm temperate to tropical areas of the Americas and possibly an indigenous native in Hawaii.

Growth form: Very large perennial sedge from 5 to 12 feet high. In coastal areas, emergent in marshes and along the edges of ponds in water from a few inches to several feet deep.

This species is native to southern North America, Central America and northern South America. It is not certain if it is a native indigenous plant, generally believed to be introduced, but could also be native. In Hawaii, it forms dense thickets, mostly 6-12 feet high, in fresh and brackish water marshes and along the edges of ponds from sea level to 3,500 ft. In coastal marshes and ponds, it is mostly found in areas that are continually covered with water although along the edges of marshes and ponds it can grow up into soil that is continually wet but not submerged. It has stems that are triangular in cross section. It is an aggressive plant and usually shades out all other aquatic plants in its dense thickets. It grows in water from a few inches to several feet deep. In some areas it has nearly closed off open water, such as Kawainui marsh on Oahu by forming large floating patches that are not rooted in the bottom soil, but float on the surface.

It is a long lived perennial plant with creeping thick roots (rhizomes, similar to ginger root). Estimates of growth rates are that it can expand its area by 1 to 3 feet per year, at least in shallow water of 0-1.5 feet deep. This bulrush is very similar to *Schoenoplectus lacustris* in both appearance and growth habit. There is some question as to whether either of them is native to Hawaii, but *Schoenoplectus lacustris* is more likely native, but both of them could be native or recent introductions. The first choice for a large bulrush at the Kukui'ula marsh should be *S. lacustris*, but *S. californicus* would serve the same function and provide similar appearance and wildlife habitat. Based on my observations, this species is probably tolerant of higher salinities than *S. lacustris*, and for this reason, it may be a better species to plant at Kukui'ula.

***Schoenoplectus lacustris*** Figures 13-15.

Other scientific names: *Scripus lacustris* ssp. *validus*, *Scripus validus*.

English names: Great bulrush, soft bulrush.

Hawaiian names: 'aka'akai, neki, nanaku, aka'akai naku, kaluha, naku.

**Status:** Native indigenous, widely distributed in North and South America, Australia, southern Asia and many Pacific Ocean islands. Believed by many botanists to be an indigenous native plant of the Hawaiian Islands, but some believe it to be introduced.

**Growth form:** Very large sized perennial sedge from 3 to 8 feet high. In coastal areas, emergent in marshes and along the edges of ponds in water from a few inches to several feet.

In Hawaii, it forms dense thickets, mostly 3-8 feet high, in fresh and brackish water marshes and along the edges of ponds from sea level to 3,500 ft. It has stems that are circular in cross section. In coastal marshes and ponds, it is mostly found in areas that are covered with water nearly every day, although along the edges of marshes and ponds it can grow up into soil that is continually wet but not submerged. It is an aggressive plant and usually shades out all other aquatic plants in its dense thickets. This makes it very useful in controlling weedy species along the edge of the marsh such as California grass. It grows in water from a few inches to several feet deep. It is a long lived perennial plant with creeping thick roots (rhizomes, similar to ginger root). Estimates of growth rates are that it can extend its area by 1 to 3 feet per year, at least in shallow water of 0-1.5 feet deep.

This is a desirable plant for the Kukui'ula marsh for several important reasons. It is a native plant, it is an attractive marsh plant, it should grow well there, it provides excellent wildlife habitat and is an important food source (seeds, shoots, rhizomes) for a variety of waterfowl and other animals. Its dense thickets will promote sediment settling, and this plant has been shown to effectively reduce nutrients and other pollutants from the water.

This species and/or *Schoenoplectus californicus* should be an important and abundant component in the Kukui'ula marsh. Growing from seeds could be done but is difficult and would require a considerable time to obtain large plants. Transplanting its rhizomes (thickened roots) in small or large pieces, with or without stems, from other marshes and planting them in the appropriate shallow water areas (like planting kalo or taro) is the best method of introducing it to the Kukui'ula marsh.

#### 5B. SPECIES TO ACTIVELY ERADICATE AT THE KUKUI'ULA MARSH.

The following species need to be eradicated if they appear at the Kukui'ula marsh. These species are vigorous and aggressive weedy plants that can quickly degrade the appearance and function of a marsh and should be quickly controlled or their removal will likely become a large and costly task.

##### ***Batis maritima*** Figures 16-17.

English names: pickleweed, saltwort.

Hawaiian name: akulikuli kai

Status: Non-native, first reported in mid 1800's. Naturalized on Kauai. Native to coastal tropical regions of the Americas and Galapagos Islands. Now naturalized in salt marshes and other nearshore salty environments on all main

Hawaiian Islands. Not observed at Kukui'ula, but is abundant at salt pond area of Port Allen.

Growth form: Perennial, forms loose spreading to upright mats, 2-36 inches thick.

The most salt tolerant flowering plant in Hawaii. Forms extensive dense populations at nearly all wetlands with high salinities, typically those on dry sides of the Hawaiian Islands which would include the Kukui'ula area. Often the only plant growing near the shore of high salinity areas. Can survive straight seawater or even hypersaline water for a time, but will only grow in brackish or fresh water. Grows only in areas that are not continually submerged. Probably not the best for wildlife habitat and it should not be purposely introduced, although it may arrive on its own and may need to be controlled, depending on the salinity characteristics of the marsh. The presence of this plant in any large amount would indicate too high a salinity in the marsh water and the water would need to be adjusted to a lower salinity. Has an distinctive and slightly unpleasant odor.

***Brachiaria mutica*** Figures 18-19.

English name: California grass.

Hawaiian name: none?

Status: Introduced 1920's. Present on Kauai and often a problem along ditches and waterways. Found in nearly every tropical area of the world, original distribution uncertain, probably Africa. Present at Kukui'ula in the settling basin and also in the upper basin.

Growth form: Coarse perennial grass that forms spreading, dense mats to 3 feet high.

Usually found growing in areas of very high soil moisture or near open water. Very aggressive growth, can form extensive floating mats over open water and has completely covered open water areas in many coastal marshes in Hawaii. The upper basin (basin 14) at Kukui'ula is nearly full of California grass and it is also common in the large settling basin. This grass must be vigorously and relentlessly controlled and eliminated when found, it is capable of growing over much of the Kukui'ula marsh if allowed to grow freely, especially before the other more desirable marsh plants have a chance to become established. This grass can quickly become a large and expensive removal problem. **California grass will probably be the most difficult problem weed in the marsh for at least the first year.** It will likely be less of a problem after the bulrushes become well established along the edges of the marsh.

***Eichhornia crassipes*** Figure 20

Other scientific name: *Pontederia crassipes*.

English name: Water hyacinth.

Hawaiian name: none.

Status: Recent introduction in late 1800's, now naturalized on most main Hawaiian Islands including Kauai. Native to tropical Americas, but now widely found around the world in temperate and tropical regions.

Growth form: Free floating perennial herb, forms dense masses to two feet high that float on the water.



A very fast growing weedy species with violet flowers and masses of black roots. It can completely clog waterways, including ponds and slow moving streams. Considered a serious pest in many places including Hawaii. It is a commonly used plant in wetlands or ponds created for waste water treatment. Primarily found in freshwater, but can grow in slightly brackish water. While usually free floating, it can sometimes root in the bottom in shallow water. This species should not be planted at Kukui'ula and if it appears, should be quickly eradicated or it could quickly become a serious problem and completely cover all open water areas of the Kukui'ula marsh.

***Pistia stratiotes*** Figure 21.

English name: Water lettuce.

Hawaiian name: none.

Status: Recent introduction in the 1930's, now naturalized on most main Hawaiian Islands including Kauai. Probably native to tropical areas of Africa and Asia, now found around the world.

Growth form: Free floating perennial herb, forms dense masses that float on the water.

A fast growing weedy species that can completely clog waterways, including ponds and slow moving streams. Considered a serious pest in many places including Hawaii. Primarily found in freshwater, but can grow in slightly brackish water. While usually free floating, it can sometimes root in the bottom in shallow water. This species should not be planted at Kukui'ula and if it appears, should be quickly eradicated or it could quickly become a serious problem and completely cover all open water areas of the Kukui'ula pond.

***Pluchea indica*** Figure 22.

Other scientific name: *Baccharis indica*.

English names: Indian fleabane, sourbush.

Hawaiian name: none.

Status: Recent introduction (1915), native to India and southern Asia.

Growth form: small or medium shrub to 6 or 8 feet tall.

Common and aggressive weed of the damp margins of coastal marshes and other brackish areas in Hawaii where it sometimes forms dense thickets. This species will certainly arrive at the Kukui'ula marsh site on its own and should be eradicated regularly when it does. A related species, *P. symphytifolia*, with larger gray leaves, is also sometimes a problem as are hybrids between the two species.

***Rhizophora mangle*** Figures 23-24.

English name: Red mangrove.

Hawaiian name: None.

Status: Recent introduction (1902), native to the Caribbean area and South America.

**Growth form:** Large shrub to 35 ft high trees with conspicuous stilt roots, often forms impenetrable thickets.

The red mangrove has become a serious weed and problem tree in many wetlands in Hawaii. Recent efforts to restore Hawaiian wetlands have been forced to remove large amounts of this mangrove at great effort and cost. Once they are established, it is difficult and expensive to get rid of mangroves therefore it is important to eliminate them when they are small and few. Several small red mangroves are presently growing in the mud at the Poipu end of the tidal pond at Kukui'ula.

***Typha sp.* Figure 25.**

**English name:** cattail.

**Hawaiian name:** None.

**Status:** Recent introduction (1939), widely distributed in temperate and tropical areas around the world.

**Growth form:** Emergent water plant mostly 3-8 feet tall, can form dense thickets in shallow water.

Resembles the large bulrushes at a distance, but has flat leaves. Not a common marsh plant in Hawaii, but has become a problem in a few places. Occasionally found in brackish water. Eradicate if present at Kukui'ula.

**5C. SPECIES THAT MAY ARRIVE ON THEIR OWN AND SHOULD BE ALLOWED TO GROW IN THE MARSH.**

The following species should be allowed to grow in the marsh area if they arrive on their own. These species would be an asset to the marsh environment if they appear, but they are not so important as to require planting. They do not usually grow so rapidly as to create large problems in established Hawaiian marshes.

***Eleocharis geniculata* Figure 26.**

**Other scientific names:** *Scirpus geniculatus*, *S. caribaeus*, *E. caribaea*, *E. capitata*.

**English name:** Spike rush.

**Hawaiian names:** Kohēkohe, pipiwai.

**Status:** Recent introduction around 1900, now naturalized on Kauai, Oahu, and Molokai. Native to many tropical areas around the world.

**Growth form:** Small emergent annual sedge from 3 to 12 inches high.

Attractive dark green sedge that forms isolated clumps or larger patches in very shallow water near marsh or pond edges or wet ground. It can be found in freshwater and brackish coastal marshes and will probably show up at Kukui'ula, but since it is an annual, it should probably not be deliberately planted. It should be allowed to remain and not be eradicated if it appears.

***Fimbristylis cymosa*** No picture, very similar to *Pycerus polystachyos* Figs. 31-32.

Other scientific names: *F. atollensis*, *F. pycnocephala*, *F. spathacea*.

English name: None.

Hawaiian names: Mau'u, 'aki'aki.

Status: Native indigenous, native to many tropical areas of the Americas, Pacific Islands, and Australia.

Growth form: Small to medium sized perennial sedge from 5 to 20 inches high. Can be emergent or growing in damp soil.

Attractive dark green sedge that forms isolated clumps or larger patches in very shallow water near marsh or pond edges or wet ground. It can be found in freshwater and brackish coastal marshes and may show up at Kukui'ula. It should be allowed to remain and not be eradicated if it appears.

***Mariscus javanicus*** Figure 27.

Other scientific name: *Cyperus javanicus*.

English name: Marsh cyperus.

Hawaiian names: "ahu'awa, ehu'awa.

Status: Native indigenous, native to many tropical areas Africa and Asia.

Growth form: Medium sized perennial sedge from 2 to 4 feet high. Can be emergent from shallow water or grow in continuously damp soil.

Attractive sedge that forms isolated clumps or larger patches in very shallow water near marsh or pond edges or continuously wet ground. It can be found in freshwater and brackish coastal marshes and should be considered a species for planting. It also may show up at Kukui'ula on its own and should be allowed to remain and not be eradicated if it appears. It is somewhat similar in appearance to another somewhat larger species of sedge often planted as an ornamental in Hawaii, *Cyperus alternifolius*, the umbrella plant, or 'awa'awa-haole (Figure 28). *Cyperus alternifolius* may also show up on its own at the Kukui'ula marsh and should be allowed to remain.

***Nymphaea sp.*** Figure 29.

English name: Water lily.

Hawaiian name: lilia lana I ka wai

Status: Recent introduction. Now naturalized in Hawaii as well as an ornamental.

Growth form: Aquatic herb rooted in the bottom with large (1 foot across) floating leaves and nice flowers in many colors, red, pink, yellow, white, blue, purple.

A common ornamental water plant in Hawaii and many other places. It is naturalized in some coastal marshes, but does not grow in brackish water, but could possibly grow in the taro pond areas at Kukui'ula or in the main marsh depending on its salinity.

***Paspalum vaginatum or disticum*** Figure 14.

Other scientific name: Very similar to *P. disticum* and some believe them to be synonymous.

English names: Seashore paspalum, saltgrass, knottgrass, knottweed.  
Hawaiian name: None?  
Status: Recent introduction (1936). Present on Kauai. Now so widely found in coastal areas of nearly every warm temperate and tropical region of the world that the original distribution is not known.  
Growth form: Creeping, wiry perennial grass to 18 inches high.

Very common grass that can form large meadows in shallow salt or brackish coastal marshes and on mud flats or sand bars. In certain habitats, it can be the only plant present over large areas.

***Pycerus polystachyos*** Figures 30-31.

Other scientific name: *Cyperus polystachyos*  
English names: none?  
Hawaiian names: none?  
Status: Native indigenous. Present on Kauai and presently very common in the settling basin at Kukui'ula.  
Growth form: 20-50 cm high, basal tuft of leaves, flowers on elongated stalk.

A very common small perennial sedge in Hawaii and many other tropical and subtropical regions of the world. Common on open or grassy areas, often in disturbed areas. This is presently the most common clump forming small sedge in the settling basin and also the long basin behind the road. It is attractive and provides food for wetland birds and others. Because of the large populations already present, it will almost certainly grow on its own in the marsh and should be allowed to do so

***Ruppia maritima*** No picture.

English names: sea tassel, widgeon grass, ditch grass.  
Hawaiian name: none?  
Status: Native indigenous. Present on Kauai. Found in nearly every temperate and tropical area of the world.  
Growth form: Completely submerged grass-like plant, to 3 feet long, .

Common submerged plant of brackish water ponds fish ponds, streams and estuaries. The entire plant remains submerged except during low tide in areas with tidal influence. This is one species that may show up in the deeper pond areas, but only if the water clarity is high and improves over what it would likely be now.

***Sesuvium portulacastrum*** Figure 32.

Other scientific names: *Portulaca portulacastrum*, *Trianthema portulacastrum*.  
English name: sea purslane.  
Hawaiian names: 'Akulikuli.  
Status: Native indigenous, widely distributed in tropical areas around the world, presently growing in the settling basin at Kukui'ula in small numbers.  
Growth form: Low spreading succulent plant usually less than 6 inches high.

Sea purslane grows along the shore of brackish coastal wetlands, not a plant that usually grows in the water, but rather along the shore in salty areas. Can withstand very high salinities. Many areas that are now dominated by pickleweed were probably once dominated by this species. Not really a marsh plant, but included here because a few plants are presently growing in the lower part of the Kukui'ula settling basin.

***Sporobolus virginicus*** Figure 33.

Other scientific name: *Agrostis virginica*.

English names: Seashore rushgrass, beach dropgrass, saltgrass.

Hawaiian names: 'Aki'aki, 'aki, mahiki, hahikihiki, manienie, manienie 'aki'aki.

Status: Native indigenous, widely distributed in sandy coastal areas in subtropical and tropical areas around the world.

Growth form: Perennial grass to 1 foot tall.

Usually grows in sandy areas at the back of beaches, but occasionally is found in coastal marshes.

**5D. PLANTS FOR USE AROUND THE KUKUI'ULA MARSH.**

The following species can be used to plant the land areas around the edge of the marsh, many are native indigenous or Polynesian introduced plants that have some Hawaiian story connected to them. All of them are vigorous growing plants that should thrive in the environmental conditions surrounding the marsh at Kukui'ula with minimum maintenance. The first choice for a brackish water tolerant turf grass is Bermuda grass. Hau trees should be planted along the edge of certain areas of the marsh, and naupaka should be planted along the edge of the marsh in other areas. The shading of the marsh edge by hau and naupaka will greatly reduce the occurrence of problem weedy species such as California grass becoming established at the marsh edges. Initially, it is probably best to have the more ornamental plants occur in the other water features of the development. If at some point it is desired to have colorful plants in the marsh area, a variety of attractive ornamental plants such as gingers and heliconias should do well near the marsh area.

**Lawn**

***Cynodon dactylon***, Bermuda grass

Low ground cover.

***Ipomea pes-caprae***, Beach Morning Glory.

***Vigna marina***, Beach Pea.

**Shrubs.**

***Scaevola sericea***, Naupaka. Figures 34-35.

Trees.

*Hibiscus tiliaceus*, Hau. Figures 36-37.

*Thespesia populnea*, Milo.

*Pandanus tectorius*, Hala, screw pine.

*Barringtonia asiatica*, Fish Poison tree.

*Aleuertes moluccana*, Kukui nut

*Cordia subcordata*, Kou,

*Cocos nucifera*, Coconut, Niu

5E. WETLAND PLANTS OBSERVED AT SILTATION BASIN 30, FEB-MAR, 1998.

*Bacopa monnieri*, water hyssop

*Bolboschoenus maritimus* ssp. *paludosus*, makai, kaluha

*Cynodon dactylon*, Bermuda grass

*Pycerus polystachyos*

*Sesuvium portulacastrum*, sea purslane

*Brachiaria mutica*, California grass



Figure 1. *Bacopa monnieri* close up



Figure 2. *Bacopa monnieri* maintained as closely trimmed ground cover in the foreground and growing out over the water as a floating mass in the background. The large bulrush is *Schoenoplectus californicus*. Oahu Club, Hawaii Kai, Oahu.

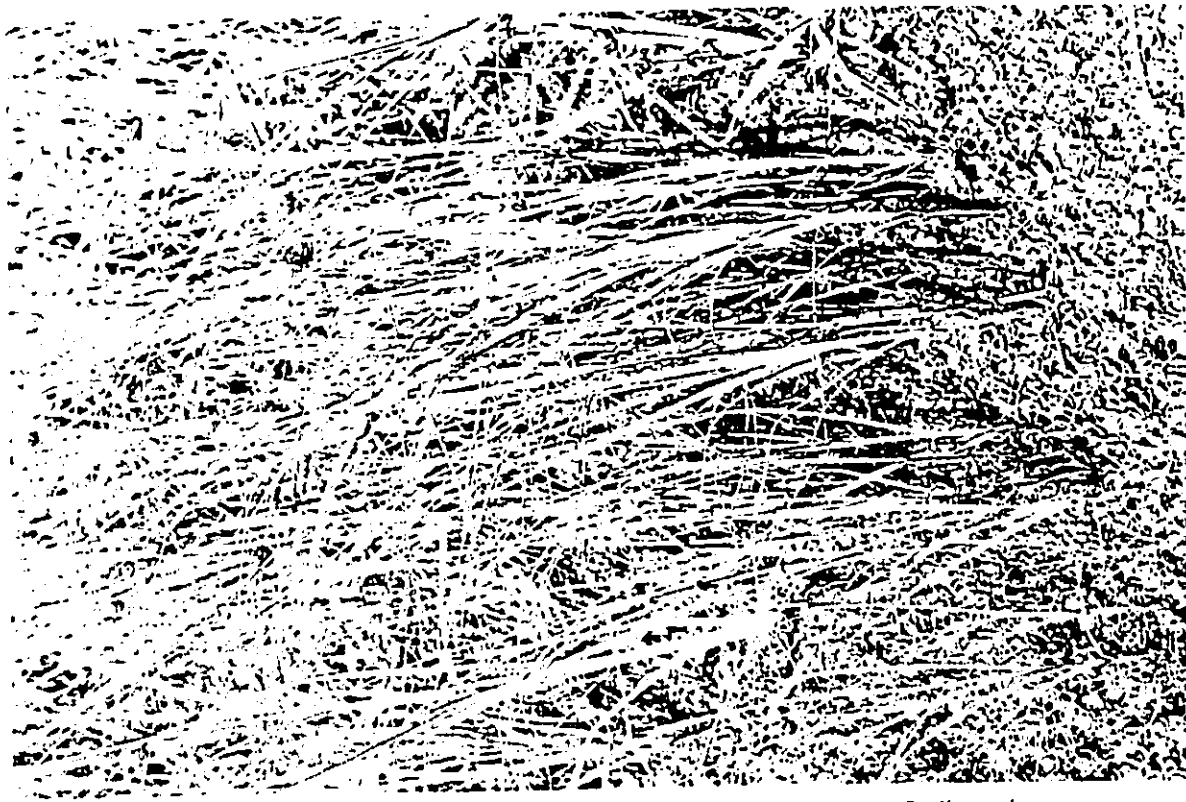


Figure 3. *Bacopa monnieri* growing as a thin mat on the ground. *Bulboschoenus maritimus* ssp. *paludosus* forming a "grassland" like stand. Settling basin at Kukui'ula, Kauai.

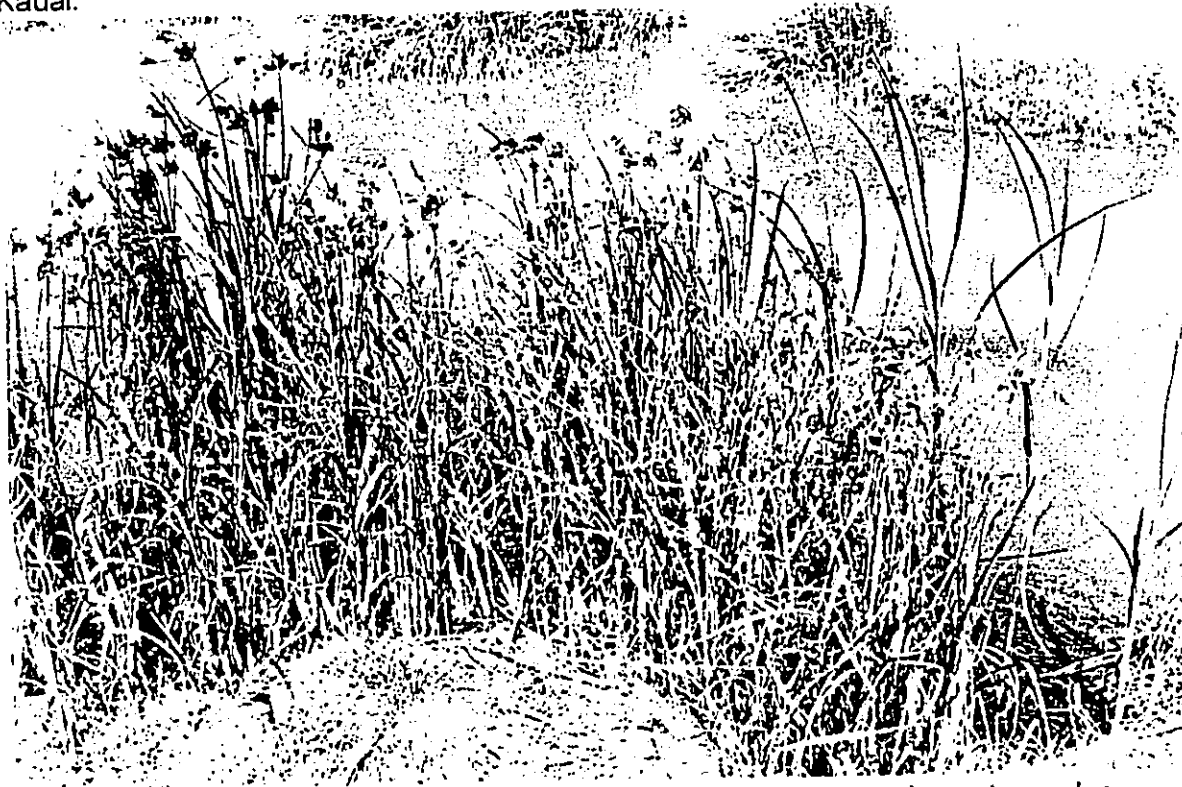


Figure 4. *Bolboschoenus maritimus* ssp *paludosus* growing along the waters edge, Kanaha Pond, Maui.





Figure 5. *Bolboschoenus maritimus* ssp. *paludosus* growing in dense patches. Channelized stream on Maui, near its mouth.



Figure 6. *Colocasia esculenta* or taro growing in semi-wild state. Near the north end of Kaneohe Bay, Oahu.



Figure 7. *Colocasia esculenta* or taro in an ornamental pond at Moanalua Gardens, Oahu.

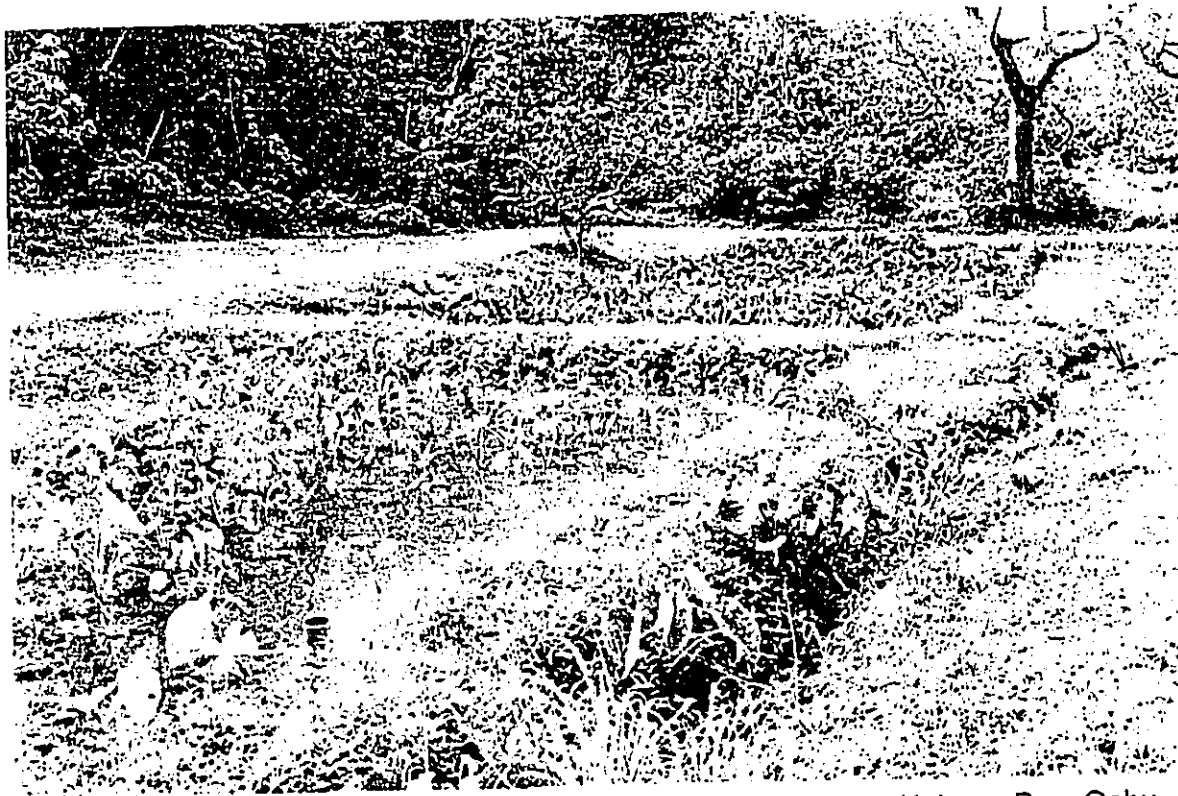


Figure 8. *Colocasia esculenta* or taro in an agricultural pond near Kahana Bay, Oahu.

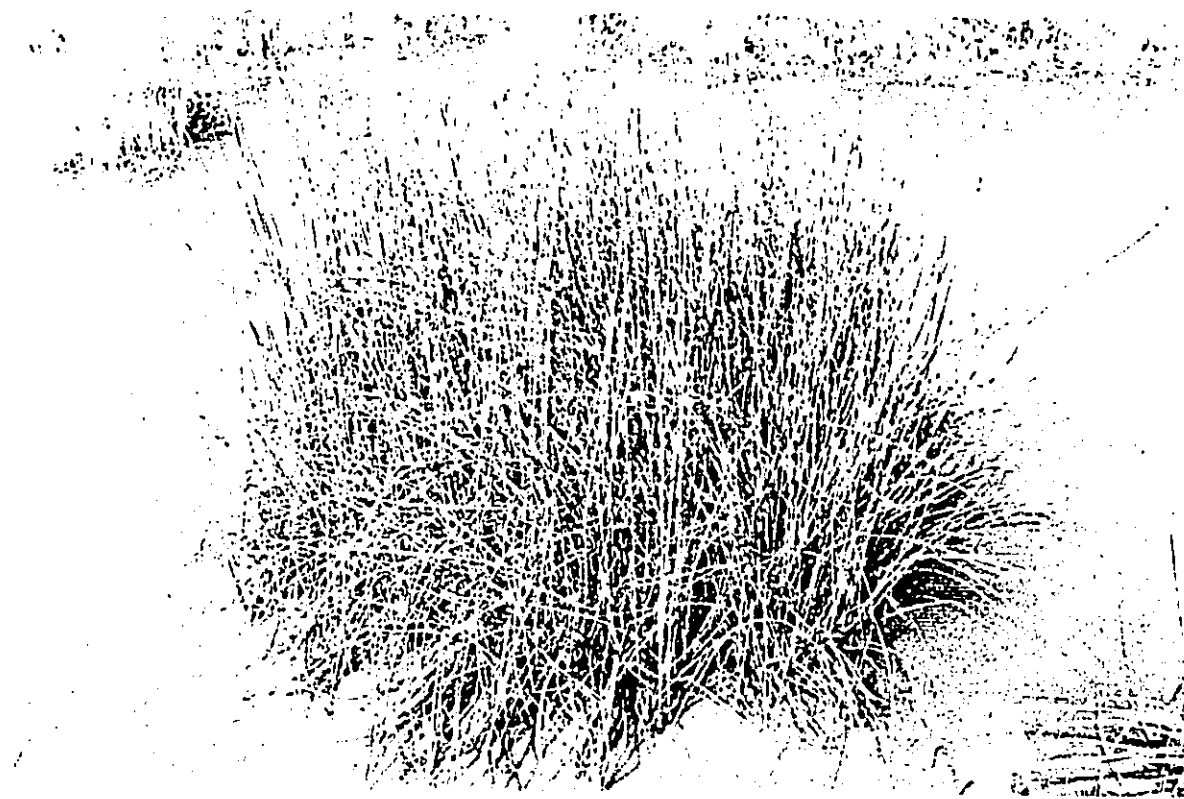


Figure 9. *Cyperus laevigatus* or makaloa growing in a clump at Kanaha Pond, Maui.



Figure 10. *Cyperus laevigatus* or makaloa growing as isolated clumps and along the edges of small islands, Kanaha Pond, Maui.



Figure 11. *Schoenoplectus californicus* growing in a dense stand at the Oahu Club, Hawaii Kai, Oahu. The floating plant in the foreground is *Bacopa monnieri* or water hyssop.



Figure 12. *Schoenoplectus californicus* or California bulrush forming a dense stand along the far shoreline of Kanaha Pond, Maui.

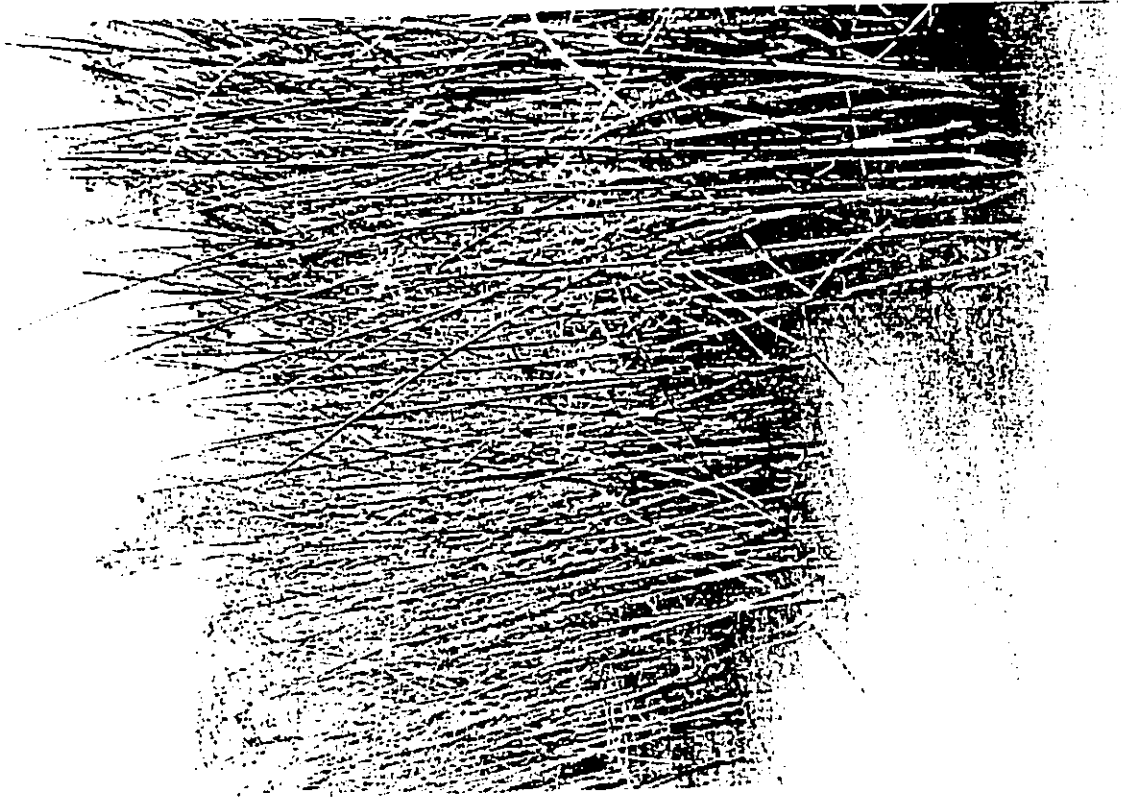


Figure 13. *Schoeoneplectus lacustrus* or giant bulrush growing in a pond near Kahana Bay, Oahu.

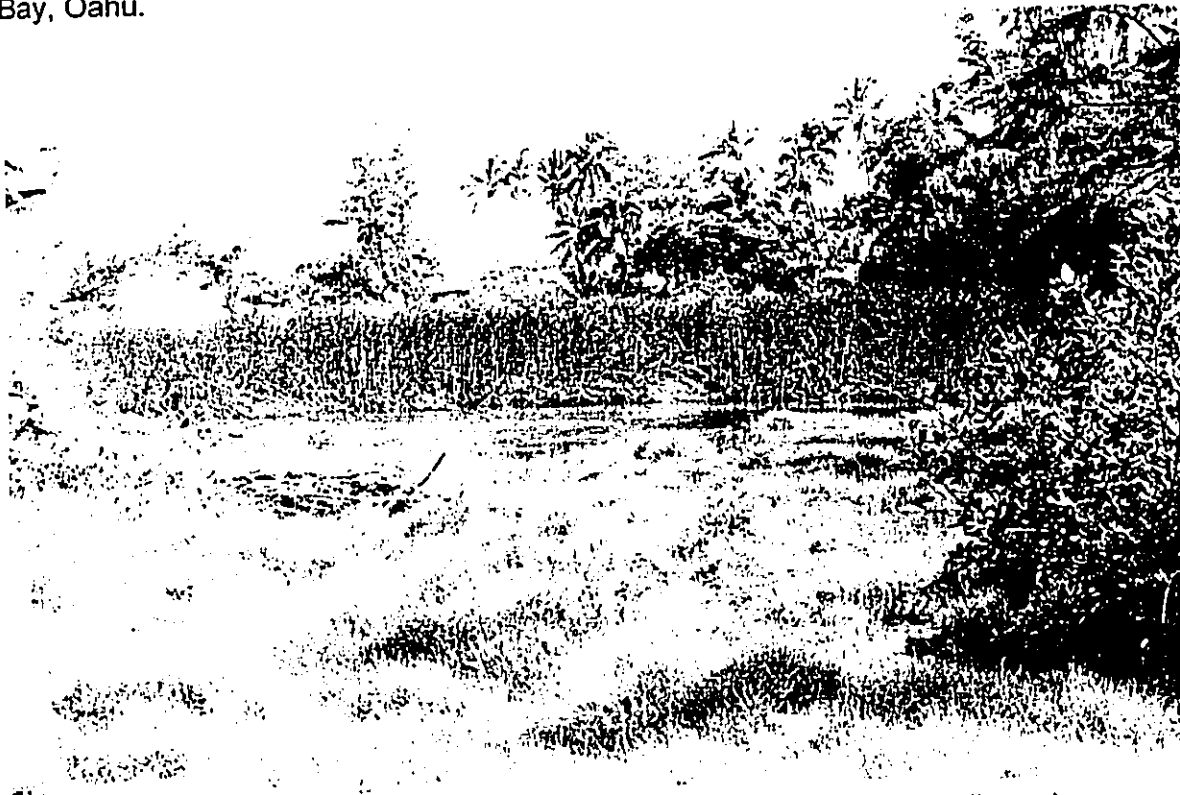


Figure 14. *Schoeoneplectus lacustrus* or giant bulrush growing in a small pond near Kahana Bay, Oahu. The grass in the foreground is *Paspalum vaginatum*.



Figure 15. *Schoenoplectus lacustrus* or giant bulrush growing in a completely covered marsh area near the north end of Kaneohe Bay, Oahu.

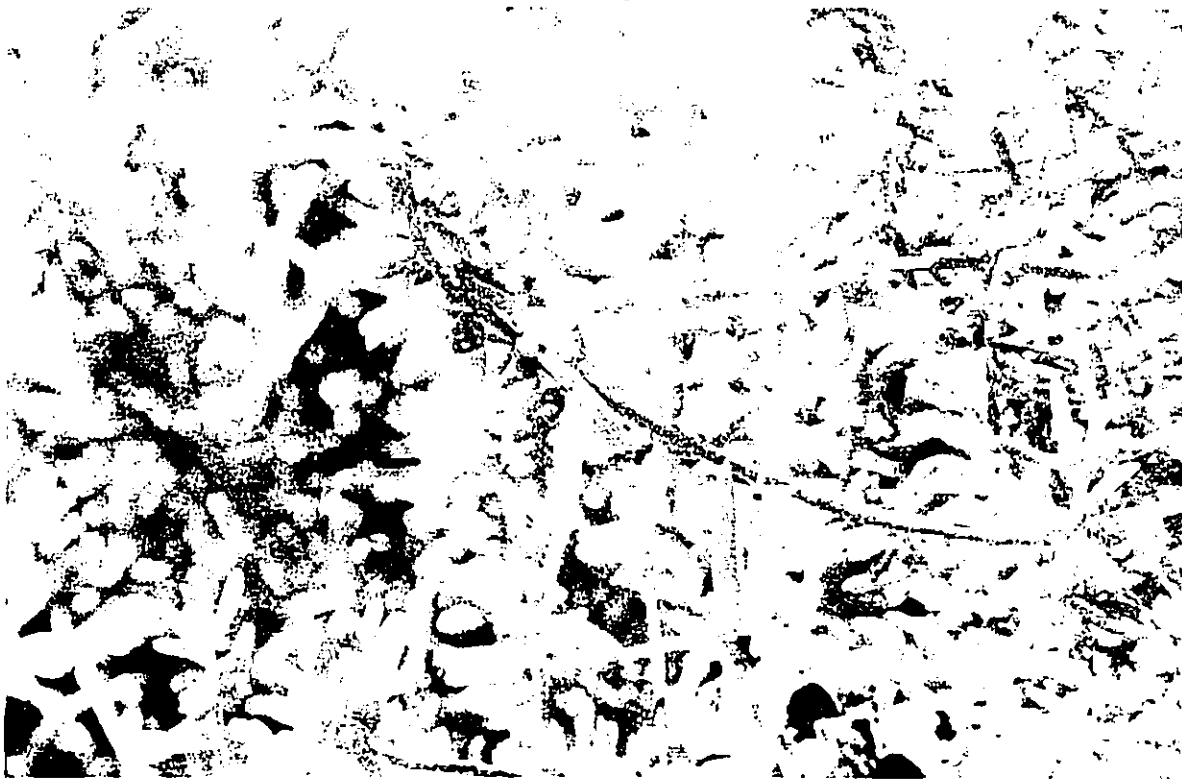


Figure 16. *Batis maritima* or pickleweed growing along the shore of Maunalua Bay, Oahu. Notice the swollen leaves resemble pickles.

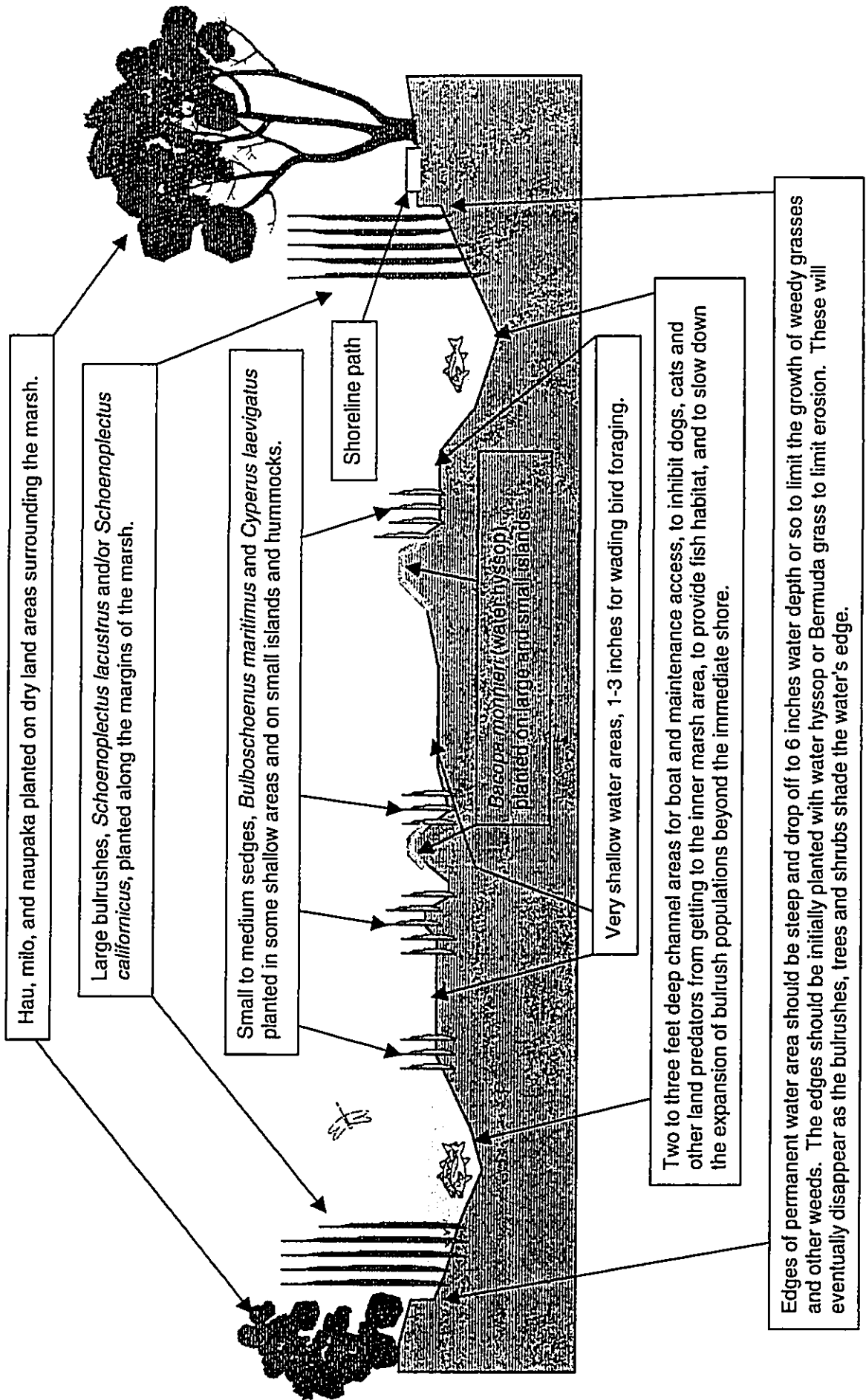


Diagram 1. Diagrammatic cross section of the Kukui'ula marsh design showing locations of plantings.



Figure 17. *Batis maritima* or pickleweed growing around the edge of a red dirt salt flat, near Port Allen, Kauai.



Figure 18. *Brachiaria mutica* or California grass growing along the edge of the Quarry Pond, University of Hawaii, Manoa campus, Oahu.



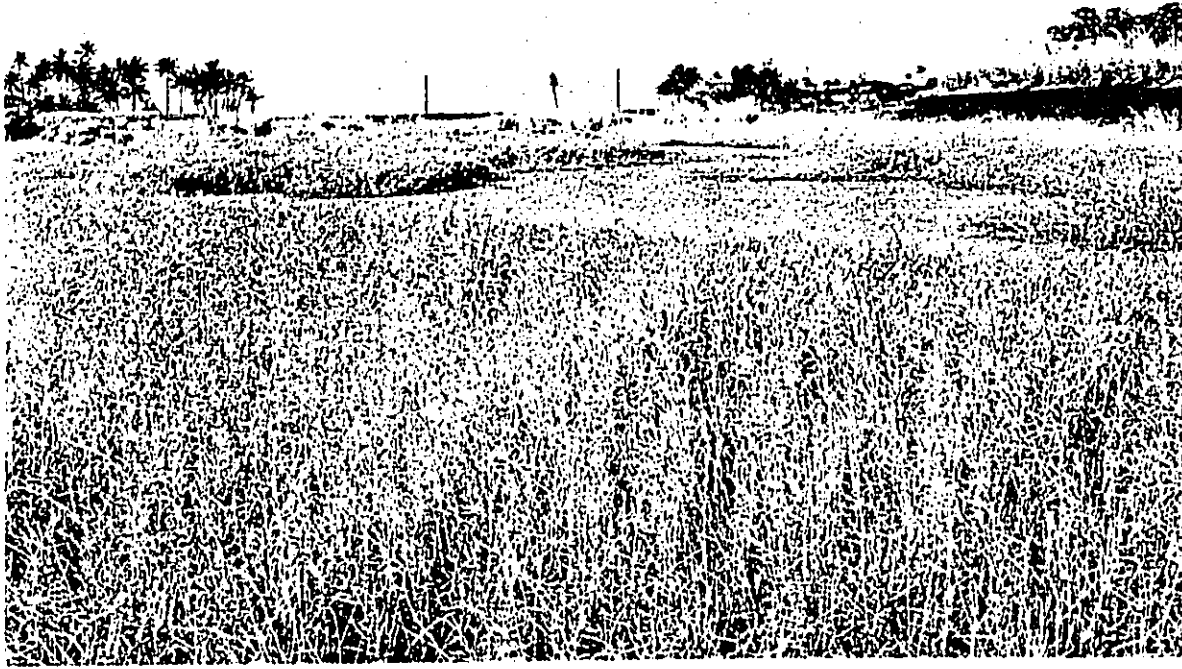


Figure 19. *Brachiaria mutica* or California grass growing in the upper basin (basin 14) at Kukui'ula, Kauai.

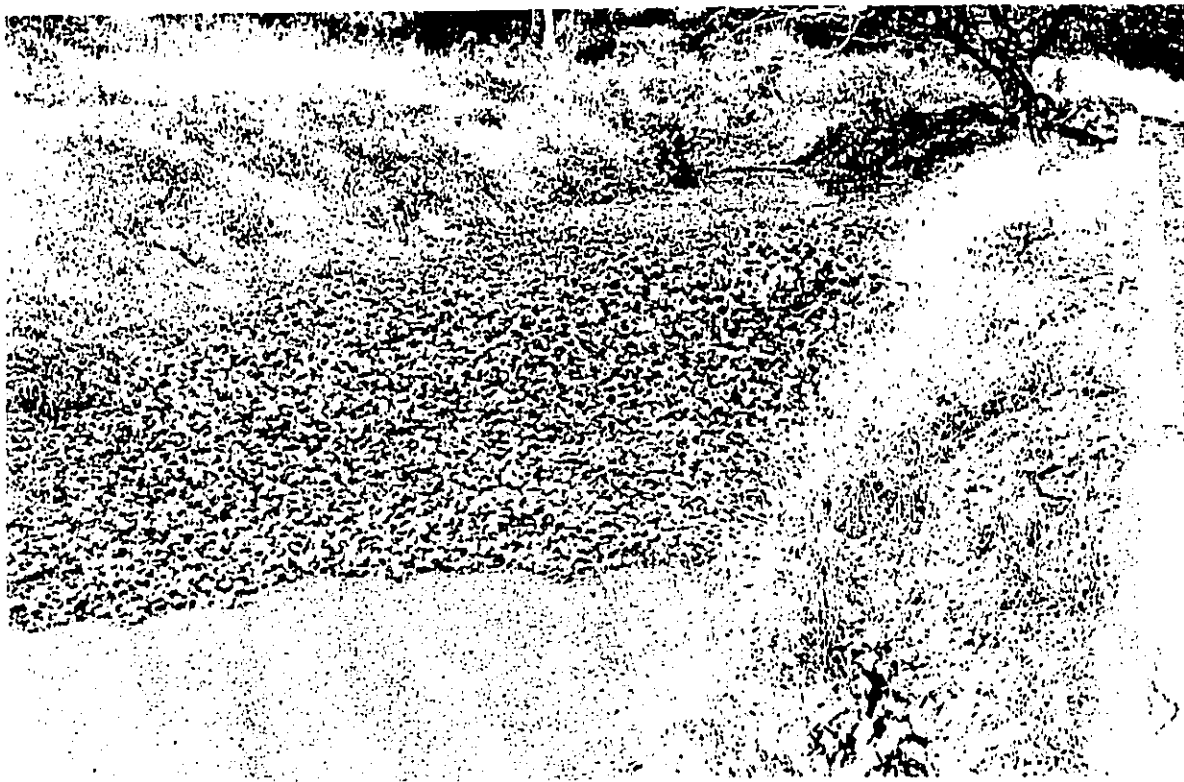


Figure 20. *Eichhornia crassipes* or water hyacinth choking a ditch at the back of Kawainui marsh, Kailua, Oahu.



Figure 21. *Pistia stratiotes* or water lettuce growing in an open waterway in Kawainue marsh, Kailua, Oahu.



Figure 22. *Pluchea indica* or Indian fleabane growing along the edges of the pond near the Oahu club, Hawaii Kai, Oahu.



Figure 23. *Rhizophora mangle* or red mangrove. Two small plants growing at the back of the tidal basin, Kuku'i'ula, Kauai.



Figure 24. *Rhizophora mangle* or red mangrove. Salt water tidal wetland near Queens Beach, southeastern Oahu.



Figure 25. *Typha* sp. or cattail, growing near the waters edge at the James Campbell National Wildlife Refuge, Kahuku, Oahu.



Figure 26. *Eleocharis geniculata* or spike rush.



Figure 27. *Mariscus javanicus* or marsh cyperus.



Figure 28. *Cyperus alternifolius* or umbrella plant growing along the waters edge at Haiku Gardens pond, Oahu.



Figure 29. *Nymphaea* sp. or water lilies growing in an open water area of Kawainue marsh, Kailua, Oahu.

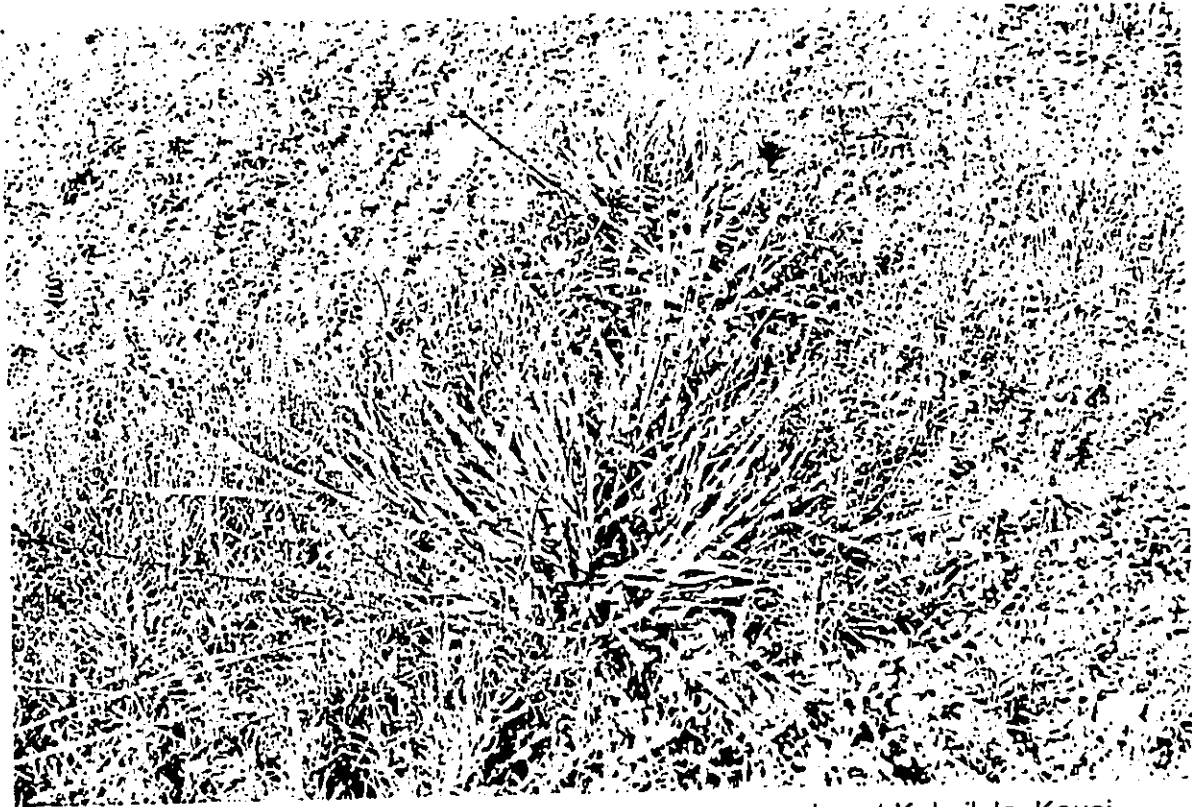


Figure 30. *Pycerus polystachyos*. Two isolated plants growing at Kukui'ula, Kauai.

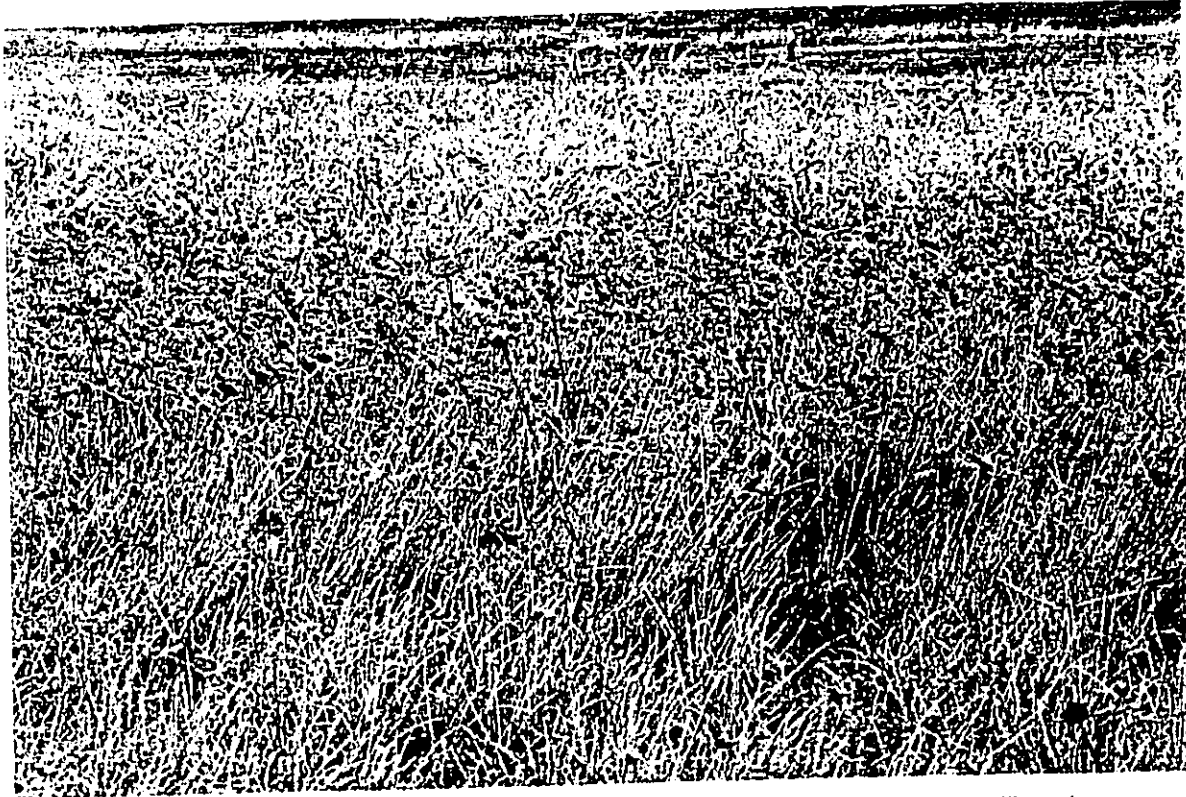


Figure 31. *Pycerus polystachyos*. Many plants forming a dense "grassland" at the Kukui'ula settling basin, Kauai.

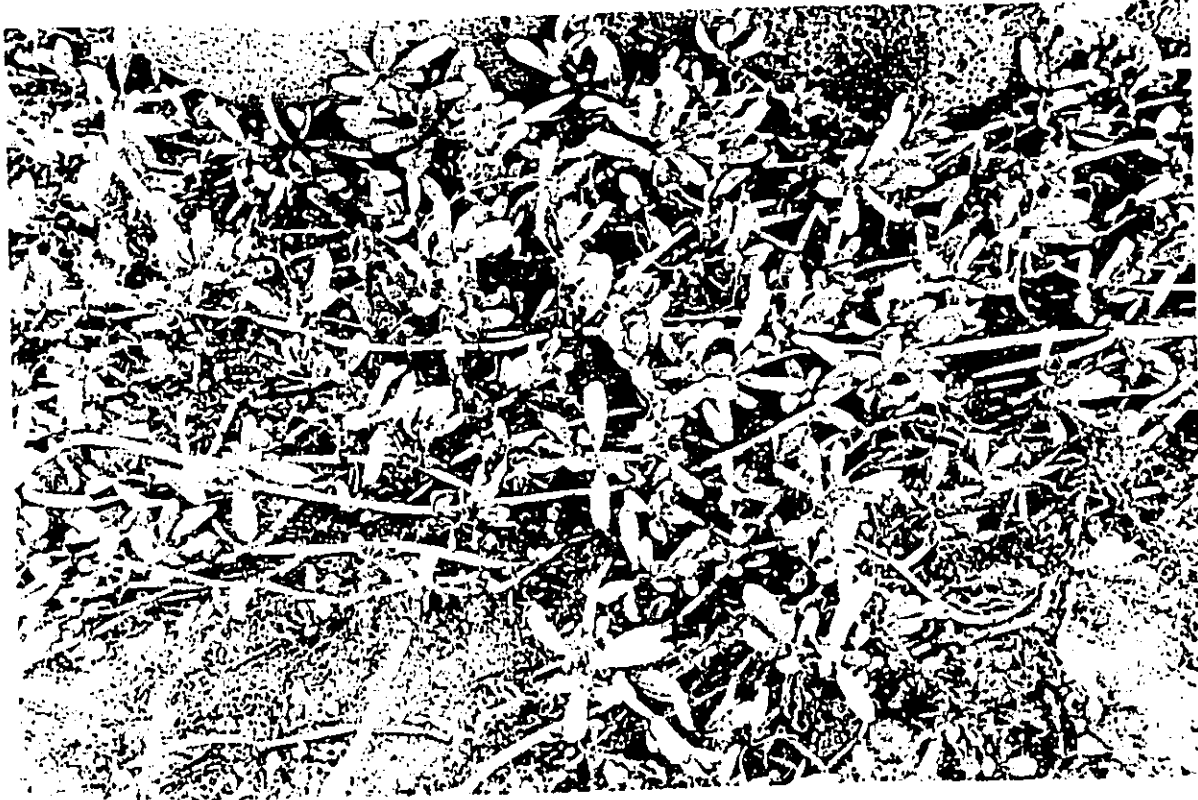


Figure 32. *Sesuvium portulacastrum* or 'akulikuli. Growing in sandy and rocky area near Sandy Beach, Oahu.



Figure 33. *Sporobolus virginicus* or saltgrass.



Figure 34. *Scaevola sericea* or naupaka



Figure 35. *Scaevola sericea* or naupaka, growing right along the ocean near Maunalua Bay, Oahu.



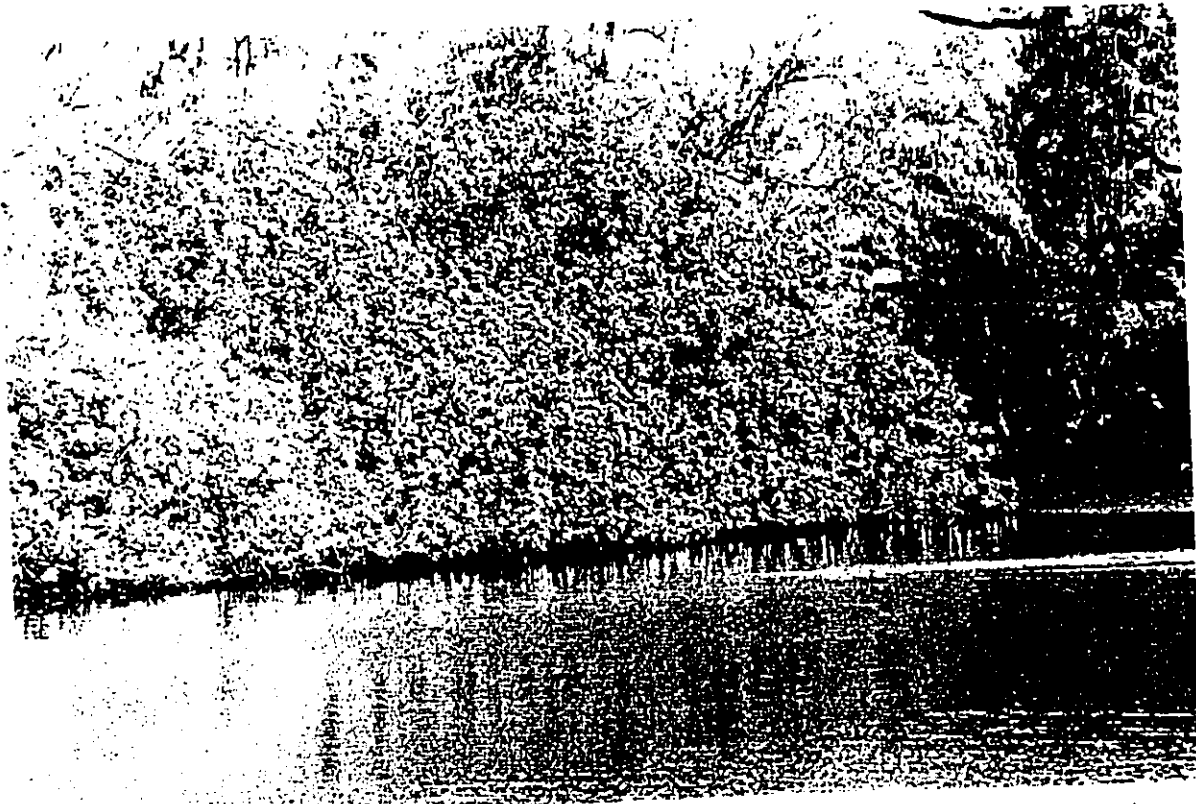


Figure 36. *Hibiscus tiliaceus* or Hau, growing right down to the water along an estuary at the back of Kahana Bay, Oahu.

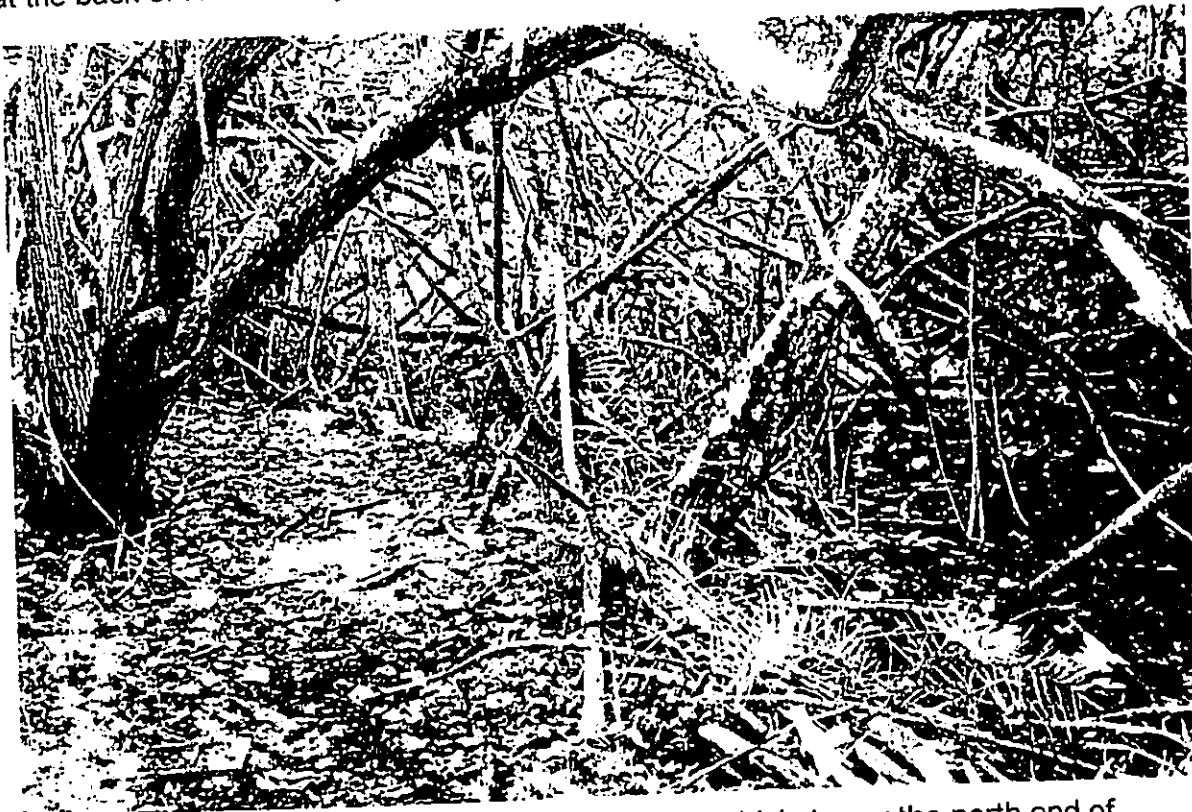


Figure 37. Trail through a *Hibiscus tiliaceus* or Hau thicket near the north end of Kaneohe Bay, Oahu.

**APPENDIX B**

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**Field Report, Proposed Wetland at Kukui`ula, Kauai**

Field Report  
Proposed Wetland  
At  
Kukuiula, Kauai

Prepared by:  
Phil Bruner  
Environmental Consultant: Faunal Surveys

Prepared for:  
Oceanit Laboratories, Inc.

Date: February 1998

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Brigham Young University  
Hawaii Campus  
Museum of Natural History

20 February 1998



SUBJECT: Field report for a one day visit to the Kukuiula Proposed Wetland, Kauai

Introduction: The field visit was conducted on 19 February. A walk-through of the area proposed for the wetland along with nearby property yielded... observations on what species occur on the site. Tallies of all species recorded were kept in order to estimate relative abundance..

Site Description: The makai portion is covered in grass and other low vegetation. A sprinkler system waters this section. Regular mowing gives a landscaped appearance to the site. An upper, mauka, section contains a fresh water wetland with emergent vegetation dominated by California Grass. The property is bounded by agricultural fields of papaya and former sugarcane lands that are now overgrown with brush and grass. The highway separates the site from the ocean. Weather during the survey visit was clear with brisk tradewinds.

Species Recorded:

Native Species - Common Moorhen = 1 pair with two young chicks  
Hawaiian Coot = 2 adults  
Hawaiian Duck (Koloa) = 1 adult

Migratory Species - Pacific Golden-Plover = 33  
Ruddy Turnstone = 22  
Wandering Tattler = 1

Introduced Species - Ring-necked Pheasant = 1  
Feral Chicken = 4  
Cattle Egret = 15  
Spotted Dove = 29  
Zebra Dove = 32  
Common Myna = 12  
Western Meadowlark = 14  
Northern Cardinal = 4  
Red-crested Cardinal = 25  
Skylark = 5  
Chestnut Mannikin = 100+  
Nutmeg Mannikin = 20

Discussion: The three native waterbirds were all observed in the small freshwater wetland in the mauka section of the site. These species are all listed as endangered by both the USFWS and the State of Hawaii DLNR DOFAW. The Hawaiian Duck was seen on first inspection of the site and promptly flew off and did not return. The two

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page 2 (Field Survey of the proposed Kukuia Wetland, Kauai)

Hawaiian Coot foraged throughout the small pond sometimes retreating to the cover when approached. The family of Common Moorhen called from the emergent vegetation. The male foraged in the adjoining papaya farm and along the perimeter of the wetland. The female stayed with the two chicks and foraged among the emergent vegetation at the center of the pond. The chicks stayed back in the grass but made brief foraging trips along the water's edge.

The migratory birds were the typical species that winter in Hawaii. Most of the Pacific Golden-Plover were territorial. The Ruddy Turnstone moved about the site in small flocks. The Wandering Tattler was confined to the rocky drainage area at the front (makai) of the property.

Twelve introduced species were tallied. They were the ones normally seen in this habitat in this region of the island. Western Meadowlarks were particularly vocal. Chestnut Mannikins were abundant.

Conclusions and Possible Considerations: The presence of three of the four native waterbirds demonstrates that the wetland once fully developed could easily attract and support waterbirds. Migratory ducks as well as shorebirds would also utilize the wetland. Edge habitat with emergent vegetation for cover and nesting opportunities are critical for a viable wetland suitable for waterbirds. Control of water depth to allow wading species access and deeper areas for ducks and Hawaiian Coots will be important to the success of the wetland. It might be possible to keep the mauka wetland primarily freshwater while making the larger makai portion brackish. The site could be an attractive and productive wetland. This will, however, require a management and maintenance program.

**APPENDIX C**

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**Kukui`ula Bay Village, Updated Issues Analysis**

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**Kukui'ula Bay Village**

**Updated Issues Analysis**

**Prepared by Earthplan**

**For Kukui'ula Development Company**

**April 1998**

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# **1 Background and Purpose**

## **1.1 Background**

The Kukui'ula Development Company, Inc. is developing a new community in southern Kaua'i. The project site encompasses 1,049 acres located west of Poipu and southwest of Koloa Town. The original project included 3,000 residential units, two commercial areas, a ten-acre marina, a 500-unit resort complex, a golf course, parks and a school site.

In 1993, three fundamental changes were made to the plan. First, the high water mark during the 1992 Hurricane Iniki suggested that the makai portion of Phase 1 should have less residential development than originally envisioned. Second, the housing mix needed to be geared more to single-family homes based on community desires. Third, many people believed that the project should have more revenue-generating uses, given the post-hurricane economic recession on Kaua'i.

As a result of those considerations, the project was modified to include a "town center" around the marina. The town center was envisioned as a modern coastal village with visitor accommodations, retail commercial space, business offices, and marina-related shops. The visitor lodgings would include several small inns and lodges, with the same unit count as the original plan. Further, the proportion of single family homes increased to two-thirds of the total housing supply.

KDC has successfully obtained several land use approvals to implement this project. On the County level, the entire project site has been designated for development on the Kaua'i General Plan. The 500+ acres in Phase 1 has been zoned for residential uses, open space and commercial uses. The entire project site has also received Urban designation by the State Land Use Commission.

During the approval processes, conditions were required by Kaua'i County and the State Land Use Commission, and KDC has implemented some of these conditions. Major work included drainage improvements, the development of an on-site sewage treatment plant, the development of affordable housing units in Ele'ele, and extensive archaeological work. Further, KDC donated land for the 111-unit Paanau affordable housing project.

Recently, KDC announced plans to begin construction of Koloa Estates, a 32-lot residential subdivision in the northeast portion of the project site.

### **1.2 Most Recent Project Changes and Purpose of This Report**

KDC recently modified its plans for a portion of the 1,049-acre project site. The focal point is Kukui'ula Bay Village, which is located immediately mauka of Kukui'ula Harbor. The plan calls for a 200-room hotel, approximately 300 time-share/condominium units, and 200 residential condominium units. Also included is a small resort commercial center, with 30,000 square feet of leasable space. Further, improvements are planned for the harbor, possibly including two boat launching ramps, parking for boats and automobiles, and support facilities, such as a supplies store and restaurant. The marina has been eliminated due to the long lead time required to acquire permits and economic feasibility.

The proposed hotel and timeshare units require a County General Plan change from "Urban Residential" to "Resort" to allow resort uses, and Land Use Commission action is also needed to allow the resort complex to be built in Phase 1 of the project. Originally, the resort uses were part of Phase 2.

The purpose of this report is to update a 1993 issues analysis conducted for the entire Kukui'ula development. This report is intended to focus specifically on issues related to Kukui'ula Bay Village and is appended to and summarized in the supplemental Environmental Impact Statement being prepared for the County General Plan amendment.

### **1.3 Report Preparation and Organization**

This report was prepared by Earthplan, whose offices are located at 81 South Hotel Street, Suite 211, Honolulu, Hawai'i. Berna Cabacungan, principal of Earthplan, was project manager and principal interviewer, analyst and writer. Independent contractor Traver Carroll assisted in interviews.

The remaining portion of Section 1 describes issues analysis. Section 2 provides highlights of the 1993 issues analysis. Section 3 describes the interview process and provides a profile of those interviewed. Section 4 summarizes feelings regarding the existing community, and Section 5 summarizes reactions to the proposed project modifications. An analysis is provided in Section 6.

**1.4 Description of Issues Analysis**

Issues analysis is designed to identify and analyze community concerns about a proposed action. To ensure that the project is reviewed in an overall social context in which the project is proposed, feelings and concerns about the existing community need to be considered as well. Also, trends are part of the overall social context. For example, it is helpful to understand if a project is unique in terms of its issues, or if reactions are consistent with other issues.

Issues analysis differs from statistical surveys, the latter of which are designed to focus on frequency of reactions. Polls are valuable because they tell about the opinions of the majority or the minority. The survey instrument is not conducive to dialogue, however, and the personalized reasons for these opinions are often not evident in the responses. In contrast, the only time we make reference to quantity of opinion in issues analysis is where there is significant difference or number, such as "almost all respondents" or "only two respondents."

## **2 Highlights of the 1993 Issues Analysis**

In 1993, Earthplan conducted an issues analysis on the Kukui'ula Development. That study, hereafter referred to as the 1993 analysis, identified issues relevant to the then-current project plan and the existing community.

This section presents highlights of the 1993 analysis. Section 2.1 describes the interview process and provides a profile of the interviewees. Comments about the existing community are summarized in Section 2.2 and a summary of project-related comments is presented in Section 2.3. An analysis of the 1993 comments is contained in Section 2.4.

### **2.1 Profile of 1993 Interviewees and the Interview Process**

In the 1993 study, 57 people were interviewed by three interviewers over a five day period in September 1993. Most of the interviews were held in person.

A primary objective in the selection of interviews was to achieve a cross-section of community interests. Those who were contacted were directly affected by the project, or would otherwise have some type of interest in the development of the project site. The interviewees included nearby residents, neighboring businesses, people who are very active in the community, members of environmental and cultural organizations, business operators in the vicinity or along the shoreline and ocean recreation users.

In terms of length of residence, the majority were long time residents of Kaua'i; 30 people were either born and raised on the island, or had lived there for 30 years. Only eight had lived on Kaua'i for ten or less years.

Those interviewed were asked to discuss (1) feelings about their existing community; (2) uses and users of the nearby shoreline and project site; and (3) feelings about the 1993 project.

## **2.2 Summary of 1993 Findings**

### **2.2.1 Feelings about the Existing Community**

In 1993, interviewees felt that the community's strengths lie in the area's rural character, the strong sense of community and its physical characteristics. They liked the quietness of the area, the lack of commercialism, the lack of high-rises and the overall "country" atmosphere.

"Our people" was also an important strength. The social fabric, while diverse, was cohesive, with people helping each other in times of need. It was also an active community, where people fought for their beliefs and were willing to take a stand on issues.

Those interviewed also liked the "best weather on Kaua'i," the best beaches, and the greenery of inland areas.

Community problems were many, with the effects of Hurricane Iniki being a frequent topic. Economic problems were severe, the visitor industry was not fully operational, unemployment was high, and unemployment benefits were about to run out. In 1993, public services and facilities had not been restored to previous levels, and people said that they had less trust in government. Further, even though there was some physical recovery, it was noted that the community had not fully healed; there was still a lot of stress and domestic tension. There was also community instability with many long-term residents leaving the island, and an influx of outsiders, especially construction workers.

Another community problem was the relationship between long time residents and newcomers. Long time residents were particularly concerned that more recent residents, defined by some as those who lived on Kaua'i for less than ten years, were trying to impose their values on the rest of the community. The long time residents were described as being less vocal, and less willing to be confrontational.

Similar conflicts were also reported between the "haves and have-nots," whereby the more affluent shoreline residents were restricting ocean access to long time residents who want to fish in the area. Tourist-resident interaction was also sometimes problematic.

Those interviewed cited the pre-hurricane rapid pace of growth as a major community problem. They felt that roadway development had not kept pace, and that the local people had to compete with visitors for park and beach space.

In spite of these problems, interviewees were optimistic. They expected that the economy will improve in the coming year-and-a-half to five years, with full eventual recovery of the south shore visitor industry.

### **2.3 Use of the Project Site and Nearby Shoreline**

In 1993, the 1,049-acre project site was not well-frequented. The nearby shoreline, on the other hand, was well-known. Interviewees walked and jogged along the beach and Lawai Road, and water uses included net and pole fishing, swimming, boogie boarding, windsurfing, kayaking, sailing and scuba tours, and private sailing.

### **2.4 Reactions to the 1993 Project**

Interviewees were asked to share their reactions to the proposed project in terms of positive characteristics, potential problems or issues and suggestions. The following summarizes positive characteristics about the project:

- *Marina* - The marina was considered a positive part of the Kukui'ula community, mostly by boaters because of the lack of boat slips. It was also considered an opportunity for local people to launch their fishing boats.
- *No Plans for Hotel on Existing Shoreline* - Those interviewed liked having no hotels along the existing shoreline, which could have impeded public access to the ocean.
- *Housing Mix* -- The predominance of single family units was cited as a positive characteristic because it was consistent with Kaua'i residential preferences. The project was seen as an opportunity for local people to purchase a home, and the smaller units were envisioned as starter units for young families. The location of units meeting affordable housing requirements was unresolved at the time of the interviews. Some preferred off-site affordable units; others wanted affordable units dispersed throughout the Kukui'ula community.

Section 2

Highlights of the 1993 Issues Analysis

- *Open space, parks and golf course* - Interviewees appreciated the open space and parks proposed in Kukui'ula. The juxtaposition of the golf course and residential areas was also considered an amenity.
- *Proper support* - Another positive characteristic was the project's provision for its own required support systems. Interviewees liked the westerly bypass, the already-completed sewage treatment plant and the school expansion site.
- *Economic benefits* - This was an important element for those interviewed. They noted that the area needed more jobs, and hoped that the town center would provide business opportunities for local entrepreneurs.

Potential problems cited by those interviewed are summarized as follows:

- *Feasibility and target market* - Virtually all interviewed wanted to see Kukui'ula developed into a community for primarily local residents, but they questioned whether this market would be feasible. They doubted that it would be economically feasible to focus on this market, and expressed strong concern about creating "another Princeville," whereby rich outsiders and speculators would be the primary buyers. They warned of social conflicts and economic disparity problems.
- *Residential component* - There were opposing preferences expressed for more single family homes and more multi-family units. Those who wanted to see the former felt that single family units were more consistent with the Kaua'i lifestyle; also, the larger the lot the better. Multi-family units were equated with affordability, and it was believed that a major increase in such units was required to help relieve Kaua'i's pressing housing need.
- *Environmental impacts* - Those interviewed expressed concern about environmental degradation which could result from the project. Of particular concern were marina impacts, including adequate marina flushing, surf site impacts, changes to marine habitats, and loss of open space.
- *Resort component* - Two extreme opinions were expressed regarding the



proposed lodging related to the marina. On one hand, it was felt that these facilities were inadequate; interviewees wanted to see hotels in Kukui'ula. On the other hand, any amount of visitor facilities was considered negative because it was believed that Kaua'i already had its share.

- *Project magnitude* - It was noted that the project proposes to create a totally new town, and will thus generate a major population increase. There was concern about the effects of adding several thousand people to the area. Traffic was frequently mentioned, as were the impacts on existing social patterns and interaction, on schools, and on parks.
- *Construction impacts* - A major concern was construction impacts, particularly in terms of dust, noise and vibration impacts.

Those interviewed had several suggestions about the 1993 project. Marina facilities were common suggestions, particularly as related to public use. Those interviewed also suggested additional facilities in the overall community, including infrastructure. Construction management ideas were offered, as were long term management considerations geared to residential community maintenance and environmental protection. Further, it was recommended that KDC proceed with Phase 1 and show results, prior to seeking approvals for Phase 2.

### **2.5 Analysis of 1993 Comments**

The 1993 study presented the following analysis of issues related to the project:

**1. There was expectation for growth in this vicinity.**

There was a tendency among interviewees to accept development and change for the overall Kukui'ula project site. While the proposed project components and configuration were new to those interviewed, the concept was not. Kukui'ula has been on the drawing board for many years, and the community has reviewed this development in major land use approval processes. In place of surprise was sometimes impatience. Long time residents often expected the project to be underway already, and they were disappointed that there are still approvals to be obtained.

Those familiar with the County's planning process tended to see this project as being consistent with previously stated desires to minimize further resort development east of Poipu Road.

**2. The 1993 plan was seen as a scaled-down version of the previous "hotel-marina project."**

There was a tendency to view the 1993 plan as a lesser version of the previous plan, rather than as a major departure. This attitude tended to engender acceptance or support, since there would be presumably less impacts. It was noted, however, that the marina is still present, and some warned that the previous opposition to the hotel/marina may evolve into marina-only opposition, unless people felt that the marina is financially and physically acceptable to the general public.

**3. Housing conflict between affordability and unit type preference was expected to continue.**

While it was agreed that single-family housing was "Kaua'i-style," there was a tendency among those who were involved in public service to warn against perpetuating this preference. They felt that Kaua'i had a major housing crisis, which was likely to worsen before it improves. To them, Kaua'i would not be able to afford the luxury of one-house-and-lot-per-family, and there needed to be more acceptance of multi-family units. The comments on Kukui'ula reflected this conflict, and were expected to continue to be voiced on housing projects.

**4. Community cohesion and polarization continues.**

As pointed out in comments about the existing community, the community was both cohesive and polarized. Cohesion is often displayed when people need to band together to solve an immediate problem. Polarization often occurs when the need is less urgent, such as in planning efforts or development projects.

It was expected that there would be some community polarization in reaction to this project and people would apply their own personal values to their assessment of the project. Further, this polarization was expected to

be inversely related to the extent of community-oriented facilities in Kukui'ula. If the project actively addressed major community problems, then there would be less tendency to polarize since the community would be able to work together for a common good. Components such as affordable housing, homeownership for local families, community-wide recreational facilities, and public boat ramps would give people a reason to work together for a common good, rather than advocate their own values.

**5. Acceptance of the project was often related to personal dependency on development or the resort industry**

There was a tendency for business people, service industry workers, construction workers and real estate people to support projects with visitor-related facilities, since their financial situation often depended on the survival of the resort industry. Likewise, those who are less tied to the visitor industry may feel more neutral, or less inclined to support development or the visitor industry.

**6. At the time of the 1993 interviews, there was a perception that KDC could have proceeded with Phase 1.**

Those who believed that KDC should implement Phase 1 immediately had two reasons. First, they felt that KDC should prove its capability of doing the entire project by implementing what was already approved. Second, there was a belief that the project had been delayed long enough, and that housing was already needed. Regardless of the reason for this belief, those interviewed seemed to dissociate Phase 1 from Phase 2. They did not see that the land components in Phase 1 are intricately related to Phase 2. The housing component and the golf course were part of both phases, and it was recommended that the community be better informed of this relationship.

## **3 Interview Process for This Updated Analysis**

This section presents the approach and process for conducting interviews for the updated analysis. To a large extent, the updated analysis was closely patterned after the 1993 study to provide a comparative analysis of reactions to project modifications and changes in attitude over this five-year period.

Section 3.1 provides a profile of those interviewed and Section 3.2 describes the interview process.

### **3.1 Profile of Those Interviewed**

As in the 1993 study, the selection of interviewees for the updated analysis was geared to achieving a cross section of interests. The initial list for this study was the 1993 list of interviewees. It was reviewed to establish who were still residents and business owners in the vicinity, and who maintained the same organizational interests and positions as in 1993. Additional people who may be affected by or have an interest in the project were also identified, as well as current organizational leaders. Further, those interviewed were asked to identify other people whom they felt would help expand the cross section.

In all, 47 people were interviewed, 19 of whom were participants in the 1993 study. Those interviewed were asked to identify their organizational and other affiliations so that the reader would have an idea as to the cross section of interests reflected in this analysis. Interviewees shared their opinions as individuals, however, and were not asked to take a position for their organization. The list of names is provided in Appendix A.

The following highlights characteristics of those interviewed:

- In terms of length of residence, the profile of those interviewed is very similar to that of the 1993 study. In both studies, the majority were long time residents of Kaua'i, as follows:
  - Twenty-four people (51 percent) were either born and raised in Kaua'i, or had lived on the island for over 30 years.
  - Six people (13 percent) had lived on Kaua'i for 20 to 29 years.

**Section 3**

*Interview Process for This Updated Analysis*

- Twelve people lived (26 percent) had lived on Kaua'i for ten to 19 years.
- Only four (nine percent) had lived on the island for less than ten years.
- One person is a part time resident who is building his house and is planning to move when construction is completed.
- Thirty-seven of those interviewed (79 percent) live in the Koloa - Poipu region. Six people live in O'ahu, two live in Lawai, and one resides in Kekaha. One divides his time between O'ahu and Poipu. In the 1993 analysis, 52 percent lived in the Koloa - Poipu region.
- The cross section of interests is very similar to that in the 1993 analysis, and the following summarizes the cross section of interests: <sup>1</sup>
  - *Community and cultural organizations* - Those interviewed are very active in community efforts. Thirty people belong to community organizations, with the most common being the Koloa Community Association. Ten are members of cultural organizations, such as the Royal Order of Kamehameha, the Ka'ahumanu Society and the Kaua'i Historical Society.
  - *Business* - Seventeen people were interviewed because of their business interests. Of these, ten owned or operated a business near the project site.
  - *Nearby residents* - Seventeen residents lived either immediately south, southeast or east of the overall Kukui'ula project site.
  - *Shoreline users* - Seventeen of those interviewed indicated that they are frequent users of the nearby shoreline and Kukui'ula Harbor.

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1. The total does not add up to 47 because many interviewees belong to more than one category.

### 3.2 Interview Process

Two interviewers conducted interviews over a three-day period. Most of the interviews were informal and held in person; two people were interviewed on the telephone. The interviews were based on a common set of questions. Project information was provided by Townscape, Inc., and included a sketch of a preliminary plan and a location map. Interviewees were informed that their individual conversations were confidential, and that their comments would be collectively analyzed.

There were three basic parts to the interviews:

- *Feelings about the existing community* -- Interviewers asked people to first discuss their existing community. They were asked to discuss to compare today's quality of life to that in 1993, or five years ago. They were asked to discuss the community's most important strengths, as well as the most important problems. Comments about any discernible changes to these strengths and problems were also solicited.
- *Feelings about the Kukui'ula Bay Village* -- Interviewers described the proposed plan for the Kukui'ula Bay Village, and discussed how this effort is different from the 1993 plan. It was further noted that the remaining portion of the 1,049-acre overall project site remains the same. Interviewees were then asked to identify positive characteristics of the proposal and potential problems associated with this effort. They were then asked if they had comments about specific components, including the hotel, the timeshare condominiums, the residential condominiums, harbor improvements, and the botanical theme, including the wetlands.
- *Suggestions* -- Those interviewed were asked if they had any suggestions on the project or for KDC.

## **4 Feelings About the Existing Community**

### **4.1 Community Strengths**

#### **4.1.1 Community Participation and Cohesion**

The most commonly cited strength was the people in the Koloa - Poipu region. It was felt that there is a very vocal citizen participation network. People are willing to speak out on issues, and, as one person said, "There is no shortage of opinions in our community." It was noted that the region has a very good "coconut wireless" system, and that people learn about issues quickly through the grapevine. This network and activism have proven very effective in planning matters, and a wide range of community leaders are willing to be active in complex planning issues.

Community cohesion was considered an important community strength. It was felt that people were able to unite for efforts which will benefit the entire community. It was further felt that community cohesion has either increased or stayed the same since 1993. After the hurricane, people banded together to help each other in time of need, and they continue to do so as economic problems become more prevalent.

There were different opinions as to the extent of community cohesion, however. On one hand, there were long time residents who felt that the "old-timers" and "locals" have always stuck together, and still help each other out. They felt that the "newcomers" did not share this feeling. On the other hand, there were those who felt that newcomers were an important part of the community cohesion, and that their efforts were instrumental in successful community efforts.

An area which seems to bring people together is school and youth activity. Those interviewed felt that activities involving their children and grandchildren often required that people work together for common goals and make long term commitments of their time.

Those who moved to the region from another state felt that a community strength is the growing number of residents who have been financially or professionally successful elsewhere and have moved to this region. These newer residents are considered important resources in addressing community needs.

**4.1.2 Small Town and the Environment**

Regardless of how long one has lived in the region, it was felt that there is still a small town feeling in Koloa - Poipu. People still know their neighbors and their children's friends. They still can count on each other when they need help.

Another type of community strength was the physical environment. People appreciate the natural beauty of the region. They felt that the mauka areas had enough rain, and that the coast offered beautiful beaches and a sunny climate. One person pointed out that Koloa, in particular, has traditionally been considered a very habitable and nurturing place because of the temperate climate and fertile soils.

**4.1.3 Economic Improvements and Compatibility with the Environment**

Though economic conditions tended to be discussed as a problem, some aspects of the economy were seen as strengths. It was felt that the region has a broad economic base, including sugar, resort and independent businesses. Further, there is reportedly a positive balance between a thriving tourism-based economy and a beautiful clean environment.

**4.2 Community Problems**

**4.2.1 Economic Decline**

Those interviewed were very concerned that the quality of life in Kaua'i has been deteriorating over the past five years. The main reason was the economic downturn which has persisted since the 1992 Hurricane Iniki. Only three people felt that the quality of life has improved, and they attributed this improvement to economic conditions. These three people were business operators and they indicated that their operations have improved over the last five years.

Economic conditions were the most commonly cited problems. Those interviewed often recited a litany of economic problems. They noted that unemployment is high, and that residential and business foreclosures are increasing. Interviewees were concerned that, as more businesses close or streamline, everyone is affected either personally, or through their families, or through their fellow



workers and friends. As an example of the far-reaching effects of the economic problems, one person said that, at Koloa Elementary School, 46 percent of the 400 students are on the reduced cost or free lunch program.

It was felt that another symptom of economic problems is the noticeable increase in crime. Those interviewed reported an increase in thefts, such as automobile and property thefts, and even thefts related to fruit trees and edible plants. Those interviewed suspected that these crimes often reflected the desperation of people. Further, they linked these thefts to drug habits and the need for quick cash. There was also a reported increase in drug use and this was sometimes attributed to stress related to economic problems.

Those interviewed felt that financial problems and stress about the future underlay everyday personal decisions and conversations, and this leads to anxiety and uncertainty on a community level. The feeling of helplessness is increasing, particularly because people do not have a sense of a solution at this time. It was noted that, after the hurricane, there was hope because reconstruction and rehabilitation funds were being funneled into the community, and individuals were receiving unemployment benefits. Now there is little external economic support. Those interviewed knew someone, often a long time resident, who had moved away to seek better economic opportunities.

#### **4.2.2 Newcomers**

Long time residents, particularly those who were born and raised in the area or who had lived here for more than 30 years, discussed community problems related to newcomers. They felt that, with the influx of new residents, the community no longer sticks together as much. It was felt that the different groups have stayed apart; there's little unity of purpose.

They were also concerned that their community organizations have become dominated by newcomers. When asked why there has been a shift in leadership, interviewees replied that long time residents have either lost interest or feel dominated by the more articulate newcomers.

Even more recent residents expressed some frustration about their efforts to integrate the newer residents. They said that they hear newcomers saying, "This is how it was done where I came from." Or, "You're too laid back here; you need to voice your opinion." Those types of comments often alienate long time residents, and the differences between the social groups persist.

#### **4.2.3 Physical and Social Infrastructure**

There were several complaints about traffic. Those interviewed felt that the Koloa Road - Poipu Road intersection continues to be a problem, and that morning traffic near Koloa Elementary School is becoming worse. Some of this congestion was reported to be somewhat relieved by the easterly bypass, however.

The increase in tour busses is a problem. Those interviewed felt that tour busses hamper traffic on Maluhia Road, and are a problem along Lawai Road.

Those interviewed felt that the County needs to develop more water sources, and said that the region's sewer system needs improvement.

Those who work with young people felt that the region needs to provide more activities and facilities for young people. These items are part of the social infrastructure which helps keep the community active and cohesive. Further, they would give young people things to do, and help them stay out of trouble. Those interviewed felt that Koloa - Poipu needs more soccer fields, basketball courts, and roller hockey rinks.

It was noted that Kaua'i County has no places to dump cars legally. While this is a problem for those who need to dispose of their vehicles, it also has secondary effects. Those interviewed said that people then dump their cars in cane fields and undeveloped land. This causes landowners to gate their properties and leads to tension in the community.

According to long time residents, beach access is becoming increasingly limited. There are fewer places in Poipu for residents to gather, and it is becoming more difficult to fish along the shoreline. Part of this problem is related to lack of adequate parking, and part is due to a reported increase in access restrictions along the coast. Further, long time residents feel that the more affluent landowners along Poipu and Kukui'ula beaches do not welcome people using the shoreline fronting their property.

**4.2.4 Lack of Affordable Housing**

The lack of affordable housing in the Koloa - Poipu region was cited as a problem. Many workers in the Poipu resorts must commute to work from areas outside the region. One interviewee said that of his 75 employees, only seven live in Koloa/Poipu. Many of the other employees spend twenty to 40 minutes commuting from Waimea, Hanapepe, and Kapa'a.

## 5 Reactions to Kukui'ula Bay Village

This section presents interviewee comments on the proposed Kukui'ula Bay Village. Section 5.1 discusses positive characteristics cited about the overall project, and Section 5.2 identifies potential problems. Section 5.3 presents reactions to specific project components. Community suggestions are contained in Section 5.4.

### 5.1 Positive Characteristics <sup>2</sup>

#### 5.1.1 Economic Stimulation

The project's most positive characteristic was its potential to stimulate the regional and island economy. Interviewees stressed that the magnitude of economic activity, the project's construction and long term employment, and secondary effects for other businesses are sorely needed in this time of economic downturn.

It was noted that there have been no new projects of magnitude in this region for several years, and that Koloa - Poipu needs a "big project" now. This would make economic sense, and give people a sense of hope that conditions are improving.

Further, those interviewed felt that the employment generated by this project has a crucial role in the economic revitalization of the Koloa - Poipu region. They pointed out that the construction industry is lagging, and that many workers are unemployed. Construction jobs would therefore be welcomed by many households.

In terms of long-term employment, interviewees felt that the overall project would provide a diversity of jobs. They warned that some people may criticize the "low-paying" nature of hotel jobs, and said that this criticism is based on stereotypical expectations.

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2. Three people felt that the project had no positive characteristics.

Those interviewed also noted that others will benefit from this project as well. Small businesses and vendors will be able to supply the project during construction, and will have larger customer bases in the long run. It was expected that realtors, restaurants, service stations, supermarkets and boutique shops will all benefit by having more tourists and residents in the area.

Interviewees also felt that KDC's parent company, A&B, has been a major economic force on Kaua'i, as well as a responsible and diligent neighbor on the island. They described A&B as a long time company which provided employment for many residents and has met its commitments to the community. They talked about infrastructure requirements that have already been met, and how A&B has contributed to community efforts. Interviewees were therefore confident that the project will be implemented responsibly and efficiently.

#### **5.1.2 Environmental Effects**

Non-boaters felt that the elimination of the marina was a positive aspect. They believed that the community did not want the originally-proposed marina, and felt that this change will be welcomed by many. They remembered that when the marina was first proposed, some people opposed it because of concerns about environmental impacts related to dredging and other construction activity.

It was also noted that the location of structural development mauka of Lawai Road is very positive. Interviewees did not want to see structures on or near the shoreline and felt that the hotels and condominiums seemed to be adequately set back from the harbor.

There were also positive comments about the wetlands. Those interviewed felt that, from an environmental perspective, the wetlands concept follows the natural function of this portion of the project site and will provide a habitat for rare and endangered species.

#### **5.1.3 Aesthetics**

Those interviewed felt that the project aesthetics were especially positive. The development of the resort complex would transform currently fallow fields into an attractive environment. The botanical theme was appreciated, as was the landscape buffer between the road and the structural environment.

## **5.2 Potential Problems <sup>3</sup>**

### **5.2.1 Population and Density Issues**

Interviewees were concerned about the increase of people due to the Kukui'ula Bay Village, as well as to the overall Kukui'ula project. They felt both the current proposal and the rest of the project will result in a substantial increase in onsite population, and were concerned about how this population can be accommodated.

Three specific areas were identified as potentially problematic. First, and most common, was traffic. Lawai Road is considered limited and already congested at times, and traffic on Poipu Road was just recently lessened with the easterly bypass. Adding substantially more cars on either road was problematic, and those interviewed wanted to see the westerly bypass and the proposed onsite major arterial roadways relieve traffic congestion as much and as soon as possible.

The second population and density concern was beach crowding. Because there is no beach fronting the Kukui'ula Bay Village, interviewees were concerned that the project's visitors, timeshare owners and condominium residents will use already crowded Poipu beaches. Further, because these beaches are not within walking distance of the project site, it was pointed out that the project's population would likely drive to beaches, thereby adding more cars on the road.

Third, there was a concern that the overall project, including the proposed residential condominiums, will bring in more outsiders, who will then try to influence community affairs. As discussed in the previous section, this is considered a problem already, and interviewees were concerned about increasing the problem.

### **5.2.2 Feasibility and Marketability**

Interviewees raised questions about the feasibility of a non-beach resort in the Poipu area. They pointed out that the south shore is known for its beaches, and asked why a visitor would choose a non-beach resort in Poipu.

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3. *Four people felt that the project presented no major problems.*

They asked how the hotel in particular would be marketed, and if there would be sufficient onsite activities to compensate for the lack of a nearby beach. They inquired as to whether this project would be marketed as part of Poipu, or as a separate resort destination. It was pointed out that, if this project is considered part of Poipu, then Kukui'ula Bay Village could complement the existing Poipu services and facilities. For example, the project's hotel could refer its overflow visitors to existing hotels, as well as take in referral from these establishments. Those interviewed felt that, if the project is to be marketed separate from Poipu, then the new resort destination should be as full-service as possible.

Given these questions, interviewees felt that the underlying concept for Kukui'ula Bay Village needs to be better defined, as the fundamental selling point was still unclear to them.

### **5.2.3 Project Emphasis**

Interviewees remembered that, in previous discussions on the overall Kukui'ula community, the emphasis has been on the development of a planned residential community. Those interviewed noted that the community's support of Kukui'ula was for mostly a residential community with other uses, such as resort and marina. This support helped the project in obtaining necessary land use approvals. In light of the Kukui'ula Bay Village and its resort focus, interviewees wanted to make sure that KDC will still implement the residential component as planned.

### **5.2.4 Concerns of Nearby Residents**

Nearby residents had specific problems, and these were expressed mostly by those who live immediately south of the project site. Generally, there was a feeling that existing conditions should prevail. They were concerned that the two to three star-quality of the hotel may be inconsistent with the high-priced beach-front homes. Interviewees did not want the resort to negatively affect their property values, and they were concerned that the influx of people, particularly the type of clientele who would stay in a three-star hotel, could threaten their privacy and quality of life. Further, they did not feel that Lawai Road could handle many more cars, and urged KDC to make sure that traffic is diverted away from this two-lane roadway.

**5.3 Comments About Project Components**

All of the project components were viewed positively and negatively, and this section summarizes comments about each element.

**5.3.1 Hotel**

A positive aspect of the hotel component, according to those interviewed, was that the mid-quality level would help diversify the visitor unit supply. Interviewees felt that the relatively high-quality hotels and their clientele are good business for the area, but they emphasize the economic disparity between residents and affluent visitors. Long time residents, in particular, wanted to see a wider range of visitors staying in south shore hotels.

Another positive point was that the possible lower hotel rates may attract more visitors from other islands. Further, those interviewed liked the low-rise buildings and suggested that the other structures remain consistent with this low density look.

While the mid-star quality appealed to some, it was problematic to others. They felt that the Kukui'ula hotel may be inconsistent with existing Poipu hotels. As one person put it, "We fancy ourselves a five-star resort area." There were concerns that, if the hotel succeeds in diversifying the types of south shore hotels, then the area may lose its reputation for being a high-quality destination, and "become another Kapa'a."

Another problem with the hotel was the type of employment it offered, which some considered low-paying and entry-level.

**5.3.2 Timeshare condominiums**

Interviewees liked the proposed timeshare condominiums because they believed that the timeshare product is a time-proven product that works. Further, they believed that timeshare owners make good visitors. They stay longer than hotel visitors, spend money while they are here and tend to be more sensitive to the local community.



On the other hand, other interviewees pointed out that, of all the islands, Kaua'i already has the highest proportion of timeshare units. They did not want to see Kaua'i develop an overdependence on any one type of visitor product. They also observed a high number of foreclosure notices for timeshare units in newspaper ads, and did not want to see empty buildings of unsold units.

Timeshare critics also believed that timeshare owners are not good shoppers. They tend to eat in their condo unit, so they do not frequent restaurants, and they are often on a limited budget.

A common criticism of timeshare units was the marketing techniques employed by sales people. Those interviewed said that the sales people appeared "distrustful" in the way they approached people, and were "sleazy" with their free meals and discounts. Another criticism was that timeshare condominiums do not pay the same tourist accommodation tax as a hotel unit. This was considered unfair, since both products benefit from the visitor industry.

**5.3.3 Residential condominiums**

Generally, interviewees either liked or remained neutral about the proposed residential condominiums. They felt that this component is consistent with the overall plans for a residential condominium.

The main concern about this component was the potential to use the residential units as transient rentals, whereby a speculator would purchase a unit and rent it out as a visitor unit. This was considered highly undesirable because it brings transients into a residential area, yet inevitable because of the south shore reputation as a resort area.

**5.3.4 Harbor Improvements**

The harbor improvements were viewed mostly positively, especially by boaters. They felt that more boat launch ramps were needed, and interviewees were especially appreciative of more parking areas. Some boaters felt that the improvements should only be the beginning, and that the State should work with KDC in making further improvements.

Also, nearby residents hoped that the increased number of boat and automobile parking would lessen the current level of onstreet parking. Non-boaters who believed that improvements were necessary also approved of the proposed concept.

Other non-boaters felt that the harbor is not busy enough to justify these improvements. They were concerned that the improvements will encourage increased harbor usage and may be dangerous for newcomers and visitors, especially in the summer months when there is reportedly a dangerous surge.

#### **5.3.5 Botanical Theme and Wetlands Concept**

The botanical theme, including the wetlands, was seen as a highly positive aspect of the project. Interviewees felt that this would give the project a unique look and presents opportunities for ecotourism and visitor education. It was also considered an environmentally responsible way to handle the site's drainage function. They encouraged KDC to make this into a community resource as well, and asked that residents be given full access to the area.

The only criticism of this component came from two boaters: "It should have been a marina."

#### **5.4 Community Suggestions**

Interviewees strongly recommended that the project be as inclusive as possible. They suggested that residents be allowed access to the wetlands area, and to the onsite shops and restaurants. They wanted to see one or both boat launching ramps for public use, and suggested that there be a policy of hiring area residents as much as possible.

It was strongly recommended that KDC refine its proposal before it reaches the land use hearings. Issues such as feasibility and marketability should be fully addressed, suggested interviewees, so that the project is more credible to the community and public officials.

As KDC refines the concept for Kukui'ula Bay Village, those interviewed suggested that there be a preliminary program for onsite guest and resident activities to lessen usage of the south shore beaches. There were also suggestions

that access to Lawai Bay be provided so that the beach can be used for Kukui'ula guests and residents; some also suggested that public access be provided to this area.

Interviewees offered several suggestions to deal with the project's traffic. Most common was the suggestion to build the major arterial roads first, so that the hotel and condominium traffic is immediately diverted away from Lawai Road. There were also suggestions to build the westerly bypass early in the project, and to connect the bypass to Maluhia Road instead of stopping at Koloa Road. Two people asked that the proposed roadway near the National Botanical Garden Visitor Center be moved to the west of the facility to minimize impacts on existing makai homes. One person asked if it were possible to build the onsite roads to rural standards (narrower roads), rather than building wide city roads as in Poipu.

In terms of harbor improvements, boaters generally felt that the concept is too preliminary for substantive suggestions. Non-boaters wanted to see the harbor remain a "local place," and suggested that there be no restaurant at the harbor because they felt that this would become mostly a tourist attraction. They urged the State and KDC to build and maintain a full comfort station.

There were suggestions related to the operations of the harbor. In light of the current conflict between commercial and private boaters at Hanalei, interviewees did not want to see the harbor dominated by commercial users. It was strongly suggested that the State come up with clear policies about who can obtain moorings and that enforcement of these policies be done rigorously. It was also suggested that no jet skis be allowed in or near the harbor, and that absolutely no onstreet boat parking be allowed once the new parking area is provided.

Suggestions were made regarding project timing. Long time residents suggested that the project be implemented as soon as possible. They remembered that Kukui'ula has been on the drawing board for years, and they urged KDC to help the economy and begin building soon. Further, it was suggested that implementation of the overall Kukui'ula project begin with the proposed commercial area on the eastern end, on Poipu Road, rather than "in the middle of the area." This way, the infrastructure costs could be minimized by extending lines and roads on an as needed basis.

On another construction note, nearby residents asked to be kept informed as to the construction schedule and major activities which may generate dust, noise and vehicular traffic.

The project's "look" was a basis for many suggestions. Interviewees suggested that there be adequate provisions for sidewalks, plantings, and underground utilities. KDC was encouraged to make the hotel as attractive as possible. One person stressed, "It doesn't have to look like a three-star hotel."

They wanted the area to look Hawaiian, and suggested appropriate architecture for all structures; it was also recommended that the entire Kukui'ula Bay Village have a central architectural theme.

Four people did not want to see the hotel as proposed. Two suggested that no hotels be built in Kukui'ula, and the other two preferred to wait until all undeveloped and zoned resort land in Poipu is developed as planned.

It was suggested that KDC carefully monitor the marketing of timeshare units. It should be done onsite as much as possible. Further, there were suggestions that the timeshare and residential condominium units be built only as sold. One person recommended the elimination of the timeshare component. Another suggested that the hotel be designed for the eventual conversion to timeshare.

In terms of recreation, several suggestions were made about providing onsite recreation for guests. Other suggestions included converting A&B land makai of Lawai Road to park space, building a boardwalk along Poipu Beach and Kukui'ula. One person, admittedly an optimist, suggested that KDC establish the wetlands area in such a way so as to leave the marina option open.

## 6 Analysis

Section 6.1 analyzes comments about the existing community. An analysis of project-related comments is provided in Section 6.2.

### 6.1 Feelings About the Existing Community

The feelings about the strengths of the existing community are generally consistent with those expressed in the 1993 analysis, but there was less mention of non-social strengths, such as the physical environment and rural character. Of greater importance in this updated analysis is community cohesion and vocal citizen participation.

Compared to the 1993 analysis, the tone of community problems in this update has shifted from a hurricane recovery mode to a vital need for economic revitalization. In 1993, the community was beginning to recover from the physical damage from Hurricane Iniki. Houses were being rebuilt and the physical environment began to resemble its pre-hurricane days. People had hope that full recovery was underway. There were several predictions for a full recovery period, ranging from a year-and-a-half to five years.

That hope is less apparent now, and there is anxiety and uncertainty on a community level. Five years after the hurricane, two Poipu hotels have still not reopened. People are continuing to move away, and many families are surviving with less income than five years ago. And, unlike the hurricane situation, where the damages were obvious and could be solved by specific tangible actions, solving the current economic conditions is beyond the control of individuals and even a regional community. Hence, feelings of helplessness heighten the uncertainty.

In this time of economic woes, "the rapid pace of growth," which was a big problem in 1993, was never mentioned as a problem by those interviewed. Indeed, interviewees tended to prefer growth as at least a partial cure for economic problems.

In 1993, a community problem was the relationship between long time residents and newcomers. This problem has continued over the past five years, and some interviewees feel that it has increased, as newcomers become more active in community affairs.

## **6.2 Analysis of Reactions to the Kukui'ula Bay Village**

In the 1993 analysis, those interviewed expected the Kukui'ula development because plans had been discussed for several years. In this update, that expectation continues and is evolving into impatience. Interviewees want to see something built on the project site as soon as possible.

The main reason for this urgency is economic development. In light of economic problems, there is a feeling that the community needs to see some relief from the stagnant economy. If that means building the proposed Kukui'ula Bay Village for now, then some members of the community prefer that to no action.

The resort element seems generally acceptable to those interviewed, although there are questions about the quality level being considered at this time. Long time residents pointed out that there have always been visitor units in the Kukui'ula plans, and that the current project elements are consistent with the original plan.

The timeshare condominium component received mixed reactions. All interviewed had heard about the timeshare concept, but only some were very familiar with the actual product. There was concern that these units, as well as the residential condominium units, would be used as "transient rentals," which people felt were undesirable. Other issues, such as sales and marketing techniques, taxes and visitor spending, were raised as well.

The conceptual harbor improvements was generally acceptable, and more substantive comments are to be expected when specific plans are shared with the public.

The elimination of the marina has put some people at ease, but others had hoped that the marina would have met a critical need for boat slips and would have served as a major south shore attraction.

In the long run, the community still wants Kukui'ula to be a residential community. While moving the potentially higher revenue-producing uses to the forefront may be acceptable to some, the community wants to make sure that the houses, parks, golf course and other elements will also be realized soon.

This project is still in the planning stage, so many of the issues and concerns can be addressed as the plan becomes more refined. As this process unfolds, communication with the community is highly important. Now that the community has heard the early project information, it is important to follow up with discussions as information becomes available. Key points of the early discussions should include:

- the relationship between the Kukui'ula Bay Village and the larger Kukui'ula development, as well as with the Poipu region
- the general timing of the construction of residential units, the golf course and parks relative to Kukui'ula Bay Village
- the general timing of implementing the roadway infrastructure relative to Kukui'ula Bay Village
- how timeshare works and how this proposal will operate relative to the hotel
- possible improvements to the harbor, as well as the State's relationship to these improvements and the harbor's long term operation

## Appendix A List of People Interviewed

*(Affiliations are provided to give the reader an idea as to the cross section of interests reflected in this analysis. Interviewees shared their opinions as individuals, and were not asked to take a position for their organization.)*

Name	Affiliation
<b>Louis Abrams</b>	Member of the Community Advisory Committee for the Kaua'i General Plan Update Member of Kaua'i County Special Advisory Committee on Parks Chair of the Board, MLS Hawaii Commissioner of American Youth Soccer Organization Interviewed in the 1993 analysis
<b>Grace Blake</b>	Delegate to Na Kupuna Council for the Koloa Senior Center Member of the Policy Board of the Office of Elderly Affairs Member of the Advisory Council of the Retired Seniors Volunteer Program Interviewed in the 1993 analysis
<b>Annette Cassidy</b>	Board member of the Koloa Community Association President of the Garden Island Resource Conservation and Development
<b>Milton Ceria</b>	Lives immediately east of the project site Frequent user of nearby shoreline and Kukui'ula Harbor Interviewed in the 1993 analysis
<b>David Chang</b>	Board member of the Koloa Community Association Frequent user of nearby shoreline and Kukui'ula Harbor President of Chang's Bus Co. Interviewed in the 1993 analysis
<b>Rowena Cobb</b>	Member of Koloa Community Association
<b>Bea Donohugh</b>	Lives immediately south of the project site Member of Koloa Community Association Member of Kaua'i Historical Society Tour Guide at the National Tropical Botanical Garden



Name	Affiliation
<b>Don Donohugh</b>	Lives immediately south of the project site Member of Koloa Community Association Member of Kaua'i Historical Society
<b>Josephine Duvauchelle</b>	Lives immediately east of the project site Member of Delta Kappa Gamma (teachers' honorary society) Frequent user of nearby shoreline and Kukui'ula Harbor
<b>Ray Duvauchelle</b>	Lives immediately east of the project site Member of Lions Club Frequent user of nearby shoreline and Kukui'ula Harbor Interviewed in the 1993 analysis
<b>Andy Evans</b>	Board member of the Poipu Beach Resort Association Board member of Kaua'i Visitors Bureau President of Captain Andy's Sailing, Inc. Has permanent mooring at Kukui'ula Harbor Lives immediately south of the project site Interviewed in the 1993 analysis
<b>Rick Haviland</b>	Board member of the Koloa Community Association Owner of Outfitters Kauai (neighboring business) Has commercial permit for ramp use at Kukui'ula Harbor
<b>Wes Ikeda</b>	Frequent user of nearby shoreline and Kukui'ula Harbor
<b>Louis Jacintho</b>	Retired irrigation supervisor for 3 plantation companies
<b>Fred Jager</b>	President of Koloa Community Association Vice President of 1000 Friends of Kaua'i Advisor to Outdoor Circle Member of Kaua'i Historical Society Member of Kaua'i County Farm Bureau Interviewed in the 1993 analysis
<b>Greg Kamm</b>	Board member and Sargeant-at-arms of Koloa Community Association Member of American Waterworks Association Interviewed in the 1993 analysis
<b>Howard Kaohi</b>	Member of Hui Imu (O'ahu Hawaiian Club) Owner and future resident of property south of the project site

## Appendix A

## List of People Interviewed

Name	Affiliation
<b>LaFrance Kapaka-Arbo- leda</b>	Executive Director of Habitat for Humanity, Kaua'i Administrator of Ele'ele Iluna (affordable housing project) Member of Community Advisory Committee on the Kaua'i General Plan Update Interviewed in the 1993 analysis
<b>Margie Kaulili</b>	Member of Koloa Senior Center (operated by the Office of Elderly Affairs) Member of Alu Like Kupuna Program
<b>Springwater O. Kaulili</b>	Retired police officer
<b>Springwater K. Kaulili</b>	Frequent user of nearby shoreline and Kukui'ula Harbor
<b>Wendy Kawagu- chi</b>	Board member of Koloa Community Association Secretary of Sueoka Store
<b>Peter Kea</b>	Legal Advisor for the Royal Order of Kamehameha Board member of American Cancer Society Vice President of Kaua'i Bar Association
<b>Bob Keown</b>	Board member of Koloa Early School Member of the Koloa Community Association Member of the Board of Realtors Lives immediately southeast of the project site Frequent user of nearby shoreline and Kukui'ula Harbor Interviewed in the 1993 analysis
<b>Paul Kuriba- yashi</b>	Vice President of Kukui'ula Store, Inc. (neighboring busi- ness) Interviewed in the 1993 analysis
<b>Catherine Lo</b>	Member of Koloa Community Association Member of Friends of Kaua'i Library Member of Kaua'i Historical Society Lives immediately southeast of the project site
<b>Karl Lo</b>	Member of Koloa Community Association Member of Friends of Kaua'i Library Member of Kaua'i Historical Society Lives immediately southeast of the project site Frequent user of nearby shoreline and Kukui'ula Harbor

Name	Affiliation
<b>Mira Machado</b>	President of the Koloa Elementary School Parent Teacher Association
<b>Bob Marsh</b>	Member of Koloa Community Association Lives immediately south of the project site Interviewed in the 1993 analysis
<b>Joe McEvoy</b>	President-elect of Rotary Club of Poipu Beach Chief Referee of the American Youth Soccer Association Owner of Kaua'i Lumber Company
<b>Abel Medeiros</b>	Executive Board member of the Koloa Elementary School Parent Teacher Association Chair of the Hawai'i State Sub-Area Health Council Member of the Lions Club Member of the Kaua'i County Real Property Appeals Board Member of the Plantation Days Committee Frequent user of nearby shoreline and Kukui'ula Harbor Interviewed in the 1993 analysis
<b>Bob Merkle</b>	Member of the Koloa Community Association Interim Pastor of the Hanapepe Hawaiian Congregational Church Innkeeper of Gloria's Bed and Breakfast (business immediately south of the project site) Frequent user of nearby shoreline and Kukui'ula Harbor
<b>Gloria Merkle</b>	Member of the Koloa Community Association Member of Poipu Beach Resort Association Member of Kaua'i Visitors Bureau Docent at National Tropical Botanical Garden Innkeeper of Gloria's Bed and Breakfast (business immediately south of the project site) Frequent user of nearby shoreline and Kukui'ula Harbor
<b>Dennis Oliver</b>	Member of Koloa Community Association Lives immediately southeast of the project site Frequent user of nearby shoreline and Kukui'ula Harbor President of Puni Nani Pools, Inc.
<b>Marvin Otsuji</b>	Coach of Kiola Canoe Club President of Sea Sport Divers Has mooring in Kukui'ula Harbor Interviewed in the 1993 analysis

Name	Affiliation
<b>Lyle Otsuka</b>	Manager of Embassy Vacation Resort Member of Poipu Beach Resort Association Member of Kaua'i Visitors Bureau Interviewed in the 1993 analysis
<b>Henry Perez</b>	General Manager of Lawai Beach Resort (business immediately south of project site) Board member of Hawai'i Hotel Association, Kaua'i Chapter Executive Committee member of the American Resort Developers Association
<b>Margy Parker</b>	Executive Director of Poipu Beach Resort Association Marketing Committee member of Kaua'i Visitors Bureau Board member of Island School Treasurer of Koloa Plantation Days Celebration, Inc. Member of the Community Advisory Committee on the Kaua'i General Plan Update Member of Mayor's Beautification Task Force Interviewed in the 1993 analysis
<b>Warren Perry</b>	Legal Advisor for the Royal Order of Kamehameha Chair of the Board of Alu Like Interviewed in the 1993 analysis
<b>Ruth Potts</b>	Member of the Koloa Outrigger Canoe Club
<b>Bruce Sakimae</b>	Coach of Pop Warner Basketball Program Former long time coach for Pop Warner Football Program Frequent user of nearby shoreline and Kukui'ula Harbor
<b>James Scamhorn, M.D.</b>	Lives immediately east of the project site Frequent user of nearby shoreline and Kukui'ula Harbor Interviewed in the 1993 analysis
<b>C. E. Shimmelfennig</b>	Member of the Royal Order of Kamehameha, Kaumuali'i Chapter
<b>Julie Souza</b>	Vice President of the Ka'ahumanu Society Lives immediately southeast of the project site Front Office Manager at Lawai Beach Resort
<b>Rod Sueoka</b>	Member of Koloa Community Association Vice President of Sueoka Store Interviewed in the 1993 analysis

<b>Name</b>	<b>Affiliation</b>
<b>Michael Veith</b>	President of the National Tropical Botanical Garden Member of the Civil Air Patrol
<b>Thomas Yamasaki</b>	Member of Koloa Community Association Retired County planner Lives immediately southeast of the project site

**APPENDIX D**

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**Task 2 Discussion Document, Kukui`ula Project  
Kauai, Hawaii**



**SEDWAY KOTIN MOUCHLY GROUP**  
Real Estate and Urban Economics

**TASK 2 DISCUSSION DOCUMENT  
KUKUI'ULA PROJECT  
KAUAI, HAWAII**

**Prepared for:**

**A&B PROPERTIES, INC.**

**Prepared by:**

**SEDWAY KOTIN MOUCHLY GROUP**

**Date:**

**SEPTEMBER 23, 1996**

**FILE COPY**

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SEDWAY KOTIN MOUCHLY GROUP  
Real Estate and Urban Economics

September 23, 1996

Mr. Robert K. Sasaki, President  
A&B Properties, Inc.  
822 Bishop Street  
Honolulu, HI 96801-3440

Re: Kukui'ula Project: Task 2 Discussion Document - Summary of Findings and Conclusions

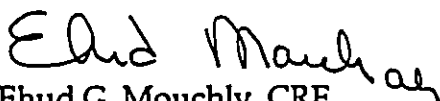
Dear Bob:

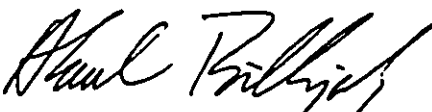
Sedway Kotin Mouchly Group (SKMG) is pleased to submit this summary of findings and conclusions relative to our "Task 2: Market and Concept Assessment" for your Kukui'ula property in Kauai. As part of this effort, we have completed the following:

- conducted an internal senior consulting staff "brainstorming" session regarding the market and conceptual possibilities for the property;
- screened all identified potential uses for market feasibility, based upon highly preliminary analysis;
- specifically examined, on a preliminary basis, the viability and need to develop a golf course at Kukui'ula; and
- developed alternative overall concepts for the project, including projections of pricing and absorption.

We look forward to our work session with you and the team on October 4, following your review of this document. Please let us know if you have any immediate questions or concerns.

With best wishes,

  
Ehud G. Mouchly, CRE  
Principal

  
Alan C. Billingsley, CRE  
Principal

EGM/ACB:nam  
Enclosure

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**DRAFT DISCUSSION DOCUMENT:  
MARKET AND CONCEPT ASSESSMENT FOR  
POTENTIAL DEVELOPMENT OF KUKUI'ULA**

**INTRODUCTION**

Sedway Kotin Mouchly Group (SKMG) is pleased to submit this summary of our findings and conclusions relative to the potential development of Kukui'ula, Alexander & Baldwin's (A&B) future Master Planned Community (MPC) located on the island of Kauai. The research and analysis effort is intended to assist A&B's planning efforts for the development of this visible and important property. In particular, we have examined issues regarding the market for resort, timeshare, residential, golf course, marina, commercial, and ancillary uses. Such ancillary uses include retirement, wellness center and spa, medical, and other recreational, such as equestrian and ecotourism activities. Additional uses that were considered and found to be impractical include theme park, amusement park, research park, light industrial park, and a boarding school.

The Kukui'ula MPC contains 1,045 acres and is located in Koloa, Kauai. This project was conceived as a quality development targeted to both local residents and Kauai visitors that would feature a self-contained community and amenities not available at other resident-oriented developments on the island.

We understand that Phase I of the development has received planning approval for an 18-hole golf course, 1,283 single-family detached homes, 645 attached units, a 14-acre commercial site and other ancillary uses. The remainder of the property is within a General Plan area having an "urban" designation, and is planned for an additional 917 single-family detached homes, 155 attached homes, 500 hotel rooms, and a marina. However, A&B is considering the potential for alternative development plan(s) that may respond to current market demand, or "create" it, in order to accelerate absorption, and may submit an application for a change in the site plan if found financially preferable.

**SKMG'S RECOMMENDED STRATEGY AND DEVELOPMENT PLAN**

**General Concept**

The greatest potential for the future of Kauai's economy is in visitor-related, leisure and second-home activities. The Kukui'ula site, located adjacent to Poipu, arguably the island's premier resort destination, is particularly well-suited to accommodate these activities. However, Kauai has performed poorly relative to Maui and the Big Island in capturing most aspects of this market.

To maximize the potential for the Kukui'ula MPC, SKMG strongly recommends that A&B Properties aggressively work toward strong promotion of the island in conjunction with governmental authorities. In SKMG's opinion, the most important near-term action to be promoted is the improvement of the Lihue Airport runway. Kauai suffers substantially from its poor access, particularly from the Mainland, relative to Maui and the Big Island. In the near term, the runway should be improved to allow for wide-body aircraft non-stop departures to the West Coast. In the longer term, further improvements should be contemplated that will allow aircraft departures on longer haul flights to the Mid-West and Japan. To provide an indication of the impact, SKMG estimates that initial service to Kauai of just two daily wide-body flights from California could increase visitation to the island by over 20 percent.<sup>1</sup> In the longer term, service from Japan could greatly benefit the island. Anecdotal evidence suggests that the recently inaugurated service to the Big Island is quite successful. Such service would place the Big Island and Kauai at a competitive advantage over Maui, currently the most popular of the outer islands for Japanese visitors. It is unlikely that Maui will improve its runway in the foreseeable future. The following recommendations assume improvement of the Lihue Airport.

SKMG recommends that Kukui'ula be developed primarily as a destination resort and second-home community, building upon activity at nearby Poipu. To create such a magnet-type development, a lagoon of significant size must be created, to bring the waterfront to the property, allowing for beaches, a marina and waterfront sites for hotel and retail development. The area along the lagoon will also serve as the center or core of the Kukui'ula MPC. The planned golf course is also essential to this concept. Revenue will primarily be generated by lot, home and condominium sales, so the development concept must maximize their appeal.

Considering the potentials for "ecotourism" and other beach-oriented destinations, SKMG further recommends that A&B Properties consider joint ventures with neighboring large land holders with properties that have particularly attractive topographical and beach features, e.g., the Robinson Ranch and Grove Farms. Collaborative arrangements with these owners will allow for coordinated synergistic development of land uses that are responsive to current and potential demand. Furthermore, a coalition of these owners could create a powerful private/public partnership for the promotion of Kauai within the state, on the Mainland and elsewhere in the Pacific Rim.

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<sup>1</sup>Assumes two daily DC-10 aircraft providing a total of 600 seats with an 80 percent load factor, thereby adding over 175,000 visitor arrivals annually; this compares with recent visitation of less than 800,000 annually.



## BACKGROUND FOR THIS TASK

SKMG has conducted a review of available existing data, conducted limited additional market research, and prepared a preliminary analysis for the potential development of Kukui'ula as follows:

- Reviewed demographic and economic data on the State of Hawaii and the island of Kauai, including visitation data.
- Compiled data on the historical and recent market trends for single-family detached homes and condominiums on the island of Kauai.
- Compiled data on the historical and recent market for timeshare units in Hawaii and on the island of Kauai.
- Compiled data on the historical market for resort properties in Hawaii and the island of Kauai.
- Compiled data on the historical market for golf courses in Kauai.
- Examined the potential for local-serving commercial uses, including retail and small office, in similar resort developments.
- Compiled data on the historical market for marinas in Hawaii and on Kauai.
- Reviewed information from various studies on ancillary uses including retirement, medical/wellness center, ecotourism, equestrian center, research and light industrial parks, and boarding schools in order to determine support for these uses at Kukui'ula.
- Surveyed the most competitive single-family detached and attached home developments in the Kukui'ula market area as to pricing, lot sizes, sales pace, premiums for golf course frontage, and other factors.
- Surveyed the most competitive timeshare developments in the Kukui'ula market area as to pricing, unit sizes, sales pace, and other factors.
- Surveyed marinas in Kauai as to number of boat slips, monthly rental, absorption, amenities, and other factors.
- Estimated the potential land value for various uses that SKMG has determined to have potential within the Kukui'ula MPC.

- Forecasted the probable nature of the competitive market until the year 2000. This includes a forecast of single-family detached and attached homes, resorts, golf courses, marinas, and local-serving retail and small office complexes.

#### CURRENT DEVELOPMENT PLANS

Kukui'ula is currently planned to offer both single-family lots and homes to provide a product mix that would appeal to both local residents and off-island markets. The lot sizes are planned to range from 6,000 to 13,000 square feet. Some of the lots would have golf course frontage, and the lots located in the mauka area would have excellent views of the ocean, golf course, and other open spaces in the makai section of the property.

For the multifamily units, the lower density product would typically consist of two-story townhomes located along the makai section of the property along the golf course. The higher density product would be in three- to four-story structures, located in clusters near the town center and marina. This product would offer good views of the marina, golf course, and mountains.

A town center is planned to be developed on approximately 70 acres of land surrounding the marina and would function as the major gathering place in Kukui'ula, similar to other smaller, old town developments like Koloa on Kauai and the heart of Lahaina on Maui. The current plan conceptualizes visitor accommodations including small inns in the town center. These facilities would take advantage of views of the marina and golf course, and would provide lodging facilities, dining, entertainment and a marketing identity to enhance the "self-contained" nature of Kukui'ula.

The marina is planned to accommodate approximately 200 boat slips ranging from 25 to 60 feet in length. This marina could cater to a combination of commercial fishing, sport fishing, tour, and recreational boats.

The 18-hole golf course would provide an important recreational amenity as well as green-belt areas throughout most of the central portion of the site. After the destruction caused by Hurricane Iniki, the golf course site has been relocated to also provide critical drainage and open space in an area that experienced flooding and damage from the high ocean surf. The golf course is currently planned to be open for public play and to offer kamaaina rates. The clubhouse is planned to be situated near the town center and marina and would have tennis and swimming facilities. The upward sloping terrain in the western portion of the course would provide many of the lots with good views of the golf course.

Other uses planned for the site include a neighborhood commercial center, school expansion site, parks, and a Botanical Gardens Visitor Center for the National Tropical Botanical Gardens that are adjacent to the property. The Visitor Center will be located near the



Spouting Horn Park, a tourist destination that currently attracts more visitors than any other attraction on the island.

## DISCUSSION OF ALTERNATIVE STRATEGIES AND POTENTIAL DEVELOPMENT PLANS

### Core Resort Uses

*Resort Hotel.* During the first several years of development, an "anchor" resort hotel will need to be developed. This recommendation is somewhat problematic, given the weak recent performance of the Kauai hotel market. In addition, the market must still absorb the future re-openings of three significant hotels. However, the overall Hawaiian hotel market is rapidly rebounding with rising occupancy and room rates. With improving economies in the U.S. and Japan, increases in visitation and improvement in air service are likely to continue through the next several years. This improvement will "spill-over" to Kauai. Improvements in air service will accelerate this process and will likely facilitate the re-openings of the Waiohai and Coco Palms hotels.

Despite the recovering hotel market, SKMG does not recommend the development of a traditional four- to five-star full-service hotel on the Kukui'ula property in the foreseeable future, but recommends a hotel having a distinctly different appeal. In general, a hotel having a relatively low price point, possibly not full service, and a low scale environmental appeal is recommended. Such a hotel would reflect an "ecotourism" image or theme, a concept that is receiving considerable attention in Hawaii currently. Thus far, most hotels developed in Hawaii having a distinct Hawaiian ambiance have been top-of-the-market facilities, including the hotels on Lanai, the Kona Village and the new Four Seasons. SKMG recommends targeting a similar ambiance with a much larger and more modest facility. Low-cost construction techniques other than steel and concrete, combining bungalows with low-rise structures and generous grounds, are recommended.

An all-inclusive resort is a potential concept for the Kukui'ula site, a concept that does not currently exist in Hawaii but that is found in many other sun destinations. Club Med and Pacific Island Club are excellent examples of this concept and are not currently operating in Hawaii. SKMG's conversations with executives of the Pacific Island Club met with considerable enthusiasm.

An alternative resort hotel concept would be a dedicated spa hotel, similar to Canyon Ranch, Doral Spa, Rancho de la Puerta, La Costa, and others. While major spas exist in Hawaii, a dedicated spa hotel has not been undertaken. SKMG believes that a market exists for a small spa hotel of 200 rooms or less.

*Retail.* A small resort-oriented retail center would be a strong asset to the Kukui'ula development, and would be a strong economic asset in the long term. An ideal site would

be a location on the waterfront, adjacent to a marina, while also near the hotel and condominiums. Because of the small visitor base in the early years, the center will need to be done in phases and will likely require subsidized operations. Tenants should include restaurants, galleries, sundries, deli, convenience (ABC-type store), resort wear and other recreational shops. Similar (although larger) successful models include Whaler's Village in Kaanapali and Kings Shops in Waikoloa.

*Marina.* There is a strong immediate demand for marina slips in Kauai. While this use does not generate much direct value, it is a substantial amenity to the resort with significant multipliers.

### Residential Uses

*Primary Housing.* The Kukui'ula MPC is not particularly well located for Kauai residents, due to its distance from population centers on the east side of the island. In addition, demand is quite shallow. Nevertheless, SKMG believes that some of the demand for executive homes can be captured at Kukui'ula, assuming that a subdivision with a separate non-resort image can be created. For one-fourth to one-third acre lots, prices of around \$125,000 could be achieved for a high-quality community. Nevertheless, absorption is likely to be slow, around 10 to 15 units per year. Land planning should take this into account by segregating the housing sites for local residents from the proposed resort, with each sub-community having a distinct character and appeal.

*Resort Homes.* SKMG believes that Kukui'ula can capture a portion of this market, which Kauai has historically been relatively unsuccessful in capturing. This market includes vacation, investment, pre-retirement and retirement homes. In addition, Mainlanders with mobile lifestyles could be attracted. The community must have an exclusive image and must be gated, with a strong golf course orientation. Distant ocean views are essential for a majority of the lots. Pricing in the \$150,000 range is achievable for one-third acre lots, with a \$100,000 premium for a golf course frontage.

*Condominiums.* The condominium market is just beginning to recover in Hawaii, and will have substantial potential in future years. Most buyers participate in a rental pool, while some hold their units for exclusive use. Pricing for two-bedroom units should average between \$200,000 and \$250,000.

*Timeshare Condominiums.* The timeshare market is well established in Kauai. While there is a current large inventory of unsold units, demand in the next few years should be strong and will absorb this inventory. Kukui'ula will be an excellent location for timeshare units.

*Active Retirement and Senior Housing.* SKMG does not recommend the development of age-restricted or care-oriented senior housing at Kukui'ula. However, some of the vacation housing will become *de facto* retirement housing.

## Amenity Uses

*Golf Course.* While the golf course market is currently quite weak, it should recover rapidly as visitation volume returns to the island. A golf course will be an essential component of this resort development, and will likely require some subsidization during the early years of development.

*Equestrian Center.* Kukui'ula will be an excellent location for an equestrian center, which will serve as a strong amenity to the Kukui'ula development and to the adjacent Poipu area. This will also fit the "ecotourism" theme of the resort, and has proved to be popular elsewhere in Hawaii, particularly on the Big Island. However, an equestrian center is likely to generate little to no land value.

*Incubator Office.* A small amount of office space in the village center, possibly within the retail center, would serve as an important amenity. Some buyers within the community are likely to telecommute, but also would like to work outside the home. Shared services would be important to such a development. As the resort nears build-out, it will also support some professional service offices.

## Other Uses

SKMG also examined the following uses, but does not recommend their inclusion in the Kukui'ula resort development:

- theme park;
- aquarium, zoo or wild animal park;
- retail mall;
- big box or discount retail center;
- medical center;
- wellness center;
- high technology/R&D park;
- light industrial park; and
- boarding school.

A summary of our key conclusions described above is provided on Table 1. The discussion below provides the support to these conclusions.





**TABLE I  
SUMMARY OF ANALYSIS OF LAND USE ALTERNATIVES FOR KUKUI'ULA**

Land Use	Opportunities	Constraints	Est. Absorp.	Est. Value
----------	---------------	-------------	--------------	------------

<b>I. Core Resort Uses</b>				
Hotel / Resort	Highly attractive location with potential access to the sea, man-made beach and marina. An "anchor" use. Possible moderately-priced "eco-tourism" or all-inclusive resort.	No approvals. Success dependent upon lagoon with man-made beach. Weak hotel market; need to identify unique market niche.	First 5 years	\$25,000-\$30,000 per room
Spa Hotel	Highly attractive location with potential access to the sea, man-made beach and marina. Would be first in Hawaii.	No approvals. Success dependent upon attracting one of the limited number of successful operators.	First 5 years	\$25,000-\$30,000 per room
Speciality/ Local Retail	May work as stand-alone use, in conjunction with marina and waterfront, serving the tourist trade in the general Poipu area. Highly compatible with resort, residential, and recreational uses. Although no approvals in Phase I, is part of the overall plan.	No approvals yet. Typically, speciality retail is dependent upon high discretionary income and impulse buying. Local serving retail is dependent upon a population base in close proximity. This use is highly dependent upon tourism in the area, and the development of a larger residential population. Difficult to make work and likely to require subsidy in early years.	Years 5-10	\$5-\$10 per square foot
Marina	Natural use of existing small boat harbor; demand for boat slips is strong; favorable weather conditions. Highly compatible with resort, residential, and recreational uses. Strong market.	Generate little value, but enhances other uses.	First 5 years	Minimal
<b>II. Residential Uses</b>				
Single-Family Detached - Primary Residences	Phase I approvals obtained; many view lots available; low density use. Compatible with resort, golf course, marina and recreational uses.	Weakness in local economy; small population base; probably require identity separate from resort.	10-15 per year	\$125,000 per lot
Single-Family Detached - Second Home/ Retirement/ Investment	Phase I approvals obtained; many view lots available; low density use. Compatible with resort, golf course, marina and recreational uses.	Current market for such units on Kauai is quite shallow. Will require aggressive off-island and on-island resort marketing.	10-20 per year	\$150,000 per lot. \$250,000 on golf course
Condo-minium	Phase I approvals obtained; many view lots available; moderate density use. Compatible with resort, golf course, marina and recreational uses.	Weak market on Kauai. Will require aggressive marketing.	20 per year	\$50,000-\$60,000 per unit average for land



**TABLE I  
SUMMARY OF ANALYSIS OF LAND USE ALTERNATIVES FOR KUKUI'ULA**

Land Use	Opportunities	Constraints	Est. Absorp.	Est. Value
Timeshare Condo-minium	Strong market acceptance; resurgence of old concept be strong operators; proven to be successful on Kauai (recently at the Marriott); demand can be drawn from a broad base on mainland and other locations; synergistic marketing opportunities; highly attractive location and weather; use compatible with resort, residential, recreational, and retirement.	Large current inventory of units.	1,000+ intervals per year	\$50,000-\$60,000 per unit average for land
Active Retirement	Compatible with resort, golf course, marina and recreational uses.	Very shallow market for age-restricted housing. Need to attract from Oahu and Mainland.	--	--
Senior Housing with Care Component	Beautiful surroundings and excellent weather; golf course planned in Phase I; May be attractive location for huge development that could serve Japanese demand for retirement and health care that cannot be met in Japan, but not corroborated at this time.	Lack of sophisticated medical facilities on Kauai, and perhaps medical specialists. Would require a large base of affluent senior population.	--	--
<b>III. Amenities</b>				
Golf Course	Phase I approvals obtained; many view lots available for home sites nearby. Use is an indicator for sale of homes. Could generate income as a stand-alone and create an identity for future development. Necessary for resort, residential, retirement, marina, beach and eco-tourism uses.	Weak demand currently; but sufficiently important to rest of development that subsidies may be worthwhile in the long run. Generates low land value.	First 5 years	Minimal
Equestrian Center	This ancillary use is compatible with resort, residential, and eco-tourism development. Sufficient land is available to accommodate stables and riding facilities.	Insufficient income generator as a stand-alone use. No approvals, but not seen as difficult to obtain. May be dependent on high-income users, and very demand-sensitive use. May need to be subsidized to attract home buyers and resort guests.	--	--
Incubator Office	"Smart" incubator offices may provide a demand inducer for residential and time-share users, as well as an amenity for resort and retirement development.	Insufficient demand for this use as "stand alone." No approvals in Phase I but conceptual plan could likely include.	--	--
<b>IV. Other Uses</b>				

TABLE I  
SUMMARY OF ANALYSIS OF LAND USE ALTERNATIVES FOR KUKUI'ULA

Land Use	Opportunities	Constraints	Est. Absorp.	Est. Value
Theme Park	Natural draw to Hawaii through external marketing of state in general and Kauai in particular; beautiful natural setting that could enhance exhibits and rides; such as Jurassic Park rides, since film was made on Kauai. Opportunity to create exhibits relating to the history of Hawaii. Kauai draws many tourists already, and a theme park is an added attraction.	Insufficient population base and visitors to warrant major theme park; demand for theme parks is already satisfied on the mainland and Japan; highly intensive use. adverse to Kauai's development policies and local attitudes. Requires at least one million visitor attendance annually, relative to 800,000 annual visitors to the island.	--	--
Aquarium/ Zoo/ Wild Animal Park	Natural draw to Hawaii through external marketing of state in general and Kauai in particular; beautiful natural setting that could enhance exhibits and habitats. Undeveloped, rugged lands owned by the Robinsons opportunity for collaborative efforts for wild animal park. Proximity to ocean lends itself to aquarium. Kauai draws many tourists already, and these uses would add tourist attractions.	Competition on Oahu; insufficient number of visitors to Kauai to support a major aquarium or zoo. No approvals on site; better locations for wild animal park on the island of Kauai.	--	--
Traditional Mall	Little or no opportunity is seen for this use at this location.	Insufficient population in area; competitive retail development exists in Puhi, Lihue and Kapa'a. Views and location of subject are better for residential and resort development, and the premiums such views can achieve.	--	--
Big Box	Little or no opportunity is seen for this use at this location.	Insufficient population in area; competitive retail development exists in Puhi, Lihue and Kapa'a. Views and location of subject are better for residential and resort development, and the premiums such views can achieve.	--	--
Discount	Little or no opportunity is seen for this use at this location. As a critical mass is established in the subject area, perhaps designer factory outlet stores will become feasible. Timing is not yet right.	Insufficient population in area; competitive retail development exists in Puhi, Lihue and Kapa'a. Views and location of subject are better for residential and resort development, and the premiums such views can achieve.	--	--
Medical Center	Would be highly compatible with retirement and residential development. The location would also serve West Kauai's local population.	Highly speculative and inappropriate location as a "stand alone" user. Insufficient sophisticated medical equipment and facilities on Kauai would put a large financial burden on new, state-of-the-art facility. Lack of highly-skilled medical specialists on the island would require recruitment from elsewhere, a difficult task.	--	--



**TABLE 1**  
**SUMMARY OF ANALYSIS OF LAND USE ALTERNATIVES FOR KUKUI'ULA**

Land Use	Opportunities	Constraints	Est. Absorp.	Est. Value
Wellness Center	Would be highly compatible with retirement and residential development. The location would also serve West Kauai's local population. This use could enhance the image of a spa/hotel and eco-tourism.	Highly speculative and inappropriate location as a "stand alone" user, due to insufficient population base with enough discretionary income to support such a facility.	-	-
High-Technology/R&D Park	Little or no opportunity is seen for this use at this location.	This type of use requires a highly skilled and educated workforce that can interface on a global basis with other manufacturing plants. Furthermore, the most economical use of the subject land is comprised of a variety of uses including resort, residential and recreational -- all uses that are not compatible with manufacturing, albeit clean and high-tech. The high-tech park in Kihei, Maui, is performing marginally at best with much of the land currently undeveloped.	-	-
Light Industrial Park	Little or no opportunity is seen for this use at this location.	This use is not compatible with resort, residential and recreational development. The subject land, with its many ocean views, provides opportunities for lot price premiums. Thus, light industrial use is better located in inland areas, near the airport and transportation hubs and where land is less valuable. Furthermore, the industrial park in Puhii, developed by Grove Farm, has had little success.	-	-
Boarding School	The location and views provide for an excellent site for a private school, such as Hawaii Preparatory Academy on the Big Island and Seabury Hall on Maui.	This use may work as a "stand-alone" but is not expected to generate sufficient income to warrant the displacement of other, more intensive, uses. The majority of students would come from outside Kauai, and such a market may be quite thin. Further, the majority of faculty would be recruited, by necessity, from outside Kauai. Such a speculative use may be better considered after a critical mass has been established in the area. It is important to note that Hawaii Preparatory Academy and Seabury Hall were founded close to established residential communities sufficiently affluent to contribute a number of "day" students to the student body.	-	-
Source: Sedway Kotin Mouchly Group. D:\14296\ALTUSES.WPD\DJR			September 24, 1996	

## ECONOMIC OVERVIEW

### State of Hawaii

After strong growth in the late 1980s, Hawaii's economy has been stagnant during the early 1990s, remaining at a fairly constant level between 1991 and 1995 of around 550,000 civilian employees. This slowdown parallels national trends. However, on the Mainland, including California, most urban areas experienced significant employment losses between 1990 and 1994. Within Northern California, a recovery began in 1995 that is continuing into 1996. Most of the remainder of the country began to recover earlier, except Southern California, which is lagging the northern part of the state.

The State of Hawaii is showing signs of an improved economy. June 1996 employment figures are showing about a 1.9 percent increase over the prior year. In particular, tourism has been increasing significantly over 1995 levels. Most economic indicators reflect an improving economy. Regional Financial Associates, Inc., a highly-respected econometrics forecasting firm, projects employment growth averaging a modest 0.9 percent annually through year 2000.

Tourism is a major sector of the Hawaiian economy. Declines in visitation in 1992 and 1993 heavily impacted the overall economy. Modest increases in 1994 and 1995 still left visitation levels about 5 percent below those of the 1990 peak. As of 1995, Oahu and Maui have experienced the strongest recoveries, achieving 97 and 99 percent, respectively, of their 1991 peak. The Big Island has experienced a weaker recovery, and remains 10 percent below its 1991 peak. Kauai, however, has experienced a disastrous decline. Visitation remains 39 percent below 1991 levels. Even worse, visitation declined between 1994 and 1995.

Forecasts for the state by the Bank of Hawaii indicate a 4 percent increase in 1996 and an additional 4 percent in 1997. These forecasts may be conservative given that visitor arrivals for the first half of 1996 are 5 percent above those for the same period in 1995. In any case, visitor volumes can be expected to recover their 1990 peak during 1997. Growth is expected to be substantially stronger from Asia than from the Mainland. In 1997, foreign visitation is forecast to exceed that from the Mainland for the first time. Japanese visitors comprise about 65 percent of foreign visitors.

During the 1990s, airlines have reduced their scheduled service to Hawaii from the Mainland due to reduced demand and a more prudent operating philosophy. Nevertheless, there has been an increased emphasis placed on service from California to the outer islands. However, only Maui and Kona airports can accommodate non-stop service in both directions. Currently, Maui is served by nearly eight daily flights by three airlines (increasing soon to nine daily flights by four airlines), and Kona is served by two daily flights, both provided by United Airlines. Prospects are excellent for increased service, particularly to Kona. This non-stop service provides these two islands with a distinct competitive advantage over Kauai.

In addition, the Big Island is the first outer island to offer non-stop service from Japan. Although just recently inaugurated with three weekly flights, this service is having a dramatic impact on Japanese visitation to the Kohalo Coast. The Kahalui Airport in Maui lacks a runway that could accommodate such long-haul flights, and politics are likely to prevent such a runway from being constructed in the near term. Thus, of the outer islands, the Big Island is likely to benefit the most from the growth in Japanese visitation during the next few years. With increased long-haul air service to the outer islands, they are offering increased competition with Oahu.

A recently released study by the WEFA Group concluded that tourism provides 30 percent of Hawaii's jobs and produces 24.3 percent of the gross state product, not including multiplier effects. It is clearly the state's largest industry.

#### Kauai

*Employment.* Kauai's economy has struggled, not only suffering from a state-wide and national recession, but also suffering from the aftermath of Hurricane Iniki in 1992. Employment "bottomed" in 1993 at a level 9 percent below that of 1991. Modest recovery has continued in 1995 and 1996. The size of Kauai's economy is quite modest, comprising only 5 percent of state-wide, 43 percent of Maui's, and 45 percent of Hawaii's jobs. Unemployment on Kauai remains high, almost double that of the entire state, even though it has fallen considerably from post-Iniki highs.

*Tourism.* While significant to Kauai's economy, tourism to this island is the least of the three major outer islands. In 1995, Kauai attracted fewer than 800,000 visitors. Thus, the island received only 34 percent of the visitors captured by Maui and 72 percent of those captured by the Big Island. As previously discussed, visitor arrivals were down 12 percent in 1995 over 1994 levels. In addition, Kauai achieves a very poor capture of Japanese visitors. Whereas 40 percent of visitors to the state arrived from the east, most of which arrived from Japan, only 13 percent of Kauai's visitors arrive from the west. Although higher-spending and higher growth Japanese visitation is critical to the state's tourism industry, Kauai is receiving little benefit from this segment

Tourism has been somewhat depressed by hotel closings as a result of hurricane Iniki. In fact, two of these major hotels – the Waiohai and the Coco Palms – still have no timeframe for reopening. The Kauai Marriott Resort opened in mid-1995 on the site of the former Westin Kauai, with 356 hotel rooms and 232 timeshare units. The Sheraton Hotel at Poipu is scheduled to reopen soon. Nevertheless, even with reduced room inventory, occupancy rates in the remaining operating hotels have been disappointing.

*Construction.* The surge in construction activity after Hurricane Iniki has mostly ended. The dollar volume of activity peaked in 1993 and 1994, and has fallen to below pre-hurricane levels in 1995. There is little construction activity in the pipeline for Kauai. New residential

construction in the 1990s has been down substantially from the highs achieved in the late 1980s, in spite of post-Iniki replacement construction. Industry observers do not foresee much improvement until 1997.

*Agriculture.* The agricultural economy of the Hawaiian Islands has been experiencing a long-term modest decline, with shifts in production from sugarcane and pineapple to other crops. While the agricultural industry is important to Kauai, it accounts for only 7 percent of the state's total production. Unfortunately, it accounts for 22 percent of the state's declining sugarcane industry. The sugar industry on Kauai has received several recent blows. The closure of Alexander & Baldwin's McBryde Sugar Company was announced in 1995, and marginal acreage at AMFAC/JMB's Lihue and Kekaha Plantations may be taken out of production. Consolidation of sugarcane operations on the south and southwest sides of Kauai may bring increased economies of scale on some of the most productive sugar land. However, those economies must be balanced against other fixed costs, and at some point the industry may become too small to be viable.

Some of the most productive agricultural land may be freed up for the development of other crops such as forestry, dryland taro, and coffee (which is now being grown on much of McBryde's land). These are growth crops within the state's agricultural economy.

*Military.* The Pacific Missile Range Facility at Barking Sands on the west side of Kauai provides almost 900 jobs, many of them at higher than average salaries. This facility makes Kauai the second most dependent after Oahu on the defense sector. The installation survived the 1995 list of base closures.

*Forecast.* First Hawaiian Bank's forecast for Kauai is "a long slow climb." Consumer confidence is slowly increasing, as it is in Honolulu. Kauai's population is slightly more optimistic about the future than Maui's and the Big Island's. This may well be because the physical effects of Hurricane Iniki are for the most part mitigated.

"The island remains one of the most desirable tourism destinations in the world. Its longer term future remains bright given the benefits of that tourism and its ancillary industries – all related to the island's picturesque sylvan environment and its spectacular natural features."<sup>2</sup> While reliable current projections are not available, the Kauai economy is expected to achieve modest growth during the next several years, driven primarily by tourism.

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<sup>2</sup>Supplement to *Economic Indicators*, "Kauai County Profiles," First Hawaiian Bank, November/December 1995.

## DEMOGRAPHIC OVERVIEW

### Population

The resident population on Kauai was estimated to be about 56,000 persons, or about 5 percent of the state's population as of July 1995.<sup>3</sup> This population estimate reflects a modest annual average growth rate of 1.7 percent since 1990, for a net addition of about 1,000 persons annually. However, in the past year, only 400 persons were added to the island's population. It should be noted, however, that these population estimates may overstate current population. Anecdotal evidence suggests that post-Iniki population remains as much as 20 percent below pre-Iniki figures. Population growth has clearly been depressed due to the poor job growth. Historically the Koloa district, where the Kukui'ula MPC is located, has included about 22 to 23 percent of the island's resident population.

### Households

According to the U.S. Bureau of the Census, the number of resident households on Kauai in 1990 was reported to be about 15,000. Estimates indicate an increase to about 17,200 by 1995, for an average annual increase of 440 per year.

## REAL ESTATE MARKET OVERVIEW

### Residential

*General.* New home construction in Kauai serves three major markets – the local resident, visitor rental, and second home markets. Construction tends to be cyclical. Based upon building permit data, from 1987 through 1990, single-family home construction was quite strong, with an average of 750 units annually. During the subsequent four-year period through 1994, an average of only 462 units were constructed annually. Volume fell further in 1995, with only 297 units receiving building permits. Multifamily construction has been somewhat sporadic, with 198 units permitted in 1988, 332 units in 1990, 145 units in 1992, 112 units in 1993, and 237 units in 1994. Few units received permits in interim years. In 1995, only 90 multifamily units received permits.

*Local Resident Market.* According to 1990 U.S. Bureau of the Census statistics, Kauai contained 17,613 housing units, of which 333 were seasonal, or second-home, units. In addition, the Hawaii State Department of Business reports 2,566 units as vacation rentals. Thus, 14,714 were utilized as local resident housing. Estimates indicate that this figure increased to about 15,000 by 1995.

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<sup>3</sup> Federal-State Cooperative Program for Population Estimates.



Forecasts available to SKMG include KPMG's projection in 1993 of growth averaging nearly 700 resident households annually on Kauai during the next 20 years. A more recent projection by The Hallstrom Group, Inc. anticipates an average of between 500 and 800 new households annually during the next 15 years. Assuming a reasonable recovery of Kauai's tourism industry, SKMG believes that a forecast of between 600 and 700 households annually is reasonable.

*Visitor Market.* As previously discussed, the Hawaii State Department of Business estimates 2,880 "nonresident" units in 1994 in Kauai. These nonresident units include rental pool vacation units – both single-family and condominium – intended for transient occupancy. This figure was up substantially from 1993 when less than 1,700 units were available. This probably reflects units taken out of the rental pool for repair or due to low visitor volumes after Hurricane Iniki. However, the 1994 figure is still down from 1989 when 3,034 vacation units were available. Presumably, some units have been converted to resident occupancy. SKMG has observed that some households purchase homes for both investment and future use. These parties place the units in a rental pool, but occupy the units upon retirement or semi-retirement. SKMG notes that the market for nonresident units in Hawaii is reemerging. Kauai's ability to capture this market will be heavily related to its ability to capture the visitor market.

*Second-home Market.* As previously discussed, the 1990 Census indicated only 333 units of housing on Kauai utilized as second homes. With a total of 12,800 such homes in the State of Hawaii, Kauai captures a small share of this market. Maui captures the largest share, or 46 percent of the market, while the Big Island captures 16 percent. Kauai's share comprises only 2.6 percent of the state's market. SKMG believes that Kauai has the potential to capture a more significant share of this market.

*Single-family Homes and Lots.* According to MLS Hawaii, Inc., 163 homes sold in Kauai in 1995 for a median price of \$239,000. This compares with 156 sales in 1991, with a median price of \$251,250. Lot prices in 1995 achieved a median of \$145,000, down substantially from \$238,750 in 1991 (which we believe to be an aberration). However, in the past few years, median prices have remained in the \$145,000 to \$160,000 range. A total of 99 lots sold in 1995. In 1993 and 1994, 167 and 130 lots sold, respectively. In general, pricing and sales volume has remained stagnant, with moderate declines, during the 1990s. Volume is increasing in 1996.

SKMG has examined the performance of single-family home lot sales programs in Kauai, as reflected in Exhibit 1. In Grove Farm's Puako subdivision, oriented primarily to the local population, SKMG has identified 56 lots that have sold between 1994 and 1996, for an absorption rate of 2.2 lots per month. Of these, 26 are non-golf course lots of less than 10,000 square feet, averaging 9,500 square feet, that have sold for an average of \$141,900. An additional seven lots are over 10,000 square feet, averaging nearly 11,000 square feet, that have sold for an average price of \$150,000. Finally, 18 golf course frontage lots sold, for an average price of over \$186,000. The average lot size is 11,000 square feet. Five larger golf



course frontage lots sold for an average of \$192,000, with an average size of about 15,000 square feet. Thus, golf course frontage lots achieve a premium of about \$35,000 to \$40,000.

SKMG examined lot sales in three communities oriented to second-home and vacation buyers, including Poipu Kai, Kiahuna Golf Course Village and Princeville Resort, as indicated in Exhibit 2. At Poipu Kai, ten sales were identified between late 1993 and 1996, with lot sizes averaging about 10,000 square feet and prices averaging over \$145,000. Prices ranged from \$100,000 to \$169,000. At Kiahuna Golf Course Village, eight sales averaged \$230,500, with lot sizes averaging about 11,000 square feet. Prices ranged from \$170,000 to \$315,000, the latter having excellent views. At the Princeville Resort, 35 sales were identified between 1993 and 1996, for an average of around 11 sales per year during the past three years. Sales prices averaged \$164,000, with lots averaging about 11,000 square feet. Prices ranged from \$75,000 to \$850,000. The high end of the range has a striking oceanfront orientation.

SKMG also identified home sales in these same three communities, as documented in Exhibit 3. As shown, home prices averaged \$321,700 at Poipu Kai, \$455,000 at Kiahuna Golf Course Village, and \$417,700 at Princeville. In general, SKMG has concluded that lot prices generally comprise between 35 and 45 percent of finished new home prices in these communities. The ratio is higher with golf course or waterfront orientation.

As an off-island comparable, SKMG examined the community of the Crown Lands of Keauhou, a project of the Bishop Estate on the Big Island's Kona Coast. SKMG is particularly familiar with this project due to consulting work conducted in 1992 and 1993. It is similar to Kukui'ula in that it is located along a sloping hillside overlooking the ocean, but it has no direct beach access. Currently, Bayview Estates is being marketed, with 51 one-third acre lots. Most lots have some view of the ocean, and range in price from \$175,000 to \$230,000, averaging around \$200,000. All lots have a graded pad for development. Three lots sold to a home builder and an additional three lots have sold to users. Keauhou Estates is a portion of the development that commenced sales in the early 1980s and is sold out. It is an upscale guard-gated golf-course-oriented development. It consists of a high-quality 18-hole golf course and about 130 lots, averaging about one-third acre in size. Unlike Bayview Estates, however, these lots lack graded pads, so that many homes incur expensive foundation costs. Lot resales average about \$200,000 with a distant ocean view. Lots on prime golf course frontage achieve an approximately \$150,000 premium.

*Condominiums.* According to MLS Hawaii, Inc., 106 condominiums sold in Kauai in 1995 for a median price of \$155,000. Volume and price are down somewhat from 1991, with 165 sales and a median price of \$162,500. These figures reflect a stagnant market for condominiums throughout the state during the past few years. In 1996, however, sales volume is increasing.

At this time, the market for new condominium units is still slow in Kauai, due to continued depressed prices. However, SKMG has examined the other outer islands and noted that

sales are beginning to revive in Maui and the Big Island. For instance, at Keahou, the Kaulana condominiums are being developed. A total of 258 stacked units are being developed on a 26-acre site, with distant ocean views. Prices range from \$217,000 for a 1,266-square-foot unit to \$339,000 for a top-floor 1,980-square-foot unit. With sales only recently begun on the first phase of 18 units, four units have sold.

At Waikoloa, the Vista Waikoloa condominiums are being marketed. These condominiums were constructed over the last two years, and prices were at one time set exceedingly high, from \$490,000 to \$579,000. Prices have been reduced by one-half for these 1,230- to 1,417-square-foot units. As a result, only seven unsold units remain out of approximately 100 units. Some units have an ocean view. A more upscale, but somewhat inland, new condominium development is currently being offered at Mauna Lani, known as The Islands.

### Lodging Market

Kauai's island-wide hotel occupancy rate for the year through October 1995 was 66 percent. While this rate is better than that of the recently over-built Big Island, it is substantially lower than the healthy occupancy rates of Maui and Oahu. In 1995, Maui achieved an average occupancy rate of 75.3 percent, while Oahu achieved an occupancy averaging 81.5 percent. These reflect very strong performance by industry standards.

Kauai has historically experienced weak hotel occupancy rates. Although average occupancy rates reached a relatively high 71.1 percent in 1989, occupancies dropped substantially in subsequent years to 59.4 percent in 1991. The Hurricane Iniki reduced room inventory by 40 percent by 1993, allowing occupancy rates to rise to 71.4 percent in 1994. Despite some hotel reopenings, occupancies reached 75.3 percent in 1994. Nevertheless, occupancies declined significantly in 1995.

As mentioned, Kauai's occupancy rate has been assisted by the continued closure of three significant hotels on the island. The bed base of nearly 5,900 rooms in 1995 reflects a 25 percent reduction from the pre-Iniki period. However, this base excludes the growing bed-and-breakfast segment of the industry. Some have observed a five-fold increase in bed-and-breakfast rooms in Poipu during the past five years.

The flagship Hyatt Regency Kauai in Poipu experienced occupancies in the high 80 percent range in 1995, possibly reflecting strong demand for high-quality hotels. Most of the activity comes from the Mainland, with only 6 percent from Japan.

"Ecotourism" is an emerging concept for resorts in Hawaii, generally referring to development that is compatible with the environment. In Hawaii, this generally means low-density and low-scale resorts, in contrast with high-rise hotels found in Waikiki and parts of Maui, and with a traditional "Hawaiian" feel in terms of design, traditions and landscape. Thus far, most prototypes have been quite upscale, including some of the hotels along the Kohalo

Coast such as the Kona Village and the new Four Seasons, and the two new hotels on Lanai. In addition, the 53,000-acre Molokai Ranch is being planned as an environmental tourism resort, with "low impact" recreation, such as hiking, horseback riding, camping, bicycling, hunting and ocean sports. An envisioned trend for ecotourism is to target more middle-market demand, rather than solely the upper end of the market.

### Timeshare Condominiums

According to the Hawaii Department of Commerce, as of March 1996, a total of over 3,000 timeshare condominium units with about 150,000 intervals have been registered state-wide. Of these, nearly 109,000 intervals have sold, and a remaining 41,000 are unsold or not yet constructed. While both Maui and the Big Island have captured a major share of timeshare units, Kauai is dominant, with 1,300 registered units, or 43 percent of the state-wide total. Thus, they are a significant factor in Kauai's visitor market. Upon absorption of the registered units, approximately 15 to 20 percent of Kauai's visitors may be timeshare owners, guests or exchange users.

Based on these March 1996 data, approximately 22,500 intervals are available for sale on Kauai. Over one-half of these intervals are the 232 timeshare units that are being marketed at the Marriott Kauai Resort. Other significant inventories are at the Lawai Beach Resort Condominiums and the Kauai Kailani/Mokihana of Kauai complex. Although there is currently a large unsold inventory of timeshare units on Kauai, it is clear that this is an active and promising market.

According to a recent article in *Urban Land*,<sup>4</sup> demand is expected to accelerate for timeshares in the United States. At least 10 percent of households with incomes of more than \$450,000 could own timeshare units within the next five to ten years, for a potential of 1.8 billion owners (relative to 1.6 million currently). A major current trend is development and marketing by "brand names," to overcome timeshares' sometimes disreputable past. Hence Disney, Hilton, Marriott, Embassy (Argosy/KOAR), and other major organizations are producing such units. These have particular advantage to hotel operators when constructed adjacent to their hotel property. Segmenting of the market is another current trend, targeting seniors and singles, in addition to the traditional young couple market.

### Retail

Kauai has been impacted dramatically by the advent of discount outlets, as has the rest of Hawaii. However, on Kauai the impact has been greater because of the small size of the

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<sup>4</sup>*Urban Land*, August 1996, published by the Urban Land Institute, "Timesharing, Keeping Pace with the Times," Richard L. Ragatz and Carol A. McInnis.

overall market. Total general excise tax base sales for Kauai in 1994 were only 2.5 percent of the state total, less than half that of the Big Island, and less than 40 percent of that for Maui.

The opening of Kmart at Kukui Grove Mall and Wal-Mart in Lihue made a big dent in the sales of existing merchants. Same-store sales at Kukui Grove Mall through the first nine months of 1995 were off dramatically from the previous year. On the other hand, the opening of the Marriott in 1995 at Kalapaki Beach injected greater life into retail outlets in the Nawiliwili area.

Given the resort nature of the area surrounding the Kukui'ula property, a resort-oriented retail center will be the most appropriate product for the Kukui'ula development, providing a combination of convenience goods, restaurants and visitor-oriented specialty shopping. This will be a particular challenge at Kukui'ula given the recent construction of a retail center at Poipu that has not been particularly successful. According to *Urban Land*,<sup>5</sup> resort retailing must have the following characteristics:

- intimate scale with distinct ambiance and strong pedestrian character;
- an "experience," enhancing the lifestyle appeal of the community;
- distinct architectural design that conveys a unifying theme;
- bars, restaurants and other entertainment that creates a social ambiance;
- logo shops and possibly higher-end merchandise with commemorative or iconic appeal; and
- ongoing program of entertainment or educational events.

Two excellent examples of such retail center in Hawaii include Whaler's Village in Kaanapali on Maui and Kings Shops in Waikoloa on the Big Island. However, these centers are larger than could be supportable on the Kukui'ula property.

### Golf

The National Golf Foundation (NGF) reports that 1994 domestic golf-related retail expenditures totaled \$6 billion, and greens and related fees amounted to \$10 billion. But while 360 new golf courses were opened last year, and 24.5 million people play golf, participation and rounds played have remained constant for the past five years. NGF is mounting a public relations program designed to make golf appealing to nongolfers.

Developers recognize that golf's appeal is uneven across the country, due to seasonality, topography, and economic conditions. Time availability also affects golf and is likely to be the industry's major change agent. With less time available, and with expanded alternative activities, people find a four- or five-hour golf game too big a time commitment. Par-3

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<sup>5</sup> *Urban Land*, August 1996, "Resort Retailing, Finding the Right Mix," Mick Matheusik.

courses are a response to this issue and are enjoying renewed popularity. The relatively short par-3 golf game appeals to busy families and makes it possible for children to play with their parents. The briefer game is also less intimidating to the prospective golfer than is a regulation golf course. Par-3 can introduce new players to the game, can be an excellent way to enhance teaching clinic revenues and pro shop sales, and can contribute to future demand for the more capital-intensive regulation course.

The State of Hawaii accommodates a total of 76 18-hole equivalent golf courses. Of these, eight are on Kauai. According to Coopers & Lybrand, 4.8 million rounds were played in the state in 1994, for an average of 63,000 rounds per 18-hole course, a very healthy average reflecting strong demand.

According to a survey by SKMG, the Poipu Bay Resort course attains fees of \$135 per round, with discounted fees to resort guest of \$85. We were unable to obtain fees for the Kiahuna (Sports Shinko) course. At Princeville, the Princeville Golf Club charges fees of \$150 per round, but attains only 28,000 annual rounds. The Princeville Makai course, with 27 holes, obtains \$115 green fees and achieves a modest 42,000 annual rounds. The Kiele and Lagoons courses at Kauai Lagoons achieve fees of \$145 and \$100, respectively. For the above private courses, even with special Kamaaina rates, few patrons are local. Kauai also has one small municipal course, Wailua Municipal Golf Course. With rates of \$25 weekdays and \$35 weekends, this course achieves approximately 100,000 annual rounds, most of which is derived from local residents.

#### Marina

Demand for marina slips is strong in the Hawaiian Islands. SKMG researched two marinas in Kauai, both of which maintain wait lists. The Nawiliwili Marina maintains a three- to five-year wait list. Rental rates are \$2.80 per lineal foot, plus a \$5.75 electrical charge, per month. At Port Allen, near Hanapepe, rental rates are the same with a five- to seven-year wait list. Transients are accommodated in berths whose occupants are temporarily at sea.

Two marinas were also examined in Maui. Maalaea is full, but has no wait list. Lahaina Marina maintains an 18-year wait list, but offers very low rents.

## OTHER POTENTIAL USES

### Incubator Office/Resort Technology

Resort developers should evaluate the possibility of providing computer access and entertainment facilities to guests when those amenities suit a particular setting.<sup>6</sup> Over the next decade, the number of resort guests with two breadwinners in the family will only grow. Both parties may have to attend to business, either as planned or on short notice, increasing the demand for video conferencing services and computers with online, intranets and Internet access. The vacation property that helps guests avoid the inconvenience, disruption, and additional expense of abrupt treks back home will win over vacationers, near-retirees, and telecommuters with a more leisurely vacation experience than will a resort where technology is not an option.

### Research and Industrial Parks

The term "industrial park" is slowly fading from use; to many it connotes a less advanced form of development. Business parks have been given a variety of names such as business campus, research park, technology park, park of commerce, and business center. In some cases, they are still called industrial parks or complexes. Often the generic type of park no longer appears in the title; the title is simply a geographic place name.

*Research Parks.* Research parks (alternatively called science or technology parks) are defined here as organizational entities that sell or lease spatially contiguous land and/or buildings to businesses or other organizations whose principal activities are basic or applied research or development of new products or processes. This definition excludes entire high-tech centers or corridors, where high-technology businesses have concentrated outside of formal organizations. It also excludes industrial parks, in which manufacturing is the primary focus, and office parks, where administration or sales is the main function.

An interesting implication of this relatively narrow definition is that "mortality refers to a park that has failed as a real estate or business venture and ceases to exist at all, or that has changed from a research park to an office, industrial, or mixed-use park." This is an important point because several different authors have reported that about one-half of all announced research parks do not achieve viability, and of those that do, about one-half are forced to diversify their activities out of research and development in order to survive.

Regions are more likely to have growth induced by research parks if a university (or other research-oriented organization) is present. This reflects the fact that universities contribute to the creation of "localization economies" for park businesses or the presence of resources

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<sup>6</sup>*Urban Land*, August 1995, "Redefining Resorts," Ralph Bowden.

that businesses of the same type (concentrated in research parks) need, including specialized laboratory facilities, faculty expertise for consulting, and a regular supply of graduates for entry-level professional jobs. Alternatively, a large existing base of research industries creates a suitable environment in which new industries can seek trained employees.

Research shows that (1) R&D is highly clustered in a relatively small number of areas; (2) a suitable supply of scientists, engineers, and technicians is one of the most important factors for the spatial clustering of R&D; (3) agglomeration economies seem to matter to several R&D industries; (4) metropolitan area size, as an indicator of agglomeration economies, is highly correlated with the concentration of private industrial R&D facilities, but not with the concentration of other institutional forms of R&D (for example, universities and government laboratories); (5) areas with federal research facilities and research-oriented universities, which are disproportionately located in smaller areas, are associated with high concentrations of R&D employment; and (6) areas with high concentrations of manufacturing activity are associated with high concentrations of R&D activity.

Thus, the theory supports the development of research parks in both populous areas and in small metropolitan areas with an existing research base. Large areas offer local economies in business services, depth of labor market, and proximity to headquarters functions. Smaller areas generally promise success only when they offer the magnet of a research university or other major government research laboratory/facility. SKMG does not believe that Kauai provides a favorable environment for a research park.

*Industrial Parks.* Communities with industrial parks have higher numbers of manufacturing firms than comparable communities without industrial parks. In addition, the larger the acreage of industrial park land, the larger the number of firms locating in the community. However, the mere presence of industrial park land is not itself the positive influence on firm location. That is, industrial parks are not "fields of dreams." Just because you build it, it does not mean that they will come.<sup>7</sup>

Studies have shown that industrial parks are most likely to be present and viable in those communities having the characteristics associated with the ideal industrial sites, as well as communities whose growth and structure more easily allow industrial land use to be accommodated. The results suggest that building an industrial park on the absence of ancillary infrastructure or locational advantage (such as highway access; rail, air, or shipping access; fire protection quality, population density and growth, and the age of the community), does not offer a high likelihood of success. A low cost but skilled labor force is also an important ingredient.

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<sup>7</sup>*Economic Development Quarterly*, February 1993, "Planned Industrial and Commercial Developments in the United States: A Review of the History, Literature, and Empirical Evidence Regarding Industrial Parks and Research Parks," Michael T. Peddle.



The increased cost of building and maintaining infrastructure and the growing concern about managed growth and development have also affected the evolution of business parks. SKMG believes that industrial park demand will be modest on Kauai. To the extent that demand develops, it will be best captured near Lihue, the port and the airport.

### Senior Housing

Developing housing for elderly people will be a burgeoning industry in the U.S. during the next two or three decades. Not only are Americans living longer, but also the huge postwar "baby boom" generation is aging. By 2020, almost one in five Americans will be over 65 years old. By 2030, the number of people aged 65 and older will more than double, to 70 million. And elderly people increasingly need and want housing attuned to their special needs.

Professionals in the field of senior housing sound a warning, however. Housing for seniors is unlike other residential development in that it almost always involves some recognition of the health care needs of frail elderly people. The special services they require, which increasingly reflect the aging-in-place concept, introduce a major (nonproperty) management component to housing development. Indeed, specialists like to compare housing for seniors with hotel development and administration rather than with traditional residential development.

In addition, seniors' needs are evolving rapidly, especially as health care programs are changing throughout the nation. Definitions of desirable or required services in housing projects for seniors are shifting, and attempts to deal with the changing status of individual residents demand new development and management approaches. The industry is still recovering from one significant miscalculation of the market for seniors. Major investments made in the 1970s and early 1980s assumed that large numbers of retired couples aged 65 to 75 would eagerly move to new homes, but ignored their needs for supportive social and health care services. The financial shake-out that ensued when most seniors elected to stay in their life-long homes starkly demonstrated that the niche market for housing seniors represents a blurred and moving target. Developers looking for opportunities should recognize the fluid market conditions and the management necessities of this special form of residential development.

When assessing the housing needs of seniors, one cannot ignore a fundamental factor: elderly people are notoriously resistant to moving from their present homes. Most have lived in their homes and communities for many years and expect to continue living there. A 1992 survey of persons aged 55 and over by the American Association of Retired Persons found that almost a quarter had lived in their current residences for more than 30 years and more than half had lived in the same geographic area for over 30 years. Nearly three-quarters of them believed their current residences would be permanent, and 84 percent indicated that they would like to "stay in my own home and never move."

However, elderly people find it necessary to move for a host of reasons, including deteriorating surroundings and living conditions that threaten their personal and financial security. Most often, their health begins to decline. As they age, they find it more difficult to care for themselves and a home. Their vision, hearing, and mobility may deteriorate, or they may become disabled and subject to chronic, debilitating diseases.

Today, more opportunities exist for seniors to have housing that provides not only living space but also support services. Probably the most rapidly expanding supply of housing intended expressly for seniors is being developed and managed by private firms, frequently in partnership with nonprofit organizations. A substantial amount of housing for seniors is developed especially for independent elderly people seeking the company of other seniors and a variety of recreational and other amenities, who rent or purchase units in single buildings as well as large retirement communities. Many development companies, including Del Webb, Leisure World, and other major firms, focus most of their development activities on large- and small-scale projects for active adults and retirees. For seniors desiring or needing some types of services short of 24-hour nursing care, however, three general types of housing are identified: congregate-care housing, assisted-living facilities, and continuing care retirement communities.

For the development of market-rate senior housing, one must draw upon a large base of relatively affluent seniors, generally aged 60 and more for active adult communities, and 70 and more for facilities including a level of care. For an active adult community, SKMG does not believe Kauai to be an appropriate location for a dedicated community. Such a retirement community would need to draw heavily from Oahu, and we are skeptical that a large number of residents from that island could be attracted. For congregate care, assisted-living or continuing care retirement communities, the draw would need to be primarily Kauai residents and the parents of Kauai residents. The population and the demographics of Kauai do not yet support such a facility. However, in the future, such a facility could be supportable, as more persons retire to the island.

SKMG notes, however, that many resort-oriented home programs become *de facto* retirement communities. Typically, many buyers purchase a home pre-retirement, with the family utilizing that home as retirement approaches. The home then often becomes a primary residence upon retirement. Many such owners do not want to live in a dedicated retirement community, however.

#### Wellness Center/Spa

Wellness centers and spas are an increasingly important component of resorts. In particular, the Hilton Waikoloa Village and the Grand Wailea Resort feature elaborate spa facilities. Thus far, however, no dedicated spa facility has been developed, such as the Canyon Ranch spas in Arizona and Massachusetts, the Doral Spa in Florida, the La Costa resort in California, or the Rancho de la Puerta spa in northern Mexico. SKMG believes that there

could be a market for such a facility in Hawaii, including the Kukui'ula property. In conjunction with an "ecotourism" theme for the property, this would be a particularly appealing use.

#### Recreational Attraction

A theme park, aquarium, zoo or wild animal park has also been considered for the Kukui'ula property. Unfortunately, these uses require high rates of visitor volume to cover their high construction and operating costs, generally in the one million annual attendance range and above. With fewer than 800,000 visitor arrivals in Kauai in 1995, such use is clearly not supportable.

#### Equestrian Center

Equestrian centers are increasingly important amenities to destination resorts. While they generally are not able to support a land value, if well operated, they can be self-supporting. Nevertheless, they should be viewed as an amenity, rather than an income-generator.

#### Medical Center

SKMG does not believe that the Kukui'ula site is well-located to support a medical center. Nonetheless, it would need to compete with existing facilities in Lihue. A specialized clinic, such as that recently opened in Waimea on the Big Island, would be very difficult to attract. Hence, extremely favorable terms for the land would need to be offered, even if an operator would be interested.

#### Boarding School

The Hawaiian Islands support several prestigious boarding schools, as an alternative to the state's poor school system. Because of the limited market on Kauai, such a facility would need to draw from Oahu. SKMG is skeptical that Kauai could compete with such facilities on Oahu, Maui and the Big Island. In the future, however, a private non-boarding school, oriented to local residents, might be supportable. Unfortunately, this is a use that would be an amenity but would be unlikely to support significant land value.



## ASSUMPTIONS AND GENERAL LIMITING CONDITIONS

Sedway Kotin Mouchly Group (SKMG) has made extensive efforts to confirm the accuracy and timeliness of the information contained in this study. Such information was compiled from a variety of sources, including interviews with government officials, review of City and County documents, and other third parties deemed to be reliable. Although SKMG believes all information in this study is correct, it does not warrant the accuracy of such information and assumes no responsibility for inaccuracies in the information by third parties. We have no responsibility to update this report for events and circumstances occurring after the date of this report. Further, no guarantee is made as to the possible effect on development of present or future federal, state or local legislation, including any regarding environmental or ecological matters.

The accompanying projections and analyses are based on estimates and assumptions developed in connection with the study. In turn, these assumptions, and their relation to the projections, were developed using currently available economic data and other relevant information. It is the nature of forecasting, however, that some assumptions may not materialize, and unanticipated events and circumstances may occur. Therefore, actual results achieved during the projection period will likely vary from the projections, and some of the variations may be material to the conclusions of the analysis.

Contractual obligations do not include access to or ownership transfer of any electronic data processing files, programs or models completed directly for or as by-products of this research effort, unless explicitly so agreed as part of the contract.

This report may not be used for any purpose other than that for which it is prepared. Neither all nor any part of the contents of this study shall be disseminated to the public through publication advertising media, public relations, news media, sales media, or any other public means of communication without prior written consent and approval of Sedway Kotin Mouchly Group.



EXHIBITS



**EXHIBIT 1  
SINGLE FAMILY RESIDENTIAL SALES  
GROVE FARM PUAKO SUBDIVISION  
1994-1996**

<b>Tax Map Key</b>	<b>Land Area (sq. ft.)</b>	<b>Sale Date</b>	<b>Sale Price</b>
<b>Size Range: 8,001 - 10,000</b>			
3-3-16-31	9,009	02/17/95	\$141,245
3-3-16-49	9,027	12/22/94	\$137,195
3-3-16-30	9,035	02/14/95	\$144,384
3-3-16-27	9,156	03/02/95	\$146,496
3-3-16-79	9,248	01/31/95	\$147,968
3-3-16-26	9,252	12/16/94	\$145,071
3-3-16-87	9,267	06/28/96	\$119,000
3-3-16-59	9,298	01/31/95	\$144,793
3-3-16-28	9,367	02/09/95	\$149,872
3-3-16-15	9,459	09/10/96	\$119,000
3-3-16-24	9,541	02/15/95	\$152,656
3-3-16-14	9,670	12/22/94	\$151,626
3-3-16-16	9,710	05/31/96	\$121,800
3-3-16-02	9,712	12/28/94	\$147,638
3-3-16-54	9,732	Escrow	\$124,500
3-3-16-55	9,740	02/15/95	\$152,723
3-3-16-17	9,760	01/31/95	\$153,037
3-3-16-88	9,789	Escrow	\$125,200
3-3-16-85	9,796	12/29/94	\$156,720
3-3-16-12	9,815	02/09/95	\$157,040
3-3-16-25	9,822	Escrow	\$123,200
3-3-16-01	9,828	01/26/95	\$149,370
3-3-16-48	9,831	01/31/95	\$157,296
3-3-16-11	9,845	Escrow	\$126,000
3-3-16-13	9,849	01/25/95	\$154,432
3-3-16-53	9,916	09/29/95	\$140,000
<b>Average Price: \$141,856</b>			
<b>Size Range: 10,001 to 13,000</b>			
3-3-16-47	10,024	Escrow	\$128,300
3-3-16-50	10,109	Escrow	\$132,000
3-3-16-42	10,482	01/31/95	\$167,712
3-3-16-51	10,558	01/09/95	\$168,928
3-3-16-89	10,617	12/23/94	\$161,394
3-3-16-64	11,828	08/30/96	\$143,800
<b>Average Price: \$150,356</b>			

Continued...



EXHIBIT 1  
SINGLE FAMILY RESIDENTIAL SALES  
GROVE FARM PUAKO SUBDIVISION  
1994-1996

Tax Map Key	Land Area (sq. ft.)	Sale Date	Sale Price
<b>Size Range: 13,001 and Up</b>			
3-3-16-44	13,229	Escrow	\$145,000
<b>Average Price: \$145,000</b>			
<b><u>Golf Course Frontage</u></b>			
<b>Size Range: 10,001 to 13,000</b>			
3-3-16-67	10,051	08/09/96	\$140,000
3-3-16-68	10,056	10/10/95	\$184,628
3-3-16-69	10,319	02/28/95	\$189,457
3-3-16-70	10,322	12/28/94	\$185,796
3-3-16-19	10,471	01/12/95	\$192,248
3-3-16-76	10,472	01/26/95	\$192,284
3-3-16-34	10,703	Escrow	\$151,700
3-3-16-40	10,927	12/29/95	\$301,478
3-3-16-36	10,931	Escrow	\$147,500
3-3-16-39	10,984	11/30/95	\$207,598
3-3-16-74	11,004	Escrow	\$150,000
3-3-16-20	11,113	11/30/95	\$179,628
3-3-16-65	11,299	Escrow	\$152,500
3-3-16-38	11,440	01/30/95	\$216,200
3-3-16-66	11,688	07/01/96	\$160,900
3-3-16-75	11,967	01/26/95	\$215,406
3-3-16-37	12,039	Escrow	\$162,500
3-3-16-73	12,247	12/22/94	\$220,464
<b>Average Price: \$186,127</b>			

Continued...



EXHIBIT 1  
SINGLE FAMILY RESIDENTIAL SALES  
GROVE FARM PUAKO SUBDIVISION  
1994-1996

Tax Map Key	Land Area (sq. ft.)	Sale Date	Sale Price
<b>Golf Course Frontage Cont.</b>			
<b>Size Range: 13,001 and Up</b>			
3-3-16-35	13,238	05/31/96	\$187,600
3-3-16-21	13,449	Escrow	\$185,200
3-3-16-71	13,544	07/16/96	\$186,500
3-3-16-33	14,315	07/09/96	\$197,000
3-3-16-77	19,898	05/06/96	\$203,000
			<b>Averages: \$191,860</b>
			<b>Overall Average: \$161,518</b>
<b>Absorption: 56 Lots Sold / 25 Months = 2.24 Lot Sales Per Month</b>			
<b>Notes:</b> Prices were lowered approx. 20% in April 1996. Sources: The Hallstrom Group, Inc., Sedway Kotin Mouchly Group D:\14296\SFRNEW.WK4\VJM			



**EXHIBIT 2  
RESIDENTIAL LAND SALES  
SELECTED AREAS  
1993-1996**

Area	Tax Map Key	Land Area	Sale Date	Sale Price
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**Poipu Kai**

	4-2-8-028-026	6,784	10/05/94	\$140,000
	4-2-8-028-041	7,313	08/22/95	\$119,500
	4-2-8-028-057	9,755	09/05/95	\$150,000
	4-2-8-028-078	9,991	08/19/96	\$160,000
	4-2-8-028-077	10,470	09/29/94	\$169,000
	4-2-8-028-062	10,585	07/29/94	\$145,000
	4-2-8-028-091	10,858	12/21/93	\$100,000
	4-2-8-028-061	11,564	05/05/93	\$160,000
	4-2-8-028-082	12,459	02/15/96	\$160,000
	4-2-8-028-056	12,643	06/08/95	\$150,000

<b>Averages:</b>		<b>10,242</b>		<b>\$145,350</b>
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**Kiahuna Golf Course Village**

	4-2-8-029-028	9,515	05/04/95	\$280,000
	4-2-8-029-090	9,560	03/01/93	\$225,000
	4-2-8-029-049	10,108	04/21/95	\$170,000
	4-2-8-029-020	11,432	04/16/93	\$280,000
	4-2-8-029-003	11,577	06/16/95	\$223,000
	4-2-8-029-073	11,682	07/29/94	\$177,000
	4-2-8-029-088	11,761	02/18/94	\$174,000
	4-2-8-029-023	12,071	06/29/94	\$315,000

<b>Averages:</b>		<b>10,963</b>		<b>\$230,500</b>
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**EXHIBIT 2  
RESIDENTIAL LAND SALES  
SELECTED AREAS  
1993-1996**

<u>Area</u>	<u>Tax Map Key</u>	<u>Land Area</u>	<u>Sale Date</u>	<u>Sale Price</u>
<u>Princeville</u>				
	4-5-3-012-042	8,041	12/28/94	\$129,900
	4-5-3-012-030	8,072	04/24/95	\$129,900
	4-5-3-012-002	8,641	08/18/94	\$195,000
	4-5-4-023-073	8,670	04/04/95	\$225,000
	4-5-3-012-021	9,086	03/29/94	\$500,000
	4-5-4-016-011	9,333	07/27/94	\$100,000
	4-5-4-016-029	9,519	04/08/96	\$100,000
	4-5-4-014-022	9,792	11/09/95	\$90,000
	4-5-4-017-036	9,873	10/13/95	\$96,000
	4-5-4-016-005	9,947	02/04/94	\$100,000
	4-5-4-020-033	9,979	12/01/94	\$100,000
	4-5-4-018-003	10,029	07/05/94	\$170,000
	4-5-4-013-055	10,224	02/25/94	\$110,000
	4-5-4-016-003	10,307	04/11/95	\$81,500
	4-5-4-008-044	10,315	11/21/94	\$120,000
	4-5-4-013-062	10,371	03/31/93	\$115,000
	4-5-4-014-003	10,375	06/16/94	\$110,000
	4-5-4-013-027	10,400	12/03/93	\$206,000
	4-5-4-017-058	10,500	08/25/95	\$100,000
	4-5-4-017-063	10,563	06/30/93	\$127,000
	4-5-4-018-019	10,595	01/16/96	\$850,000
	4-5-4-013-063	10,665	05/02/95	\$84,000
	4-5-4-017-005	10,875	06/28/96	\$112,500
	4-5-4-007-013	10,993	02/15/94	\$120,000

Continued...



**EXHIBIT 2  
RESIDENTIAL LAND SALES  
SELECTED AREAS  
1993-1996**

<b>Area</b>	<b>Tax Map Key</b>	<b>Land Area</b>	<b>Sale Date</b>	<b>Sale Price</b>
<b><u>Princeville Cont.</u></b>				
	4-5-4-013-005	11,178	08/25/93	\$115,000
	4-5-4-013-030	11,372	12/22/94	\$395,000
	4-5-4-013-047	11,694	02/08/95	\$85,000
	4-5-4-017-040	11,778	06/12/96	\$77,000
	4-5-4-018-010	12,200	05/24/96	\$207,500
	4-5-4-007-006	12,575	06/24/94	\$102,000
	4-5-4-016-052	13,622	05/31/96	\$75,000
	4-5-4-013-024	14,406	02/22/96	\$450,000
	4-5-4-020-016	20,096	01/10/96	\$95,000
	4-5-4-020-017	20,485	03/31/94	\$115,996
	4-5-4-020-008	22,783	11/17/93	\$115,000
	<b>Averages:</b>	<b>11,410</b>		<b>\$164,008</b>
Sources: The Hallstrom Group, Inc.; and Sedway Kotin Mouchly Group. D:\14296\LANDSLS.WK4\VJM				



EXHIBIT 3  
SINGLE FAMILY RESIDENTIAL SALES  
SELECTED AREAS  
1993-1996

Area Tax Map Key	Land Area (sq. ft.)	Bldg. (sq. ft.)	Assessed Bldg. Value	Year Built	Sale Date	Sale Price
<b>Poipu Kai</b>						
4-2-8-028-020	6,000	1,306	\$116,500	1988	11/25/94	\$315,000
4-2-8-028-023	6,033	1,736	\$179,700	1988	05/16/95	\$325,000
4-2-8-028-035	7,662	1,742	\$145,400	1986	07/08/96	\$270,000
4-2-8-028-039	7,638	1,880	\$184,800	1988	01/28/93	\$305,000
4-2-8-028-048	9,375	1,736	\$168,700	1987	08/23/93	\$355,000
4-2-8-028-055	13,777	1,841	\$187,200	1990	09/15/95	\$350,000
4-2-8-028-060	8,735	2,298	\$226,700	1986	03/31/94	\$330,000
4-2-8-028-074	12,050	1,842	\$201,300	1988	06/29/93	\$375,000
4-2-8-028-089	13,964	1,989	\$167,200	1986	03/17/93	\$270,000
<b>Averages:</b>	<b>9,470</b>	<b>1,819</b>	<b>\$175,278</b>	<b>NA</b>	<b>NA</b>	<b>\$321,667</b>
<b>Kiahuna Golf Course Village</b>						
4-2-8-029-002	11,175	2,872	\$263,300	1988	05/28/93	\$373,333
4-2-8-029-006	10,280	2,720	\$275,700	1987	09/26/95	\$476,000
4-2-8-029-018	10,168	2,860	\$337,800	1991	04/04/95	\$587,500
4-2-8-029-022	11,965	2,123	\$287,500	1993	03/11/93	\$285,000
4-2-8-029-031	11,575	2,161	\$245,400	1988	03/06/95	\$575,000
4-2-8-029-032	10,203	2,424	\$245,200	1989	12/01/93	\$500,000
4-2-8-029-056	10,942	2,781	\$261,000	1991	01/03/94	\$530,000
4-2-8-029-064	10,210	2,235	\$213,400	1987	11/14/94	\$429,000
4-2-8-029-065	10,526	1,864	\$172,400	1988	01/05/94	\$377,500
4-2-8-029-071	11,129	1,576	\$144,600	1988	06/20/96	\$370,845
4-2-8-029-081	11,506	2,148	\$238,100	1989	01/19/96	\$500,000
<b>Averages:</b>	<b>10,880</b>	<b>2,342</b>	<b>\$244,036</b>	<b>NA</b>	<b>NA</b>	<b>\$454,925</b>

Continued...

**EXHIBIT 3  
SINGLE FAMILY RESIDENTIAL SALES  
SELECTED AREAS  
1993-1996**

Area Tax Map Key	Land Area (sq. ft.)	Bldg. (sq. ft.)	Assessed Bldg. Value	Year Built	Sale Date	Sale Price
<b>Princeville</b>						
4-5-3-012-009	8,081	2,800	\$196,100	1991	10/30/95	\$660,000
4-5-3-012-011	7,827	2,800	\$190,100	1991	06/16/94	\$888,250
4-5-3-012-012	8,554	2,750	\$223,600	1991	02/25/94	\$769,250
4-5-3-012-013	8,261	3,558	\$223,700	1991	08/04/94	\$997,050
4-5-3-012-014	7,525	2,800	\$184,200	1991	04/24/95	\$924,800
4-5-3-012-017	9,316	3,023	\$215,500	1991	06/15/94	\$810,000
4-5-3-012-018	9,206	3,474	\$274,000	1991	07/18/94	\$1,144,000
4-5-3-012-019	9,027	3,023	\$182,400	1991	09/15/94	\$1,122,000
4-5-3-012-024	9,646	3,274	\$190,800	1991	02/25/94	\$1,041,250
4-5-3-012-025	8,922	3,558	\$231,200	1991	01/11/95	\$986,000
4-5-3-012-027	8,327	3,274	\$211,200	1991	09/30/93	\$250,000
4-5-4-013-002	10,364	1,086	\$106,300	1988	01/11/94	\$260,000
4-5-4-013-029	13,089	2,614	\$232,300	1990	08/07/95	\$850,000
4-5-4-013-049	11,377	1,840	\$171,000	1989	09/18/95	\$370,000
4-5-4-013-060	10,272	2,868	\$236,000	1989	01/22/96	\$330,000
4-5-4-016-019	12,058	2,274	\$208,700	1989	11/16/93	\$340,000
4-5-4-016-037	10,149	2,339	\$236,200	1992	04/13/93	\$100,000
4-5-4-016-074	10,650	2,135	\$217,100	1989	01/13/93	\$175,000
4-5-4-016-083	10,375	1,385	\$136,300	1987	04/18/96	\$238,800
4-5-4-017-007	12,057	1,940	\$163,500	1988	03/11/93	\$340,000
4-5-4-017-030	12,679	1,494	\$138,000	1987	06/16/95	\$265,000
4-5-4-017-054	13,218	1,909	\$171,800	1989	07/06/95	\$305,000
4-5-4-017-062	10,500	1,772	\$203,600	1992	08/23/96	\$275,000
4-5-4-018-016	10,942	2,258	\$168,400	1986	12/28/94	\$210,000
4-5-4-018-037	10,006	3,373	\$466,700	1986	05/31/94	\$705,000
4-5-4-018-056	16,029	2,834	\$271,300	1989	06/27/95	\$325,000
4-5-4-018-060	13,048	2,219	\$180,300	1989	05/23/94	\$330,000
4-5-4-020-004	10,150	1,716	\$172,300	1988	03/12/93	\$200,000
4-5-4-020-020	9,719	2,217	\$224,200	1991	03/08/93	\$320,000
4-5-4-020-021	10,577	2,334	\$240,700	1991	04/28/95	\$380,000
4-5-4-020-023	9,873	2,078	\$20,100	1990	06/23/93	\$150,000

Continued...

**EXHIBIT 3  
SINGLE FAMILY RESIDENTIAL SALES  
SELECTED AREAS  
1993-1996**

Area Tax Map Key	Land Area (sq. ft.)	Bldg. (sq. ft.)	Assessed Bldg. Value	Year Built	Sale Date	Sale Price
4-5-4-021-004	13,433	1,444	\$146,200	1989	11/19/93	\$309,000
4-5-4-021-012	14,609	1,537	\$145,500	1988	03/18/96	\$240,000
4-5-4-021-021	9,868	1,952	\$197,400	1989	05/04/94	\$295,000
4-5-4-021-032	10,841	1,462	\$131,600	1987	09/29/95	\$225,000
4-5-4-023-004	8,126	1,439	\$121,400	1986	02/15/96	\$222,990
4-5-4-023-007	7,650	896	\$77,400	1986	05/11/94	\$207,000
4-5-4-023-016	8,456	905	\$86,300	1990	10/31/94	\$224,000
4-5-4-023-025	7,909	1,310	\$122,500	1989	03/29/96	\$220,000
4-5-4-023-026	8,057	1,185	\$118,100	1988	12/15/95	\$215,000
4-5-4-023-027	9,259	1,535	\$143,300	1989	07/22/96	\$247,000
4-5-4-023-028	7,471	1,310	\$63,700	1989	09/27/93	\$175,000
4-5-4-023-031	8,888	1,185	\$118,100	1988	09/16/94	\$230,000
4-5-4-023-037	8,671	1,258	\$120,900	1989	01/12/96	\$215,000
4-5-4-023-039	7,638	1,185	\$118,100	1989	02/27/95	\$230,000
4-5-4-023-058	7,928	1,336	\$123,800	1990	10/18/95	\$260,000
4-5-4-023-066	8,319	1,709	\$141,500	1990	12/01/93	\$247,500
4-5-4-023-074	8,442	1,258	\$129,100	1992	10/24/95	\$225,000
<b>Averages:</b>	<b>9,946</b>	<b>2,082</b>	<b>\$174,844</b>	<b>NA</b>	<b>NA</b>	<b>\$417,685</b>

Sources: The Hallstrom Group, Inc.; and Sedway Kotin Mouchly Group.  
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**APPENDIX E**

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**Update to Traffic Impact Analysis  
Kukui`ula Bay Village**

**► UPDATE TO TRAFFIC IMPACT ANALYSIS**

**KUKUIULA BAY VILLAGE**

**► KUKUIULA, KAUAI, HAWAII**

► prepared for:

Kukuiula Development Company, Inc.

► prepared by:

Julian Ng, Incorporated  
P. O. Box 816  
Kaneohe, Hawaii 96744

► May, 1998



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**Update to Traffic Impact Analysis  
Kukuiula Bay Village  
Kukuiula, Kauai, Hawaii**

May, 1998

**Summary**

The Kukuiula project proposed by Kukuiula Development Company, Inc. (KDC) has been revised to include additional units for visitor accommodations and replacement of a marina with a lagoon/wetland feature. In earlier applications for land use changes and other development approvals, traffic studies were conducted to estimate traffic impacts due to the proposed project and to identify impacts and mitigation measures. The long-range transportation plan for the island of Kauai used land use and other economic factors based on the previous plan for the Kukuiula area. An analysis was done using the revised project description to determine if any significant changes to the project's impact to traffic could be expected.

Development of portions of the project has already begun. However, changes to the area near Kukuiula Bay have been proposed. The original plan ("Old Plan") included a resort, a marina, and related activities; the revised plan ("New Plan") has a hotel and time-share condominiums located around a lagoon/wetland area. The number of single family dwelling units in the project would remain about the same.

Development of the project will occur over a period of 20 years or more. As it develops, the project will increase traffic on portions of Poipu Road, Koloa Road, and Maluhia Road, as well as on Kaumualii Highway. At the same time, other development in Poipu and Koloa, and planned roadway improvements such as the extension of the Koloa-Poipu Bypass Road, are expected to affect traffic volumes on Poipu Road. Estimates of future traffic on each of these road segments were made to identify the impact of the proposed change to the land use plan.

The regional impacts of the proposed changes in the project will be minimal. Peak hour volumes on Kaumualii Highway, Maluhia Road, and Koloa Road are expected to increase slightly; however, the improvements recommended in the islandwide long-range land transportation plan would still be applicable and would serve the projected volumes at acceptable levels of service.

The construction of the "Western Bypass Road" within the project to relieve traffic on Poipu Road was previously required with the completion of the first phase of the Kukuiula project (1,738 dwelling units). An analysis of peak hour conditions on Poipu Road using traffic data collected after the opening of the first phase of the Koloa-Poipu Bypass Road

indicates that Poipu Road will be adequate to support development of up to 2,000 units in the Kukuiula project.

The update of the traffic impact analyses indicates that the proposed changes will not have a significant effect on previous traffic estimates. Earlier recommendations that were made for traffic mitigation are still valid.

## Introduction

Kukuiula Development Company, Inc. has proposed changes to their project at Kukuiula, Kauai (Exhibit 1). The changes occur primarily in the vicinity of Kukuiula Bay, where a resort, a marina, and related commercial uses were originally proposed ("Old Plan"). The land uses have been revised ("New Plan") with the elimination of the marina and marina-related commercial uses, replacing them with the lagoon/wetland. Slight modifications to the internal roadway system have also been proposed.

The project that was presented in the past was used in a recent study for a long-range land transportation needs for Kauai. The study for the Kauai Long-Range Land Transportation Plan<sup>1</sup> (KLLTP) used a computer model to assign vehicular trips to various roadway networks to evaluate the adequacy of the existing (plus committed projects) roadway system and of several alternatives. As part of the study for the KLLTP, the traffic generated in each of 56 Traffic Analysis Zones (TAZs) was estimated outside of the computer model. While no attempt has been made to rerun the model, this update included comparisons of the numbers of trips generated in the Kukuiula TAZ used in the model and based on the revised plan. From these comparisons, new estimates of traffic on major roadway links were made to assess future conditions and any needed changes to the recommendations from the KLLTP were identified.

In addition, the latest traffic data were reviewed to reassess conditions at several intersections affected by the proposed project, since traffic volumes on Poipu Road were affected by the construction and opening of the Eastern Bypass Road connecting Koloa with Poipu. Previous traffic studies have indicated that signalization and other improvements will be needed at many of the intersections in the area. Unsignalized intersections were analyzed using procedures from the *Highway Capacity Manual*<sup>2</sup> and the *Manual on Uniform Traffic Control Devices for Streets and Highways*<sup>3</sup> (MUTCD). The levels of service and other criteria are described in the attached appendix.

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<sup>1</sup> Austin, Tsutsumi & Associates, Inc., *Kauai Long-Range Land Transportation Plan*, May 1997.

<sup>2</sup> Transportation Research Board, National Research Council, *Highway Capacity Manual - Third Edition*, Washington, D.C., 1994.

<sup>3</sup> U. S. Department of Transportation, Federal Highway Administration, *Manual on Uniform Traffic Control Devices for Streets and Highways*, Washington, D.C., 1988 as revised.

## Regional Traffic Impacts

The Old Plan was included in the future land uses which were the bases for forecasts of future traffic generated in Kukuiula. The proposed changes in the Kukuiula project would amend several of the parameters used to estimate traffic from the Kukuiula TAZ; the parameters used in the long range plan study, the revised parameters to reflect the proposed change, and the differences are shown in Table 1 along with the base year (1994) parameters. Table 1 also shows the total daily trips generated from the zone.

Table 1  
CHANGES TO TRAFFIC ANALYSIS ZONE DATA

Traffic Analysis Zone 13 (Kukuiula)	year 1994	year 2020 forecasts		
		KLLTP	revised	change
Planning parameters				
Single family dwelling units	124	1,600	1,416	(184)
Multi-family dwelling units	20	200	220	20
Hotel rooms	229	500	929	429
Daily trip ends	5,053	33,806	35,910	2,104

The New Plan, by the year 2020, would accommodate up to 1,292 single family dwelling units in the Kukuiula project; the revised total of 1,416, which represents this total added to the existing 124 units, would be the upper range of the estimate of future single family units in the project since the first increments are being subdivided at lower than permitted densities. The net increase between 1994 and 2020 of 700 hotel rooms in Kukuiula is based on a 200-room hotel and 500 time-share units (300 time-share units plus 200 lockout units) shown in the New Plan.

The KLLTP had included a net increase of 212,000 square feet of leasable area in the commercial, shopping center, and office categories. The total of 170,000 square feet in these categories for the New Plan is within the increase shown in the KLLTP. The KLLTP also included projections for increases in the number of county and state employees and elementary school students in the zone. While the changes in the project may decrease some of these projections, no changes were made in the traffic analysis zone projections in these categories.

The estimate of daily trip ends in Kukuiula would increase by approximately 6 percent as a result of the changes in the traffic analysis zone data. In terms of average growth rates, the average annual growth in trips generated in Kukuiula between the base year and year 2020 would increase from 4.06% to 4.14%. When the trip ends in the three zones in the area (Kukuiula, Poipu, and Koloa) are considered, the increase in daily trip ends is less than 2% of the total based on the parameters used in the KLLTP.

The KLLTP evaluated future conditions at a number of screenlines to determine the adequacy of the future roadway system, with only committed roadway improvements and with various alternatives. If the existing roadways plus committed improvements did not adequately serve the future traffic, additional improvements were considered. Volumes for three periods were considered: 24-hour weekday, AM Peak Hour, PM Peak Hour; roadway adequacy in the KLLTP was based on Level of Service C or better conditions (less than 80% of capacity). The KLLTP also proposed a recommended roadway system and presented conditions on each roadway.

Screenlines used in the KLLTP study were reevaluated to determine the impacts that may result from the revised Kukuiula project. The first of these screenlines (Screenline 4 of the KLLTP study) is located north of Koloa. Existing roadways crossing this screenline are Koloa Road and Maluhia Road. Table 2 shows the conditions for the baseline (1994) data used in the KLLTP study, additional data from 1995 and 1997 counts, the forecasts from the KLLTP study for year 2020, and the revised forecasts for Koloa Road based on the increased traffic generated by the proposed changes to the Kukuiula project (capacities are from the KLLTP study: 18,000 vehicles per day, with 10% during each peak hour).

Table 2  
CONDITIONS ON KOLOA ROAD

Screenline 4, north of Koloa	southbound			northbound		
	volume	v/c ratio	LOS	volume	v/c ratio	LOS
<b>Typical weekday</b>						
1994 *	3,030	0.34	A	2,310	0.26	A
1995 **	4,364	0.48	A	4,323	0.48	A
1997 **	4,479	0.50	A	4,338	0.48	A
2020 (Old Plan) *	8,889	0.99	E	8,893	0.99	E
2020 (New Plan)	9,067	1.01	F	9,071	1.01	F
<b>AM Peak Hour</b>						
1994 *	360	0.40	A	135	0.15	A
1995 **	445	0.49	A	226	0.25	A
1997 **	352	0.39	A	144	0.16	A
2020 (Old Plan) *	721	0.80	D	597	0.66	B
2020 (New Plan)	735	0.82	D	609	0.68	B
<b>PM Peak Hour</b>						
1994 *	265	0.29	A	185	0.21	A
1995 **	315	0.35	A	383	0.43	A
1997 **	378	0.42	A	411	0.46	A
2020 (Old Plan) *	735	0.82	D	519	0.58	A
2020 (New Plan)	750	0.83	D	529	0.59	A

Sources: \* *Kauai Long-Range Land Transportation Plan*  
 \*\* *State Highway Planning Branch, Count station 8-D*

The existing conditions on Koloa Road are described by LOS A. An analysis similar to that used in the KLLTP showed that improvements are needed for the future daily traffic volumes, whether Kukuiula is developed under the Old Plan or the New Plan. The analysis showed that levels of service on Koloa Road are worse for the typical weekday than for the peak hours because there is more traffic occurring in the non-peak hours than would be expected in a typical rural roadway. These findings, which are inconsistent with the normal expectation that peak hour conditions would be worse, result from the simplified analysis that is typically used in transportation planning studies, where daily capacities are estimated by assuming a pattern of distribution of traffic throughout the day. The results of the peak hour analyses, which use capacities based on the roadway characteristics and traffic estimates based on existing traffic volumes, provide a better indicator of the adequacy of a roadway. Future peak hour conditions on Koloa Road are LOS D or better with the Old Plan or with the New Plan.

Table 3 shows the same information for Maluhia Road (capacity from the KLLTP study is 24,000 vehicles per day, with 10% in each peak hour).

Table 3  
CONDITIONS ON MALUHIA ROAD

Screenline 4, north of Koloa	southbound			northbound		
	<u>volume</u>	<u>v/c ratio</u>	<u>LOS</u>	<u>volume</u>	<u>v/c ratio</u>	<u>LOS</u>
<b>Typical weekday</b>						
1994 *	4,050	0.34	A	4,250	0.35	A
1995 **	3,617	0.30	A	3,977	0.33	A
1997 **	4,177	0.35	A	4,244	0.35	A
2020 (Old Plan) *	12,181	1.02	F	12,173	1.01	F
2020 (New Plan)	12,425	1.04	F	12,417	1.03	F
<b>AM Peak Hour</b>						
1994 *	205	0.17	A	555	0.46	A
1995 **	215	0.18	A	314	0.26	A
1997 **	225	0.19	A	277	0.23	A
2020 (Old Plan) *	633	0.53	A	1,092	0.91	E
2020 (New Plan)	646	0.54	A	1,114	0.93	E
<b>PM Peak Hour</b>						
1994 *	415	0.35	A	325	0.27	A
1995 **	321	0.27	A	308	0.26	A
1997 **	389	0.32	A	361	0.30	A
2020 (Old Plan) *	1,052	0.88	D	813	0.68	B
2020 (New Plan)	1,073	0.89	D	829	0.69	B

Sources: \* *Kauai Long-Range Land Transportation Plan*  
 \*\* *State Highway Planning Branch Count station 8*

Existing conditions on Maluhia Road are described by LOS A. The future daily traffic volumes indicate that improvements are needed, with the Old Plan or with the New Plan for Kukuiula, as peak hour levels of service are unchanged. As was the case with the Koloa Road analyses, the levels of service are worse when daily volumes are considered. Future morning peak hour conditions on Maluhia Road would be LOS E with either plan for the Kukuiula project.

The KLLTP recommends that a new two-lane roadway be built south of the existing Kaumualii Highway to provide additional capacity between Lihue to the east and Port Allen to the west of the Koloa-Poipu-Kukuiula area. The Kukuiula Mauka Project Road would be a portion of this new regional roadway; it would be extended to the west to Port Allen to alleviate poor conditions both on both Kaumualii Highway (in Kalaheo and Lawai) and on Koloa Road (between Lawai and Koloa). This project has been identified in the KLLTP for implementation after 2006 and before 2020.

A new two-lane road south of Maluhia Road and Kaumualii Highway has been proposed to address the future poor conditions on Maluhia Road. This roadway would start at Poipu Road opposite the Kukuiula Mauka Project Road, tie to Weliweli Road, and continue eastward to Lihue. This project has also been identified in the KLLTP for implementation between 2006 and 2020.

With these new roadways serving some of the future traffic entering and leaving the Koloa area, daily and peak hour conditions would be LOS C or better in all cases. The New Plan for Kukuiula would not significantly affect future conditions if these additional roadways are in service, as shown in Table 4.

The impacts of the proposed change in the Kukuiula project would have even less impact on roadways farther from the project, including Kaumualii Highway, which was identified in the KLLTP for widening to a four-lane divided highway between 1996 and 2000. A planning study to implement this improvement is underway and if the work progresses as expected, the widening of Kaumualii Highway would begin as soon as 2001 and be completed before 2005.

Regional traffic impacts of the proposed change to the Kukuiula project, therefore, are not significant. The changes proposed in the Kukuiula project increases by a small amount the estimates of future traffic volumes on Koloa Road and on Maluhia Road. Future peak hour levels of service on these roadways would not change. On Koloa Road, peak hour conditions would be LOS D or better; on Maluhia Road, conditions in the AM Peak Hour would be LOS E.

If the roadway system is improved as recommended in the KLLTP, the proposed changes in the Kukuiula project would have minimal effect on levels of service, with LOS C or better conditions in all cases. Development of Kukuiula under the New Plan rather than the Old Plan would not affect the recommendations of the KLLTP.

Table 4  
CONDITIONS IN 2020 WITH PLAN RECOMMENDED IN KLLTP

Typical Weekday	entering Koloa area			exiting Koloa area		
	volume	v/c ratio	LOS	volume	v/c ratio	LOS
New road to west *	7,946	0.66	B	7,951	0.66	B
with New Plan	8,100	0.68	B	8,105	0.68	B
Koloa Road *	1,912	0.21	A	1,912	0.21	A
with New Plan	1,949	0.22	A	1,949	0.22	A
Maluhia Road *	5,304	0.44	A	4,303	0.36	A
with New Plan	5,479	0.46	A	4,455	0.37	A
New road to east *	7,085	0.79	C	7,082	0.79	C
with New Plan	7,150	0.79	C	7,150	0.79	C
<b>AM Peak Hour</b>						
New road to west *	591	0.49	A	567	0.47	A
with New Plan	602	0.50	A	578	0.48	A
Koloa Road *	329	0.37	A	223	0.25	A
with New Plan	335	0.37	A	227	0.25	A
Maluhia Road *	313	0.26	A	717	0.60	A
with New Plan	319	0.27	A	731	0.61	B
New road to east *	409	0.45	A	332	0.37	A
with New Plan	417	0.46	A	338	0.38	A
<b>PM Peak Hour</b>						
New road to west *	756	0.63	B	507	0.42	A
with New Plan	771	0.64	B	517	0.43	A
Koloa Road *	69	0.08	A	112	0.12	A
with New Plan	70	0.08	A	114	0.13	A
Maluhia Road *	433	0.36	A	353	0.29	A
with New Plan	441	0.37	A	360	0.30	A
New road to east *	509	0.57	A	685	0.76	C
with New Plan	519	0.58	A	698	0.78	C

Source: \* *Kauai Long-Range Land Transportation Plan*



## Impacts on Poipu Road

Construction of a western bypass road parallel to Poipu Road through the Kukuiula project was previously identified as warranted with the occupancy of 1,738 units in the Kukuiula project. As indicated in the foregoing analyses of trip generation from the Kukuiula zone and regional traffic impacts, the proposed change in the project would have only a minor impact to future traffic. The number of units which the existing Poipu Road could support prior to opening of a "Western Bypass" road should not change.

This update included an evaluation of the adequacy of Poipu Road, between Koloa and the project, and between the project and Poipu. Traffic data collected after the opening of the first increment of the "Eastern Bypass" road were used in this update. Construction of the second increment of the Eastern Bypass road is expected to begin before the end of 1998 with construction completed by the end of 1999; upon completion, the Eastern Bypass Road will connect the center of Poipu directly to Maluhia Road.

The trip generation and traffic data for the KLLTP base year (1994) were reviewed to develop a method for forecasting traffic volumes on Poipu Road in 2020. The results of the analyses, with the capacity of Poipu Road between Koloa and the Kukuiula project estimated to be 15,000 vehicles per day (vpd), are shown in Table 5.

Table 5  
CONDITIONS ON POIPU ROAD - 2020  
Koloa to Kukuiula project

	southbound			northbound		
	volume	v/c ratio	LOS	volume	v/c ratio	LOS
Typical weekday						
1995 **	4,206	0.56	A	4,154	0.55	A
1997 **	5,425	0.72	C	5,544	0.74	C
2020 (Old Plan)	7,810	1.04	F	7,810	1.04	F
2020 (New Plan)	8,135	1.08	F	8,135	1.08	F
AM Peak Hour						
1995 **	313	0.42	A	208	0.28	A
1997 **	302	0.40	A	287	0.38	A
2020 (Old Plan)	581	0.77	C	386	0.51	A
2020 (New Plan)	605	0.81	D	402	0.54	A
PM Peak Hour						
1995 **	348	0.46	A	357	0.48	A
1997 **	461	0.61	B	513	0.68	B
2020 (Old Plan)	646	0.86	D	663	0.88	D
2020 (New Plan)	673	0.90	D	690	0.92	E

Source: \*\* State Highway Planning Branch Count station 8-E

As shown in Table 5, unacceptable levels of service would occur on Poipu Road with the development of Kukuiula that is projected to occur by year 2020. Peak hour conditions would be LOS D in the AM Peak Hour and LOS E in the PM Peak Hour. Straight-line interpolations of the 1997 counts and the 2020 projected volumes on Poipu Road were used to estimate the level of development in the project at which the levels of service would become unacceptable. Using the LOS C or better criteria from the KLLTP, these development levels are 1,180 units for daily traffic, 2,160 units for AM Peak Hour traffic, and 1,720 units for PM Peak Hour traffic.

Peak hour conditions are more commonly used as the criteria for determining when roadway improvements are necessary, with LOS D being acceptable. If this criteria were used, the existing roadway would be adequate for AM Peak Hour traffic; the numbers of units which could be accommodated by the existing roadway are estimated to be 2,120 for PM Peak Hour traffic. Peak hour conditions on Poipu Road would be LOS D or better when development in Kukuiula reaches the previously determined threshold of 1,738 units.

For Poipu Road between Poipu and Kukuiula, the daily capacity was estimated to be 17,000 vpd. Table 6 shows the traffic data and the projections of traffic on Poipu Road. The table shows that the existing two-lane Poipu Road will continue to adequately serve the traffic demands between the two areas.

Table 6  
CONDITIONS ON POIPU ROAD - 2020  
Poipu to Kukuiula project

Typical weekday	eastbound			westbound		
	volume	v/c ratio	LOS	volume	v/c ratio	LOS
1995 **	3,494	0.41	A	3,373	0.40	A
1997 **	5,343	0.63	B	4,467	0.53	A
2020 (Old Plan)	5,325	0.63	B	5,325	0.63	B
2020 (New Plan)	5,355	0.63	B	5,355	0.63	B
AM Peak Hour						
1995 **	204	0.24	A	149	0.18	A
1997 **	297	0.35	A	213	0.25	A
2020 (Old Plan)	311	0.37	A	227	0.27	A
2020 (New Plan)	313	0.37	A	228	0.27	A
PM Peak Hour						
1995 **	291	0.34	A	278	0.33	A
1997 **	495	0.58	A	407	0.48	A
2020 (Old Plan)	443	0.52	A	424	0.50	A
2020 (New Plan)	446	0.52	A	426	0.50	A

Source: \*\* State Highway Planning Branch Count station 8-E

### **Intersection of Poipu Road and Lawai Road**

The lower portion of the Kukuiula project would be served by Lawai Road, which currently intersects Poipu Road at a "T"-intersection. Lawai Road, however, turns sharply just west of the existing intersection and as part of the Kukuiula project, the intersection would be reconfigured to a cross intersection with Poipu Road being the north and east legs and Lawai Road being the south leg. A new project road would be the west leg of the reconfigured intersection.

The top of Exhibit 2 shows the estimated peak hour traffic in 1997, based on the available traffic count data at the intersection (approach and departure volumes). Under the existing stop control for Lawai Road, which has one lane for left turns and a separate lane for right turns, peak hour conditions are acceptable (LOS D or better).

Volumes at the intersection were projected assuming full buildout of the Kukuiula project and access only through Lawai Road, in order to estimate the level of development which Lawai Road could support before improvements are needed. The lower part of Exhibit 2 shows the peak hour traffic assignments that are approximately 17% of the change between the 1997 and full buildout estimates; at these volumes, improvements would be necessary as peak hour LOS E conditions would occur in the PM Peak Hour. Based on this analysis, Lawai Road could support no more than 370 units.

The finding of 370 units was based on an average trip generation of 9.0 trips per unit per day, with a mix of unit types described by the New Plan. If all of the initial units were resort units (for which the hotel rate of 8.7 trips per unit per day), the existing intersection would be able to handle the traffic generated by 380 resort units.

Therefore, any development of the makai portion of the Kukuiula site that exceeds the number of units shown above should be mitigated by either:

- improvements to reconfigure of the intersection of Poipu Road and Lawai Road, or
- construction of an internal road to connect the makai development with the mauka project road.

The latter improvement should divert much of the traffic from the makai development and defer the need to reconfigure the intersection of Poipu Road and Lawai Road.

### **Other Intersections**

Two unsignalized "T"-intersections in Koloa (Maluhia Road and Koloa Road, Poipu Road and Koloa Road) have previously been identified as locations where existing poor peak hour conditions would be worsened by increased traffic volumes that would be the result of development in Kukuiula and Poipu. Signalization of these intersections, when

warranted, have been identified as a possible mitigation measure (before an unsignalized intersection is signalized, minimum volumes or other conditions, called "warrants", must be met as detailed in the MUTCD). A review of the 1995 and 1997 traffic counts at these intersections indicate that signals are not yet warranted by peak hour traffic volumes.

The intersection of Maluhia Road and Koloa Road was one of 22 locations evaluated for short-term improvements as part of the KLLTP study. While ten of the locations were rated "high" priority, the intersection of Maluhia Road and Koloa Road was rated "medium" priority, with the following suggested solutions:

- Maluhia Road should be widened so there is more storage area for makaibound left turning vehicles onto Koloa Road.
- The Koloa-Poipu Bypass Road, when completed, is expected to divert some traffic and decrease the traffic volumes passing through Koloa Town.

As indicated earlier, the effect of the proposed change in the Kukuiula project is not expected to significantly affect the traffic projections and no changes are made in the recommendations for the Koloa Road intersections. As noted earlier, completion of the Koloa-Poipu Bypass Road (Eastern Bypass road) should occur before the end of 1999.

At the intersection of the mauka project road with Poipu Road, the initial control would be stop signs for traffic exiting the project. As the project develops and the number of vehicles on the controlled approach increases, delays will increase and signalization or other improvement will be necessary. With an estimated two-way traffic on Poipu Road of approximately 700 vehicles per hour in the AM Peak Hour and 1,100 vph in the PM Peak Hour, signalization is expected to be warranted by PM Peak Hour traffic when 800 units are completed.

### **Conclusions and Recommendations**

The proposed changes to the Kukuiula project will result in the project generating slightly higher traffic volumes than previously disclosed. However, the impacts of this increase are minimal, as future conditions will not be significantly different. There are no reasons to change the recommendations of the KLLTP for land transportation on Kauai because of the proposed changes to the Kukuiula project.

Project traffic using the mauka project road at an unsignalized intersection with Poipu Road will have increased delays as the traffic increases. The level of development at which signalization of the intersection will be needed and warranted has been estimated to be 800 units.

Development in the makai portion of the Kukuiula project site will affect Lawai Road and its intersection with Poipu Road. Reconfiguration of the intersection has been proposed when improvements are needed; improvements to the intersection will be necessary with development of an estimated 370 units in the makai area. Alternatively, a

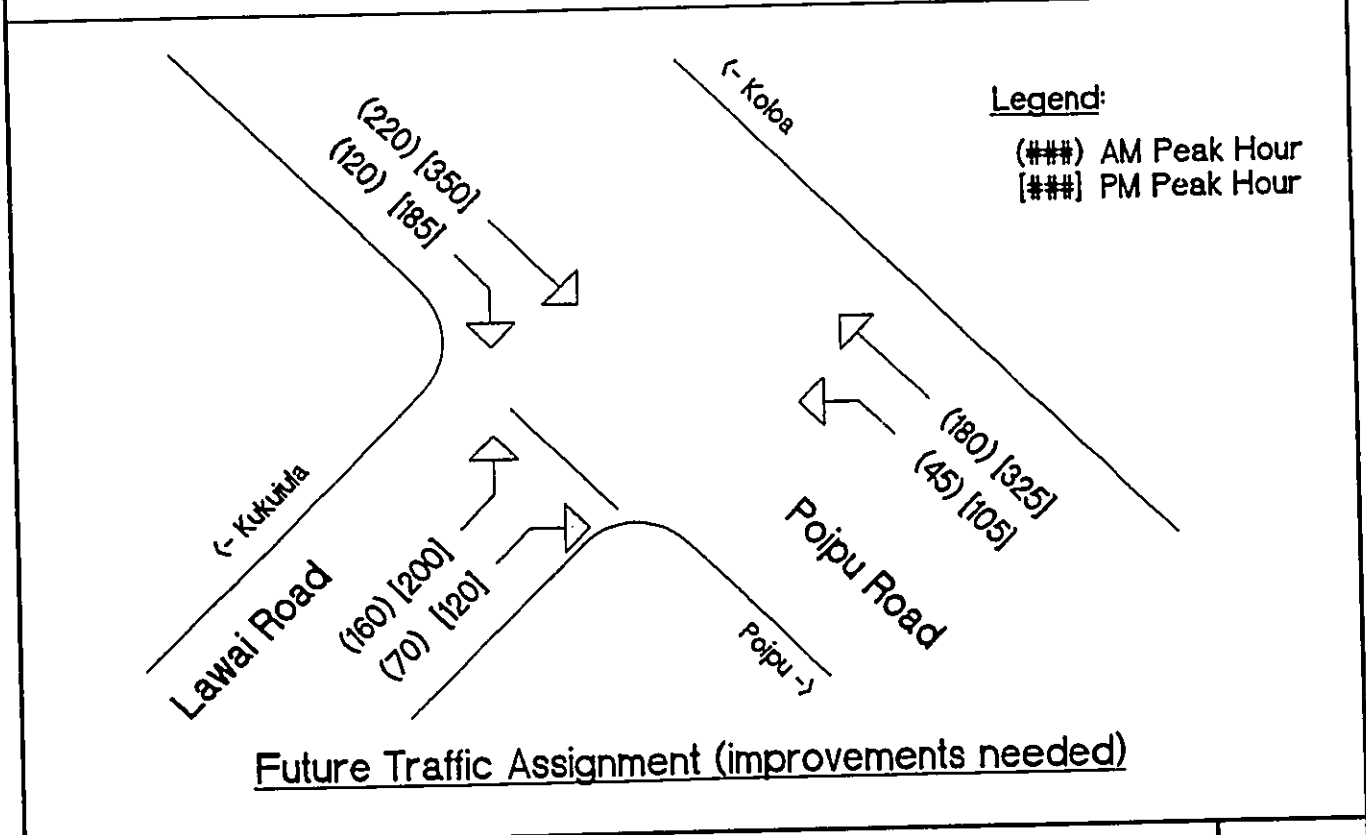
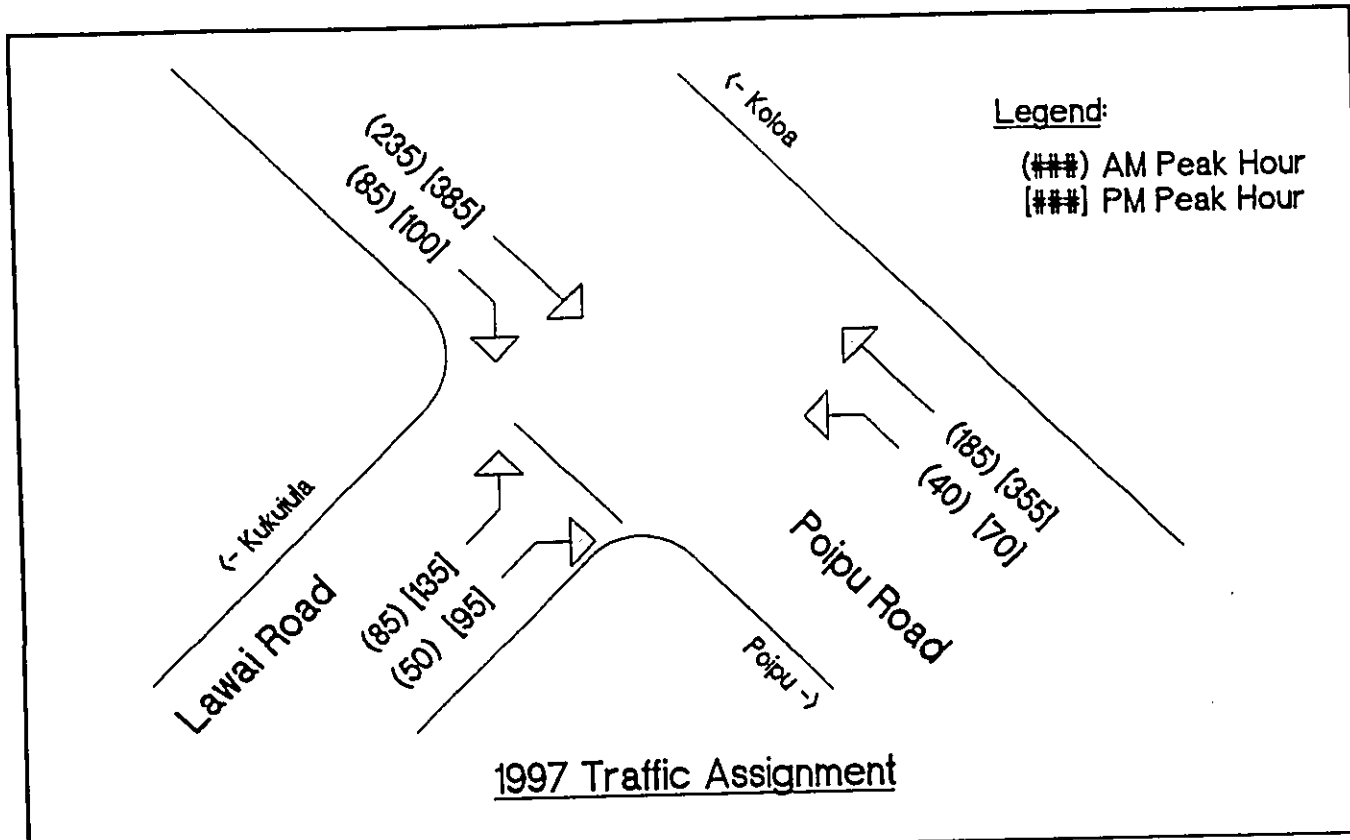
roadway connection from the resort area to the mauka project road could be made to divert project traffic (as well as non-project traffic) from Lawai Road.

Poipu Road between the Kukuiula project and Koloa has been estimated to be adequate for up to 2,050 units. A mauka-makai project road to Koloa Road to serve as a western bypass of Koloa, which the developer has committed to construct and open for use before exceeding 1,738 units in the Kukuiula project, is consistent with this finding.

Improvements to the Koloa Road intersections with Poipu Road and with Maluhia Road should be considered if the existing stop controls cause excessive delays. However, the intersections should be signalized only when signal warrants are met.

\* \* \*





<b>Kukuiula Bay Village</b> Update to Traffic Impact Analysis	<b>Poipu Road and Lawai Road</b> Existing Intersection Layout	<b>Exhibit</b> <b>2</b>
	prepared by: Julian Ng, Inc.	May, 1998

## APPENDIX - LEVELS OF SERVICE

A qualitative measure used by traffic engineers to describe traffic operational conditions is the level of service (LOS). Six levels have been defined, from LOS A (best operating condition) to LOS F (worst). The *Highway Capacity Manual* describes analysis procedures for different types of facilities. For uninterrupted flow facilities such as freeways, other divided highways, and two-lane rural highways, factors such as speed and travel time, freedom to maneuver, comfort and safety, and continuity of flow are used to determine levels of service.

On multi-lane highways, levels of service are related to maneuverability within the traffic stream travelling in the same direction; directional volume and traffic density are used to determine capacities and levels of service. On two-lane highways, levels of service are affected by a driver's ability to pass slow-moving vehicles; opposing volume is also a factor. Descriptions of the levels of service for two-lane rural highways are:

- LOS A represents free flow. Travel at desired speeds is unimpeded, as passing of any slow-moving vehicles is infrequent and can be done easily. Platoons of vehicles would be three or less.
- LOS B describes stable flow. Passing to maintain desired speed becomes significant and platooning of vehicles increases.
- LOS C also describes stable flow. Platooning and restrictions to passing become noticeable and while flow remains stable, some congestion may occur because of slow-moving vehicles or turning movements.
- LOS D is characterized by opposing traffic flows operating separately. Passing is extremely difficult as opportunities are very limited.
- LOS E describes unstable operation at or near capacity levels. There are no usable gaps in the traffic stream and any disruption to flow causes congestion. Flow is unstable as slow-moving vehicles and other interruptions cause intense platooning and congestion; passing is virtually impossible.
- LOS F represents a forced or breakdown flow caused by traffic demand volume exceeding capacity; actual volume served will drop as speed decreases and congestion increases. LOS F is used to identify bottlenecks, or points of congestion, and operations within the queue behind these bottlenecks.

Levels of service are also identified for signalized intersections and for the controlled movements at unsignalized intersections. These levels of service are based on average delays, which in turn are based on volumes and capacities. The procedures from the *Highway Capacity Manual - Third Edition* were used to calculate delays. Criteria for levels of service are:

<u>LOS</u>	<u>General Description of Estimated Delay</u>	<u>Average Delay at Signalized Intersection</u>	<u>Average Delay at Unsignalized Intersection</u>
A	Little or no delay	(≤5 seconds)	(≤5 seconds)
B	Short traffic delays	(>5 and ≤15 seconds)	(>5 and ≤10 seconds)
C	Average traffic delays	(>15 and ≤25 seconds)	(>10 and ≤20 seconds)
D	Long traffic delays	(>25 and ≤40 seconds)	(>20 and ≤30 seconds)
E	Very long traffic delays	(>40 and ≤60 seconds)	(>30 and ≤45 seconds)
F	Very long traffic delays	(>60 seconds)	(>45 seconds)

References: Transportation Research Board, National Research Council, *Highway Capacity Manual*, Special Report 209, Washington, D.C., 1985  
 Transportation Research Board, National Research Council, *Highway Capacity Manual - Third Edition, Updated 1994*, Special Report 209, Washington, D.C., 1994



**APPENDIX F**

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**Consultation Process Correspondence**

# TOWNSCAPE, INC.

Planned Communities, Master Plans, Land Use Permits

900 Fort Street Mall, Suite 800, Honolulu, HI 96813  
Telephone (808) 536-6999 Facsimile (808) 524-4998  
email address: townscap@panworld.net

April 10, 1998

Mr. Keith Nitta  
Planning Department  
County of Kauai  
4444 Rice Street  
Lihue, Kauai, Hawaii 96766

Dear Mr. Nitta:


Subject: Kukui`ula Bay Resort Supplemental Environmental Impact Statement (SEIS)

Thank you for meeting with us on April 9, 1998 to discuss issues relative to the proposed changes in the Kukui`ula Planned Community project that have been made in the resort area of the project. We will provide an update of environmental, social and economic conditions in the SEIS.

A memorandum documenting the discussion at the meeting is attached for your information. Please feel free to make any corrections or provide clarification on any of the items documented in the minutes.

If you have any questions, please contact the undersigned at 536-6999.

Sincerely,



Joanne Hiramatsu  
Senior Planner

Enclosure

cc: A&B Properties, Inc., with enclosure

# TOWNSCAPE, INC.

Planned Communities, Master Plans, Land Use Permits

900 Fort Street Mall, Suite 800, Honolulu, HI 96813  
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email address: townscap@panworld.net

## MEMORANDUM

### Kukui'ula Bay Resort

TO: Participants  
FROM: Joanne Hiramatsu  
DATE: April 10, 1998  
SUBJECT: Kukui'ula Bay Resort Supplemental Environmental Impact Statement (SEIS)

PARTICIPANTS: Dan Yasui, A&B - Honolulu  
Tom Shigemoto, A&B - Kauai  
Keith Nitta, Kauai Planning Department (KPD)  
Joanne Hiramatsu, Townscape, Inc.

The purpose of the meeting on April 9, 1998 was to discuss the approach and issues that would be addressed in the SEIS. Other items discussed included the subsequent General Plan Amendment and Zoning Application. The following is a summary of our discussion:

#### Supplemental Environmental Impact Statement

1. Previously an EIS was accepted by the County of Kauai Planning Department for the Kukui'ula project. The Supplemental EIS will update the current conditions and address new issues primarily related to the proposed wetland.
2. Traffic is an issue that needs to be updated in the SEIS, due to changes in the development phasing. The Resort area was originally in "Phase 2" of the project. Phase 1 of the project included the development of 1,738 residential units. It was understood that once the unit count reached 1,738 units, roadways that were needed for "Phase 2" would be required (such as the "Western Bypass" road).

#### General Plan Amendment and Zoning Application

1. The Kauai Planning Department supports the General Plan Amendment from "Urban Residential" to "Resort".
2. KPD noted that they will examine whether or not this General Plan Amendment is a revision of the original General Plan ordinance for the overall Kukui'ula Planned Community or if the resort portion of the project is considered a new amendment to the General Plan. Conditions were placed on the project in the original General Plan ordinance. These conditions were then duplicated in the Zoning ordinance. Current County policy is to not place conditions on a project at the General Plan level. Conditions would be placed on a project at the zoning level. Conditions in the General Plan

ordinance will be reviewed to determine whether or not any of those conditions applied to the Resort area.

3. It was recommended that the proposed zoning for the resort area be made in a separate zoning application. However, the existing zoning ordinance combined all previous conditions for prior ordinances into the most current zoning ordinance for the project. These conditions will be reviewed and conditions that no longer apply should be deleted.
4. The KPD pointed out that Resort zoning would allow the most flexibility in the development of hotels; apartment hotels and related commercial uses for the proposed resort area.

# TOWNSCAPE, INC.

Planned Communities, Master Plans, Land Use Permits

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email address: townscap@panworld.net

April 10, 1998

Mr. Thomas C. Telfer  
Wildlife Manager  
State of Hawaii  
Department of Land and Natural Resources  
Division of Forestry and Wildlife  
3060 Eiwa Street, Room 306  
Lihue, Kauai, Hawaii 96766-1875

Dear Mr. Telfer:

Subject: Kukui'ula Bay Resort Supplemental Environmental Impact Statement (SEIS)

Thank you for hosting the meeting on the subject project with yourself and representatives of the U.S. Fish and Wildlife Service (USFWS) and A&B Properties, Inc. on April 9, 1998. The discussion was very useful in helping us understand the various aspects relating to the creation of the proposed wetland habitat.

A memorandum documenting the discussion at the meeting is attached for your information. Please feel free to make any corrections or provide clarification on any of the items documented in the minutes.

If you have any questions, please contact the undersigned at 536-6999.

Sincerely,



Joanne Hiramatsu  
Senior Planner

Enclosure

cc: U.S. Fish and Wildlife Service, with enclosure  
A&B Properties, Inc., with enclosure

# TOWNSCAPE, INC.

Planned Communities, Master Plans, Land Use Permits

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Telephone (808) 536-6999 Facsimile (808) 524-4998  
email address: townscap@panworld.net

## MEMORANDUM Kukui'ula Bay Resort

TO: Participants  
FROM: Joanne Hiramatsu  
DATE: April 10, 1998  
SUBJECT: Kukui'ula Bay Resort Supplemental Environmental Impact Statement (SEIS)

PARTICIPANTS: William Campbell, A&B Properties, Inc. (A&B) - Honolulu  
Dan Yasui, A&B - Honolulu  
Tom Shigemoto, A&B - Kauai  
Thomas C. Telfer, DLNR, Division of Forestry and Wildlife  
Christine Willis, U.S. Fish and Wildlife Service (USFWS)  
Dave Hopper, USFWS  
Lorena, USFWS  
Joanne Hiramatsu, Townscape, Inc.

The purpose of the meeting on April 9, 1998 was to discuss issues concerning the proposed wetland habitat that would need to be addressed in the SEIS that are of concern to USFWS and DLNR. The following is a summary of our discussion:

1. The plan for the Kukui'ula Planned Community project has been revised in the vicinity of the Resort at Kukui'ula Bay. The difference is that the proposed 10-acre marina site that was part of the original plan is now planned for the development of a constructed wetlands. This 10-acre area is currently the site of a drainage siltation basin that was constructed for the overall planned community project in 1992.
2. USFWS would be concerned with sediment load and water quality in the wetlands. It was suggested that siltation basins be developed above the wetlands to minimize maintenance dredging of the wetlands from sediment loads. Sediments from urbanized areas could potentially contain toxic materials that may affect the wetland habitat. Therefore, sediment basins above the wetland will reduce the volume of sediments entering the wetlands, which in turn will improve water quality and support wildlife habitat, specifically for endangered water birds.
3. Siltation basins above the urban areas were also suggested. These siltation basins will reduce the amount of silt entering urban areas, and consequently reduce sediment deposits in siltation basins within the urban area.
4. Provisions and applicability of the draft Federal "Safe Harbor" policy were discussed with the USFWS. Generally, the Safe Harbor policy will allow the developer to return the

site to predevelopment conditions or other use, such as a marina, provided that the number of wildlife species does not drop below baseline conditions (i.e. wildlife conditions prior to development of the wetlands). Several actions will be needed for this agreement as follows:

- a) A baseline study in the vicinity of the drainage siltation basin to assess the number and occurrence of endangered species, specifically water birds.
- b) A determination by the Corps of Engineers (COE) on the type of wetland that currently exists since the construction of the drainage siltation basin. This determination involves a site visit to assess the site for soil, hydrologic, and vegetative cover that is typical of wetland conditions. There are two wetland categories: 1) artificial, or 2) jurisdictional.

A general maintenance permit for the wetlands will be needed from the Corps of Engineers.

5. Marine life in the wetland should include mosquito fish to control mosquitoes. However, tilapia, bass and catfish are not recommended. Although tilapia provides food for the Hawaiian Stilt, the water quality of the wetland will deteriorate. USFWS recommended that a provision be made in the design of the wetland to allow draining of the wetland to eradicate tilapia should it be introduced. Once the wetland is drained, it should be dried out for several days to eradicate any eggs or juveniles that may be present in the mud. The best time of year to drain the wetland would be in October because it will have the least disturbance on waterfowl.
6. To avoid the potential high cost to drain the entire wetland, it was suggested that the wetland be developed in partitionable sections. Upon the discovery of tilapia in one section, the water from that single section could be drained and dried out. Sections will also minimize disturbance of water bird habitat.
7. If the tilapia is allowed to multiply in the wetlands, the tilapia could undergo a stunting effect because of crowding whereby they will reproduce at a much smaller size (two inches) versus the normal reproduction size of five inches. Fish kills could also occur during the dry season and create an odor nuisance when the water drops below sustainable levels.
8. Poisoning of the tilapia is not economically feasible because of the size of the wetland. Chemicals to poison the fish are very costly. In addition, if one female tilapia with eggs survives, the problem will persist.
9. The USFWS noted that water birds can adapt to nearby construction activities and long term urban use at adjacent resort sites.
10. Dave Hopper will be the contact person for the USFWS.

# TOWNSCAPE, INC.

Planned Communities, Master Plans, Land Use Permits

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April 10, 1998

Mr. Cesar Portugal  
County Engineer  
Department of Public Works  
County of Kauai  
4444 Rice Street  
Lihue, Kauai, Hawaii 96766

Dear Mr. Portugal:

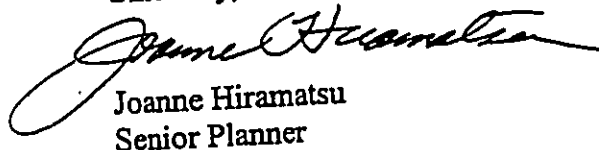
Subject: Kukui'ula Bay Resort Supplemental Environmental Impact Statement (SEIS)

Thank you for meeting with us on April 9, 1998 to discuss issues relative to the proposed changes in the Kukui'ula Planned Community project that have been made in the resort area of the project. Your concerns about traffic, drainage and wastewater will be addressed in the SEIS.

A memorandum documenting the discussion at the meeting is attached for your information. Please feel free to make any corrections or provide clarification on any of the items documented in the minutes.

If you have any questions, please contact the undersigned at 536-6999.

Sincerely,



Joanne Hiramatsu  
Senior Planner

Enclosure

cc: A&B Properties, Inc., with enclosure



# TOWNSCAPE, INC.

Planned Communities, Master Plans, Land Use Permits

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Telephone (808) 536-6999 Facsimile (808) 524-4998  
email address: townscap@panworld.net

## MEMORANDUM

### Kukui'ula Bay Resort

TO: Participants  
FROM: Joanne Hiramatsu  
DATE: April 10, 1998  
SUBJECT: Kukui'ula Bay Resort Supplemental Environmental Impact Statement (SEIS)

PARTICIPANTS: Dan Yasui, A&B - Honolulu  
Tom Shigemoto, A&B - Kauai  
Cesar Portugal, Kauai Department of Public Works (DPW)  
Ken Kitabayashi, DPW  
Joanne Hiramatsu, Townscape, Inc.

The purpose of the meeting on April 9, 1998 was to discuss issues that would be addressed in the SEIS. The following is a summary of our discussion:

1. The areas of general concern to DPW include traffic, drainage and sewage. Background information, along with an assessment of current issues relating to the wetland, will be provided.
2. An updated traffic study is being prepared for the SEIS. The traffic study will discuss access alternatives for the initial phases of the resort. These alternatives include Lawai Beach Road and the project's mauka roadway.

A segment of the mauka roadway will be constructed in the near future to provide access to 30 residential lots in the northeastern corner of the overall project. These lots represent the first residential project at Kukui'ula. This mauka roadway may be extended to the resort area to provide access.

The traffic study will also examine the possibility of utilizing Lawai Beach Road for interim access to the resort. The capacity of Lawai Beach Road and its current level of service will be determined, as well as its capacity to accommodate future projected traffic.

The original traffic study provided access into the resort area from the major project collector road, which was an extension of Poipu Beach Road into the site via a reconfigured intersection with Lawai Road. However, due to the high cost to construct the intersection, which included modifications to an existing bridge, and the shift in development to the mauka residential lots versus the makai lots along this roadway, access to the resort via the major project collector road is not economically feasible. The

County prefers that Lawai Beach Road not be utilized to provide interim access to the resort and that the original plan to provide access via the major project road be implemented.

3. The County has the funds to complete construction of the Eastern Bypass road to Maluhia Road. The project is expected to go out to bid on May 1998, with construction to commence in August or September 1998. Construction is expected to be completed in approximately eight (8) months from award of the contract.
4. Since a large portion of the drainage system has been constructed, the SEIS will describe the current conditions and identify other work that will be performed relative to the construction of the resort. A drainage plan was prepared for the project. Kauai DPW reviewed the drainage plan and did not have any comments. The County does not formally approve the drainage plans. The drainage system has been designed to accommodate 100-year storm flows.
5. The Kukui`ula wastewater treatment plant was constructed to serve the overall project. The SEIS will describe what has been completed to date and what will be constructed to service the resort area.
6. The County noted that maintenance relating to landscaping within the dedicated road rights-of-way, especially trees, should lie with the developer and not the County.

# TOWNSCAPE, INC.

Planned Communities, Master Plans, Land Use Permits

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email address: townscap@panworld.net

April 27, 1998

Mr. Alex Wong  
Clean Water Branch  
Department of Health  
919 Ala Moana Boulevard, Rm. 301  
Honolulu, Hawaii 96814

Dear Mr. Wong:

Subject: Kukui`ula Bay Resort Supplemental Environmental Impact Statement (SEIS)

Thank you for meeting with us on April 13, 1998 to discuss issues relative to the proposed changes in the Kukui`ula Planned Community project that have been made in the resort area of the project, specifically, the creation of the wetland/lagoon.

A memorandum documenting the discussion at the meeting is attached for your information. Please feel free to make any corrections or provide clarification on any of the items documented in the minutes.

If you have any questions, please contact the undersigned at 536-6999.

Sincerely,

  
Joanne Hiramatsu  
Senior Planner

Enclosure

cc: A&B Properties, Inc., with enclosure

# TOWNSCAPE, INC.

Planned Communities, Master Plans, Land Use Permits

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Telephone (808) 536-6999 Facsimile (808) 524-4998  
email address: townscap@panworld.net

## MEMORANDUM Kukui`ula Bay Resort

TO: Participants  
FROM: Joanne Hiramatsu  
DATE: April 14, 1998  
SUBJECT: Kukui`ula Bay Resort Supplemental Environmental Impact Statement (SEIS)

PARTICIPANTS: Dan Yasui, A&B  
Alex Wong, DOH Clean Water Branch  
Ed Chen, DOH Clean Water Branch  
Bruce Tsuchida, Townscape, Inc.  
Joanne Hiramatsu, Townscape, Inc.

The purpose of the meeting on April 13, 1998 was to discuss issues that should be addressed in the SEIS. The following is a summary of our discussion:

1. The DOH is concerned about maintaining the drainage detention and siltation capacity of the existing basin after creation of the proposed wetland. Of major concern to the DOH is the long term maintenance of the created wetland. The SEIS should identify who will be responsible for maintenance dredging of the drainage basin/wetland. It was noted that other siltation basins that are planned above the wetland would reduce the amount of silt that will accumulate in the wetland. Thus, periodic maintenance dredging may be sufficient to maintain a healthy environment.
2. Once the wetland is constructed, the design capacity for detention/retention of storm water runoff will be increased. An overflow pipe to drain the wetland can be installed into the system, as long as the existing and designed detention/retention capacity is maintained.
3. During and after major storms, it is anticipated that the wetland will be underwater. If the vegetation is underwater for an extended length of time, the plants may die and would need to be replaced. Water in the wetland may be pumped to upland areas to maintain appropriate water levels in the wetland to maintain plant life. A permit to pump water out of the wetland and into Kukui`ula Bay may be needed.
4. An NPDES permit for construction activities at the Kukui`ula project was recently extended for an additional five (5) years. This permit will expire in September 2002.
5. The DOH advised that once the wetland is created, it becomes subject to greater environmental scrutiny and regulation..



United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Pacific Islands Ecoregion  
300 Ala Moana Blvd., Room 3-122  
P.O. Box 50088  
Honolulu, Hawaii 96850

Telephone: (808)541-3441; Fax: (808)541-3470

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In reply refer to: DH

In Reply Refer To: DH

MAY 28 1998

Rick Egged, Director  
Office of Planning  
Dept. of Business, Economic Development & Tourism  
235 South Beretania St., 6th floor  
Honolulu, HI 96804

Re: A93-696/Kukui`ula Development Co., Motion for Order to Amend Findings of Fact  
(Ref. No. P-7363), Lawai, Koloa, Kauai

Dear Mr. Egged;

The U.S. Fish and Wildlife Service (Service) has reviewed the March 25, 1998, Motion for Order to Amend Findings of Fact, Conclusions of Law, and Decision and Order, dated 18 May 1995 (Motion for Order). The applicant is Kukui`ula Development Company, Incorporated (KDC). The Service offers the following comments for your consideration.

The Motion for Order requests that a number of conditions outlined in the original proposal be modified or deleted. The proposed modifications/deletions are based on changes in the proposed project or conform to language currently used by the Commission. The conditions to be changed or deleted that are of interest to the Service are numbers: 14, 15, 16, and 31, as outlined below.

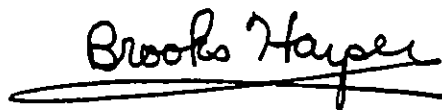
- 1) Condition 14 pertains to the project's drainage master plan, which was approved with the necessary permits and implemented. The endangered species issues relevant to this condition were addressed by the National Marine Fisheries Service.
- 2) Condition 15 is a modification of text to make it conform with current Land Use Commission language. The Service does not object.
- 3) Conditions 16 and 31 pertain to funding for monitoring of endangered marine mammals, sea turtles, *P. capilacea* (a red algae), and the preparation of an EIS and marine management plan. Since the marina is no longer proposed for construction, the petitioner proposes that these conditions be dropped. The Service agrees.

Kukui'ula Development Co.  
Motion for Order to Amend;  
Lawai, Koloa, Kauai

In summary, based on the proposed project changes and the justifications provided by the applicant (KDC), the Service has no objection to the proposed changes or deletions to the original proposal.

The Service appreciates the opportunity to provide comments on this proposed project. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Dave Hopper at 808/541-3441.

Sincerely,

A handwritten signature in black ink that reads "Brooks Harper". The signature is written in a cursive style and is underlined with a single horizontal stroke.

Brooks Harper  
Field Supervisor  
Ecological Services

cc: William Campbell, A&B  
DOFAW, Hawaii  
DAR, Hawaii  
CZM, Hawaii