



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

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

October 13, 2004

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State Office Tower
235 S. Beretania Street, Room 702
Honolulu, Hawaii 96813-2437

RECEIVED
OCT 13 4:17
OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

Dear Ms. Salmonson:

Subject: Final Environmental Impact Statement ("FEIS")
Docket No. A03-744/Hiluihilu Development, LLC
North Kona, Hawaii
TMK No: (3) 7-2-005: 001

The Land Use Commission respectfully requests the publication of the Final Environmental Impact Statement for the subject project in the next available issue of the The Environmental Notice.

Enclosed please find the following:

1. OEQC Bulletin Publication Form
2. Project Summary Description (See attached CD: hiluhilu_FEIS_ProjectSum.doc)
3. Distribution List for the FEIS
4. Distribution Cover Letter to participants
5. Four copies of the FEIS

A copy of the Commission's Order reflecting its action of October 7, 2004, will be provided to you under separate cover.

Should you require clarification or further assistance in this matter, please feel free to contact Max Rogers of my staff at 587-3822.

Sincerely,

A handwritten signature in black ink that reads "Anthony J. Ching".

ANTHONY J. H. CHING
Executive Officer

Enclosures

c: George Atta, Group 70 (w/o enclosures)

2004 FEIS HAWAII
PALAMANUI DEVELOPMENT 1 OF 3

OCT 23 2004

FILE COPY

FINAL ENVIRONMENTAL IMPACT STATEMENT

PALAMANUI
A PROJECT BY HILUHILU DEVELOPMENT
North Kona, Hawai'i
Tax Map Key: 3-7-2-05:01



Applicant:
Hiluhilu Development, LLC

Accepting Authority:
State of Hawai'i Land Use Commission

September 2004



Group 70 International, Inc.
Architecture ■ Planning ■ Interior Design ■ Environmental Services
Honolulu, HI

FINAL ENVIRONMENTAL IMPACT STATEMENT

PALAMANUI

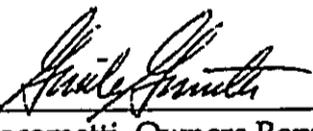
**A PROJECT BY
HILUHILU DEVELOPMENT**

Tax Map Key: 3-7-2-05:01

Applicant:
Hiluhilu Development, LLC
c/o Island Advisors, Inc.
P.O. Box 7121
Kamuela, Hawai'i 96743

This Document is prepared pursuant to Chapter 343, Hawai'i Revised Statutes, as amended, and Chapter 200 of Title 11, State of Hawai'i Department of Health Administrative Rules, Environmental Impact Statement

This document and all other ancillary documents were prepared under my direction.

Responsible Official:  Date: September 10, 2004
Guido Giacometti, Owners Representative

Prepared By:



Group 70 International, Inc.
Architecture ■ Planning ■ Interior Design ■ Environmental Services
925 Bethel Street, Fifth Floor, Honolulu, HI 96813

September 2004

Volume 1 of 3

PALAMANUI – A HILUHILU DEVELOPMENT PROJECT
Final Environmental Impact Statement

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TECHNICAL APPENDICES

The Technical Appendices are printed in two separate volumes of the EIS.

Volume 2 contains Appendices A through F.

Volume 3 contains Appendices G through T.

<u>Appendix</u>	<u>Title</u>
A	<u>Palamanui Civil Infrastructure</u> (Belt Collins Hawai'i Ltd., February 2004)
B	<u>Biological Reconnaissance, Lands of Kau, North Kona, Hawai'i</u> (Patrick Hart, Ph.D., October 2003)
C	<u>ADDENDUM: Archaeological Inventory Survey of the Kau Development Area</u> (Rechtman Consulting, June 2003)
D	<u>Cultural Impact Study Hiluhilu Application Process Project Kau Ahupua'a, Land of Kekaha</u> (Maria E. Ka'imipono Orr, June 13, 2003 revised December 11, 2003)
E	<u>Traffic Impact Assessment Report, Hiluhilu Project. Final Draft.</u> (Austin, Tsutsumi & Associates, Inc., January 27, 2004)
F	<u>Air Quality Study for the Proposed Hiluhilu Project</u> (B.D. Neal & Associates, July 2003)
G	<u>Acoustic Study for the Proposed Palamanui Project, North Kona, Hawai'i</u> (Y. Ebisu & Associates, February 2004)
H	<u>Lands of Kau (North Kona) Soil Report</u> (Yusuf N. Tamimi, Ph.D, July 2003)
I	<u>Fiscal Impact Analysis. Hiluhilu Development Project, County of Hawai'i.</u> (THK Associates, Inc., July 2003). <u>Market Evaluation of Palama Nui and University Village Development Opportunities.</u> (Knowledge Based Consulting Group, in association with THK Associates, July 2003) <u>Residential and University of Hawai'i Town Center Market Analysis Update. Lands of Kau, Kailua-Kona, Hawai'i.</u> (THK Associates, Inc., December 6, 2002).
J	<u>Groundwater Resources of Kau, North Kona, Hawai'i. A Water Study for Hiluhilu Development, LLC.</u> (Waimea Water Services, Inc., June 2003)
K	Development Plan Timetable
L	Alternative Designs
M	Department of Education (DOE) Fairshare Policy

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- N Affordable Housing Policy
- O Hiluhilu Cave Fauna Survey (Hawai'i Biological Survey, December 2003)
- P Keāhole to Kailua State Lands Annual Report for Land Use Commission Docket No. BR92-685 (Office of State Planning, 2003)
- Q Memorandum of Understanding (MUO) between Hiluhilu Development LLC and University of Hawai'i
- R Solid Waste Estimates
- S North Kona Wells Site Planning and Acquisition
- T Integrated Natural Cultural Resource Management Plan

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GLOSSARY OF ACRONYMS

CIA	Cultural Impact Assessment
CCR	Covenants, Conditions and Restrictions
DHHL	Department of Hawaiian Home Lands
DLNR	Department of Land and Natural Resources
DOH	Department of Health
DOT	Department of Transportation
DWS	Department of Water Supply
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
GPD	Gallons Per Day
HAR	Hawai'i Administrative Rules
HELCO	Hawaiian Electric Light Company
HOA	Homeowner's Association
HRS	Hawai'i Revised Statutes
INCRMP	Integrated Natural Cultural Resource Management Plan
kV	kilovolt
LLC	Limited Liability Corporation
LOS	Level of Service
LUC	Land Use Commission
MGD	Million Gallons per Day
MSL	Mean Sea Level
MW	Megawatt
OEQC	Office of Environmental Quality Control
SHPD	State Historic Preservation Division
SOC	Species of Concern
UHCWH	University of Hawai'i Center at West Hawai'i
UV	Ultra Violet
WWTP	Waste Water Treatment Plant

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Section 1.0
Summary

PALAMANUI – A HILUHILU DEVELOPMENT PROJECT
Final Environmental Impact Statement

1.0 SUMMARY

1.1 PROJECT INFORMATION SUMMARY

Project Name: Palamanui – A Hiluhilu Development Project

Applicant: Hiluhilu Development, LLC.
c/o Island Advisors, Inc.
P.O. Box 7121
Kamuela, Hawai'i 96743
Contact: Guido Giacometti, Owner's Representative
Telephone: (808) 882-1924

EIS Accepting Authority: State Land Use Commission

Planning/Environmental Consultant: Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawai'i 96813
Contact: George Atta, AICP
(808) 523-5866

Tax Map Key: 3- 7-2-05:01 (Figure 1-2)

Land Area: 725 acres ±

Location: North Kona Judicial District, Island of Hawai'i
Ahupua'a of Kau (Figure 1-1)

Land Owner: Hiluhilu Development LLC.
P.O. Box 9007, Kailua Kona, Hawai'i 96745

Existing Uses: Vacant

Proposed Uses: Urban. Residential and Commercial Development
(Figure 3-1)

State Land Use District: Conservation and Agriculture: (Figure 1-3 and 5-1)
450.3 acres Agriculture
274.9 acres Conservation

Hawai'i County General Plan: Urban Expansion

**General Plan Land Use Pattern:
Allocation Guide (LUPAG)** Urban Expansion (Figure 5-2)

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Zoning:	Agricultural 3-acre (A-3a)(Figure 5-3) Open (O)
Kona Regional Plan:	Agricultural
Keāhole to Kailua Development Plan Land Use Concept Map:	Residential and Village Center Lands of Kau could provide housing for the resorts in North Kona and South Kona.
Special Management Area:	Project is not located within the SMA
Permits Required:	Land Use Boundary Amendment, Rezoning, Subdivision, Wastewater Treatment Facility and Irrigation, Highway entrance from Queen Ka'ahumanu Highway, Grading and Building Permits, Irrigation Well Permits, NPDES, UIC, Construction related permits.
EIS Trigger:	Property involves Reclassification of Conservation Lands to Urban. The Land Use Commission has determined that an EIS is required pursuant to Chapter 343, HRS, for the reclassification of approximately 725.2 acres of land currently in the Conservation and Agricultural District into Urban District at Kau. (Figure 1-3 and Figure 5-1)
Proposed Palamanui Project:	The Hiluhilu Development LLC., proposes to develop Palamanui, a 725.2-acre vacant parcel in North Kona with residential units, mixed uses, an 18-hole golf course, and a university village center. Applicant is engaged in joint planning with the University of Hawai'i to provide supporting infrastructure located on the Hiluhilu parcel for the proposed West Hawai'i campus on adjacent State Land. See Chapter 3 for details of the proposed project and Figure 3-1 for Conceptual Master Plan of Palamanui.

1.2 PROJECT SITE

The Hiluhilu project site consists of 725.2 acres of vacant land mauka of Queen Ka'ahumanu Highway and makai of Mākālei Estates in North Kona on the Island of Hawai'i. The site is located within the ahupua'a of Kau and is situated near the Kona International Airport at Keāhole (Figure 1-1). The project site is located on Tax Map Key 3- 7-2-05:01 (Figure 1-2). The property is privately owned by the Hiluhilu Development LLC and is being managed by Island Advisors, Inc., a consulting firm in Kamuela, Hawai'i.

PALAMANUI - A HILUHILU DEVELOPMENT PROJECT
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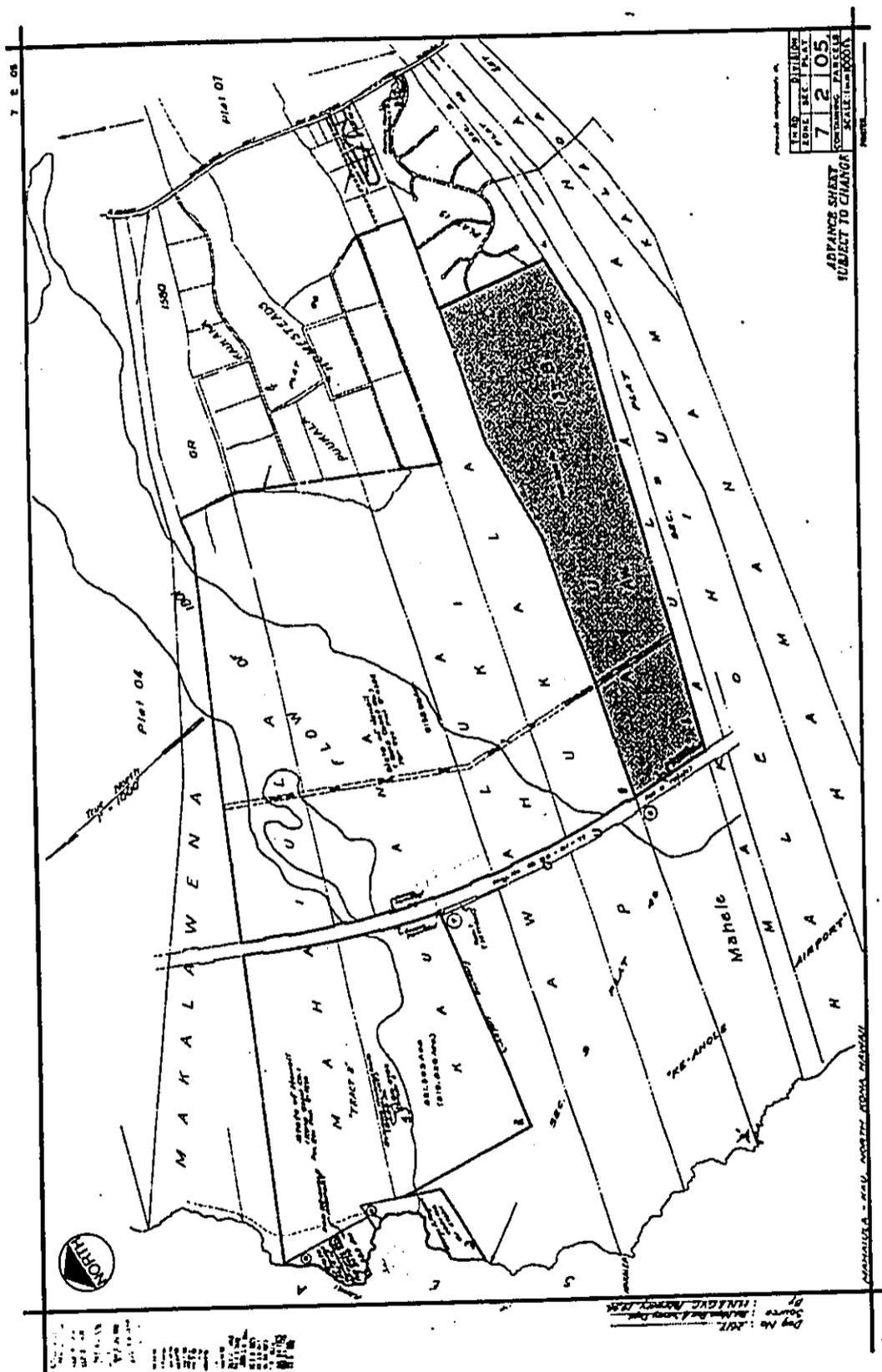


Figure 1-2
 Tax Map Key 3-7-2-05:01

PALAMANUI -A HILUHILU DEVELOPMENT PROJECT

Final Environmental Impact Statement

1.3 PROPOSED ACTIONS

The Hiluhilu Development LLC., proposes to develop Palamanui, a 725.2-acre vacant parcel in North Kona with residential units, mixed uses, an 18-hole golf course, and a university village center. Applicant is engaged in joint planning with the University of Hawai'i to provide supporting infrastructure located on the Hiluhilu parcel for the proposed West Hawai'i campus on adjacent State Land.

The Hiluhilu Master Plan seeks to provide a mix of medium density residential lots and units which will include single-family residential lots and multi-family units for sale or lease, commercial areas within the University Village Center area and adjoining areas for commercial uses, including University related uses and a medical wellness center. The preferred mode of development, subject to agreement with the University of Hawai'i, is to include in the University Village Center area a mixture of classroom and university office, commercial areas, conference facilities, and facilities for community outreach and commercial training support, parking, and athletic fields related to the University. Detailed project descriptions pertaining to the Palamanui project site only -are provided in Section 3.

Hiluhilu will handle the installation of arterial roadways, major electrical improvements (including transmission lines and necessary switching and transformer substations), sewage treatment plant and golf course improvements (including the irrigation wells), the protective enclosures/exclosures and other improvements for preservation of the dry forest preserve, significant trees, and caves with significant fauna and features. Hiluhilu will provide connector roads and other infrastructure to service the residential, retail and commercial lots that it will create.

Hiluhilu will construct the initial phases of the University Village, including buildings for college uses, associated commercial and multi-family residential uses and associated activities. The intent is to set an overall theme which will guide incremental additions over time. Hiluhilu will work with specialty developers for the design and construction of future projects including a modest hotel, medical and research facilities.

However, all of the land will be subject to various covenants and restrictions which will require all owners within Palamanui to comply with design standards and uses as defined in those covenants. The covenants will also include membership in owners' associations, obligate owners to contribute to common area costs, including those for preservation of the botanical, faunal and archaeological resources within Palamanui, obligate owners to comply with all hazardous material laws to comply with all best management practices established by Hiluhilu or the government regarding management of contamination and surface water runoff within Palamanui, and to comply with any applicable conditions imposed by the Land Use Commission or by County zoning on the land.

1.4 REASONS FOR PREPARING THIS ENVIRONMENTAL IMPACT STATEMENT

The proposed actions that are described in this Environmental Impact Statement (EIS) involve development of lands that currently lie in the State Conservation District (Figure 1-3). The developer has submitted a petition to the State Land Use Commission for a reclassification of conservation lands to urban use. The Land Use Commission has determined that an

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Environmental Impact Statement is required pursuant to Chapter 343, Hawai'i Revised Statutes (HRS), and the Environmental Impact Statement Rules, Title 11, Chapter 200 of the Hawai'i Administrative Rules (HAR). This EIS has been filed with the State of Hawai'i's Office of Environmental Quality Control (OEQC) for publication in the Environmental Notice, and copies have been distributed to concerned and interested parties, as required under the EIS Rules.

The ~~Draft~~ Final EIS presents an evaluation of the potential impacts of the proposed Palamanui project on the natural and human environment. This document is presented in twelve sections.

Section 1 contains a summary of the ~~Draft~~ Final EIS.

Section 2 describes the site attributes and market demand for the proposed project.

Section 3 describes the proposed project.

Section 4 describes existing environmental conditions at the project site.

Section 5 identifies the relationship to land use plans, policies, and controls.

Section 6 analyzes the probable impacts and mitigative measures.

Section 7 identifies alternatives to the proposed actions.

Section 8 is a summary of unresolved issues.

Section 9 identifies required approvals and permits.

Section 10 identifies references.

Section 11 identifies agencies and community members consulted.

Section 12 identifies preparers of this report.

Technical appendices supporting this ~~Draft~~ Final EIS are provided in Volumes 2 and 3 of this report.

Appendix A: Civil Infrastructure

Appendix B: Biological Reconnaissance

Appendix C: Archaeological Inventory Survey

Appendix D: Cultural Impact Study

Appendix E: Traffic Impact Assessment Report

Appendix F: Air Quality Study

Appendix G: Acoustic Study

Appendix H: Soil Report.

Appendix I: Fiscal Impact Analysis; Market Evaluations

Appendix J: Groundwater Resources of Kau

Appendix K: Development Plan Timetable

Appendix L: Alternative Design

Appendix M: Department of Education (DOE) Fairshare Policy

Appendix N: Affordable Housing Policy

Appendix O: Hiluhilu Cave Fauna Survey

Appendix P: Keāhole to Kailua State Lands Annual Report for Land Use Commission

Appendix Q: Memorandum of Understanding (MOU) between Hiluhilu Development LLC and University of Hawai'i

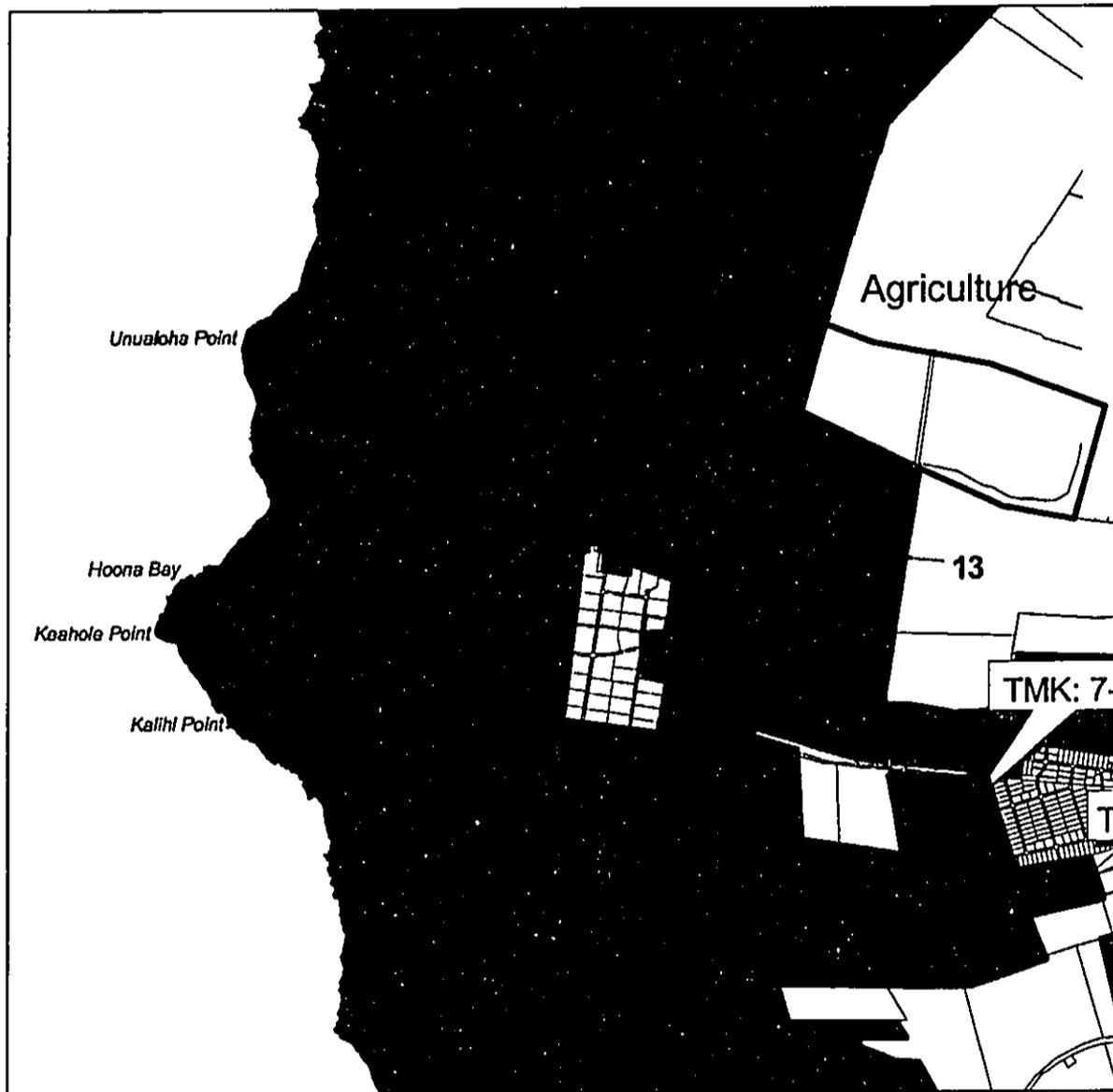
Appendix R: Solid Waste Stream and Estimates

Appendix S: North Kona Wells Site Planning and Acquisition Preliminary Findings

Appendix T: Integrated Natural Cultural Resource Management Plan

The public review and consultation for this Environmental Impact Statement is being processed pursuant to Hawai'i Revised Statutes, Chapter 343 and Chapter 200 of Title 11 Administrative Rules, Department of Health, "Environmental Impact Statement Rules."

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Docket No. BR92-685
 State Land Use Districts
 [White Box] Agricultural
 [Black Box] Conservation
 [Dark Gray Box] Rural
 [Light Gray Box] Urban
 [Grid Box] Project Area



This map was produced by the Office of Planning & Information Systems for planning purposes. It should not be used for any other purpose without the permission of the Office of Planning & Information Systems. The accuracy of the data and the liability of the data provided can be obtained from OPI.

Source:
 Department of the Commissioner, Land of Hawaii
 State Land Use Districts, Aug 1998
 State Land Use Districts, State Land Use Commission, 1998
 Year Printed: 12/2001, 2001

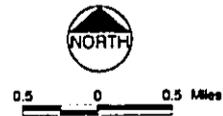


Figure 1-3
 Existing State Land Use District Boundaries: Conservation and Agriculture

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1.5 SIGNIFICANT BENEFICIAL AND ADVERSE IMPACTS

Anticipated beneficial and adverse impacts of the proposed project are listed below.

1.5.1 Beneficial Impacts

Project actions would result in several benefits attributed to specific topics:

- Cultural Resources. Pre-historic sites in the project area have been identified in several archaeological studies. A historic preservation plan was prepared by the project archaeologist in consultation with a community advisory group to protect and preserve the known cultural resources in the area. The plan includes recommendations for the use of some of the resources as interpretive venues for educating students, residents, and visitors about Hawaiian history and culture. Without the project, many of these cultural resources would remain unknown and inaccessible to the people of West Hawai'i. Instead, the resources may become a source of pride and may contribute to the furtherance of education pertaining to Hawaiian culture.
- Land Use. Completion of the project would fulfill the goals, objectives, and policies stated in State and County planning documents. The plans are supportive of urban growth in this area.
- Social Factors. The project would provide a mix of housing in a part of the island in which there is a strong demand for a range of housing types and prices. Assisting the University of Hawai'i to relocate its operations to the new West Hawai'i (UHCWH) campus would immediately bolster the opportunities for higher education in West Hawai'i. A permanent University facility in West Hawai'i would allow its citizens to have a physical symbol and focal point for their educational aspirations including job training and continuing education.
- Economic Factors. In the short-term, the new project would boost the regional economy by providing added employment for construction workers, fees for design and engineering professionals, and profits for construction companies and building suppliers. In the long-term, the project would provide a suitable mix of housing for Kona residents, a base for supporting commercial uses within the project, including increased employment related to those uses, employment related to the proposed golf course and also increased employment opportunities related to the West Hawai'i Campus. Facilitating the establishment of the West Hawai'i Campus would provide Kona residents an opportunity to improve skills to increase employment and would boost diversification of the economy.
- Medical Wellness Center. Part of the program for this project includes a potential medical wellness center.
- Recreation. Community parks will be provided within the development. Bicycle paths will be built within the development. An 18-hole golf course will provide a recreational amenity for residents, university students and the general public in this area.
- Environmental Factors: Protection and preservation of natural, archaeological, cultural and historical features and elements are an integral part of the design of this project. There is a designated Dry Forest area that will be preserved. Detailed measures are

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discussed in Chapter 6. In addition, selected archaeological and cultural elements are preserved under preservation plans.

1.5.2 Potential Adverse Impacts

Potential adverse impacts that may require mitigation measures are summarized below:

- **Topography, Soils and Drainage.** It is anticipated that grading will occur on a localized scale and that cut and fill quantities will generally balance as construction progresses. Soil will be imported for construction of the golf course and landscaping. Drainage patterns will be altered in minor ways.

The short-term impact of the proposed action on soils is limited to the small potential for erosion during construction. All grading operations will be conducted in compliance with dust and erosion control requirements of the County of Hawai'i. A Grading Permit must be obtained from the County of Hawai'i in order to begin construction. During Grading Permit review and approval the grading plans for the site will be reviewed by the Department of Public Works and specific conditions may be attached.

The project does not propose major re-grading of the site. The existing topography will be altered only to the extent necessary for construction of the proposed improvements. It is anticipated that grading will occur on a localized scale and that cut and fill quantities will generally balance as construction progresses.

- **Flood and Tsunami Inundation, Lava Flow and Earthquake Hazards.** The project site is located in lava flow hazard zone "4" with "1" posing the greatest hazard and "9" posing the least. The project site also falls within an earthquake zone that comprises the entire Island of Hawai'i.

Flood: The property is within Zone X, which represents areas determined to be outside the 500-year floodplain.

Tsunami: The Federal Emergency Management Agency Flood Insurance Rate Map indicates no areas of potential tsunami inundation on the property. Due to its elevation and distance from the shore the risk from tsunami hazards is largely non-existent.

Lava Flows: The Kailua-Kona area is within Zone 4, indicating a moderate hazard. Zone 4 includes all of Hualālai, where the frequency of eruptions is lower than on Kilauea and Mauna Loa. Flows typically cover large areas.

Earthquakes: The entire island of Hawai'i is susceptible to earthquakes originating in fault zones under and adjacent to the island. Under the uniform building code seismic provisions, the Zone 4 area could experience severe seismic activity between .30 and .40 of the earth's gravitational acceleration (g-forces) causing major damage to poorly designed or built structures.

- **Surface Water Quality.** The project site has no streams, watercourses or ponds nor is the project site in close proximity to the shoreline. Short-term impacts to surface water are not expected.
- **Groundwater Quality.** Development will result in increased use of groundwater for drinking water, irrigation of landscaping and golf course. There has been concern expressed about impacts of golf course operations on groundwater quality.

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Construction activities on the project site present a risk of contamination from accidental spills of hazardous materials or from non-point source pollution. The Hiluhilu project will include a golf course, medical facility, wastewater treatment plant, and stormwater injection wells. All of these have some potential to introduce contaminants to groundwater migrating beneath Kona International Airport at Keāhole. Also of concern are any potentially negative effects to groundwater quality associated with the Natural Energy Laboratory of Hawai'i (NELHA).

There are indications, according to data produced during the 1999 USGS Kaloko - Honokōhau study, that there may be some man-made influence as inferred by the detection of phenols in the shallow wells makai of the Kaloko Industrial Park (Water Resources Investigation Report 99-4070). There are a number of potential sources of phenols, however, there is no conclusive evidence as to the source. Regardless, there are no bodies of water in the vicinity of Palamanui which might be negatively influenced by the project including the underlying brackish lens.

- Coastal Water. No surface water is expected to reach the coast directly, or flow into drainage ways to reach the coast. There is concern that golf course fertilization if unmanaged, could contaminate the subsurface water flow into the nearby ocean, potentially degrading coastal water quality.
- Hazardous Materials. With the development of health technology industries and the University campus addition, there exists a long-term possibility of hazardous materials being generated and disposed.
- Vegetation and Wildlife. Development in close proximity to the Dry Forest area may have adverse impacts to the area. Certain specimens of trees outside the Dry Forest area may be destroyed or damaged during construction. Mitigative measures will be taken to ensure the proper preservation of the Dry Forest area and certain species of trees in small clusters throughout the project area. Exterior lighting may attract flying insects that in turn may attract species that prey on them, such as the endangered Hawaiian hoary bat. Night-lights and human-made structures may cause injury to sea birds such as the endemic Dark-rumped Petrel. Development activities may impact cave habitats that might contain endemic arthropods.

Short-term effects to vegetation, wildlife and insects can be anticipated wherever site clearing and grading or excavation is necessary. Of particular concern is the potential for disturbance that may affect habitats for endangered species of vegetation or wildlife. The unrestricted movement and growth of rodents and ungulates on project lands can disturb vegetation and wildlife in need of protection.

Vegetation (flora) – Human impact has substantially altered the vegetation on much of the property, either directly (e.g. clearing for farming and ranching) or indirectly (e.g. introduction of cattle and goats, introduction of alien plants, and fire). However, one area still exists where the original Lowland Dry Forest ecosystem is intact (*Figure 4-6*). This Dry Forest remnant is both ecologically and culturally valuable because over 95% of the State's Dry Forests have been destroyed, and the rest are severely degraded (Wagner, et al. 1990). Comprising approximately 65-75 acres, this forest fragment may rank among the most intact of any remaining on the island, and perhaps the State. Preservation of the Dry Forest

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fragment and areas containing rare and endangered trees listed in *Table 4-1*, is a priority during the project planning.

Fauna (Wildlife) – The federally endangered Hawaiian hawk ('Io) was seen on the mauka portion of the property. A specimen of the Hawaiian short-eared owl (Pueo), a federally listed species of concern, was seen on one occasion. Construction activities could disturb nesting of bird species during the breeding season. One introduced but unusual mammal in Kona is the feral donkey (*Equus asinus*). The 'Io and 'Ōpe'ape'a (Hawaiian hoary bat) may breed in the area at certain times of the year. Volant 'Ōpe'ape'a may roost in the area at any time during the year. 'Io may use the area for foraging and loafing at any time during the year. Both species could be disturbed or directly harmed by grubbing and tree felling.

- **Cave Fauna.** There is concern that the proposed project may threaten cave ecosystems.

Short-term effects to cave fauna and ecosystems can be anticipated wherever site clearing and grading or excavation is necessary. The proposed project may threaten cave ecosystems in the following manner 1) alteration or elimination of food and water inputs through changes in land use, 2) alteration of airflow and microclimate in caves by disturbance of the surface, 3) waste disposal and pollution, 4) invasions by alien species, and 5) direct and indirect disturbance of the habitat by human visitors.

- **Cultural Resources.** According to the OEQC guidelines, the types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, religious and spiritual customs. Although based on work done to date, none of these particular cultural practices will be affected by this project.

The project area not only has diverse collections of endemic and indigenous plants, some endangered (hala pepe, uhiuhi and 'aiea), it also has a range of traditional sites that were used in antiquity and in some case until historic times. Consultants (Native Hawaiian kūpuna from this region) expressed concern that certain sites be protected and preserved. Given the botanical resources and the traditional sites, a plan to protect, manage and continue the study of valuable cultural resources and places on this land is necessary. The kūpuna should be involved in this planning process along with other interested persons and the project's expert consultant team.

Construction activities undertaken within an area known to have numerous archaeological sites and botanical resources may inadvertently cause damage to some resources.

- **Archaeological Resources.** While there were no burials found during the archaeological inventory survey, inadvertent discovery may be made during the preparation and construction phases. Construction activities may inadvertently cause damage to some resources.

The archaeological study described residential complexes, caves and remnants of trails in the project site. The Palamanui Master Plan has been designed to preserve significant archaeological features throughout the project area. Roadways, residential units and golf amenities have been sited to avoid disturbance of archaeological assets. It is possible, however, that during construction of Palamanui, that archaeological sites may be disturbed.

Eighty-three archaeological sites were recorded within the boundary of the project area. The most frequent site type is Precontact temporary habitation. Of these, twelve are

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enclosures, ten are lava tubes, six are multi-feature complexes, four are terraces, four are modified outcrops, four are platforms, and two are pavements. Six sites were interpreted as Precontact permanent habitations; three of these are platforms, one is a terrace, and two are multi-feature complexes. One of these may have been associated with the large fishpond (Pa'aiea) reported to have existed along this section of coastline prior to being destroyed by the 1801 lava flow. There are fourteen trails and trail segments recorded, three cairn sites, three pāhoehoe excavations, two isolated finds in lava tubes, and one ceremonial site. Two groupings of petroglyphs were found, one associated with a trail and temporary habitation, and one with a permanent habitation complex. Nine Historic Period sites were identified: two animal enclosures; two boundary markers, a wall, a hunting blind, a road, and two habitation sites. These sites date from the late nineteenth and early twentieth centuries and appear to have been associated with Hu'ehu'e' ranch activities.

- **Air Quality.** Short-term direct and indirect impacts on air quality could potentially occur due to project construction. For a project of this nature, there are two potential types of air pollution emissions that could directly result in short-term air quality impacts during project construction: (1) fugitive dust from vehicle movement and soil excavation; and (2) exhaust emissions from on-site construction equipment. Indirectly, there also could be short-term impacts from slow-moving construction equipment traveling to and from the project sites, from a temporary increase in local traffic caused by commuting construction workers, and from the disruption of normal traffic flow caused by lane closures of adjacent roadways (see *Appendix F*).

Fugitive dust emissions may arise from the grading and dirt-moving activities associated with site clearing and preparation work. The emission rate for fugitive dust emissions from construction activities is difficult to estimate accurately. This is because of its elusive nature of emission and because the potential for its generation varies greatly depending upon the type of soil at the construction site, the amount and type of dirt-disturbing activity taking place, the moisture content of exposed soil in work areas, and the wind speed. The EPA [2] has provided a rough estimate for uncontrolled fugitive dust emissions from construction activity of 1.2 tons per acre per month under conditions of "medium" activity, moderate soil silt content (30%), and precipitation/evaporation (P/E) index of 50. Uncontrolled fugitive dust emissions at the project site would likely be somewhere near that level, depending on the amount of rainfall that occurs. In any case, State of Hawai'i Air Pollution Control Regulations [3] prohibit visible emissions of fugitive dust from construction activities at the property line. Thus, an effective dust control plan for the project construction phase is essential.

Use of the proposed facilities will result in increased motor vehicle traffic in the project area, potentially causing long-term impacts on ambient air quality.

- **Noise.** Construction activities at the project site would generate noise impacts that are temporary in nature. The impacts of construction activities would be experienced by area residents to a degree consistent with each individual's reaction or tolerance to noisy stimuli. Anticipated construction noise would be audible, but relatively low at neighboring properties due to a distance of approximately 6,000 linear feet between the project site and the nearest affected residential community along Ka'imani Drive. Residences in Mākālei Estates are adjacent to the project site but except for the golf course, most work during phases 1 and 2 will be at the lower elevations and miles away.

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Along the existing Queen Ka'ahumanu Highway, traffic noise levels are expected to increase by 3.3 to 4.4 DNL between CY 2003 and CY 2014 as a result of both project and non-project traffic. Along Māmalahoa Highway, traffic noise levels are predicted to increase by 2.3 to 3.5 DNL. Traffic noise increases due to project traffic are predicted to range from 0.6 to 2.1 DNL which is within the range of the noise increases caused by non-project traffic on these two roadways. These increases in traffic noise levels associated with project traffic range from the insignificant to the moderately significant. Fortunately, the larger and more significant increases in traffic noise levels are expected to occur along Queen Ka'ahumanu Highway, where the lands along the highway Rights-of-Way are generally undeveloped.

The project is outside of the airport noise contours, and special aircraft noise attenuation measures are not required over the project area. Project residents should not be impacted by traffic noise from Queen Ka'ahumanu or Māmalahoa Highways since adequate setback distances have been provided from the highways. Noise impacts from the nearby Keāhole Generating Station are not expected to affect the project due to the large distances between the station and the project site. In addition, sound attenuation measures have been recently incorporated into the station's generating equipment, which have reduced plant noise levels to inaudible levels. The developer is aware that overflights can occur from aircraft utilizing Kona International Airport at Keāhole.

- Visual Resources. Increased urbanization reduces open spaces and views of the natural landscape.

In planning the residential areas of the project and the golf course, consideration of the natural slopes and features in the topography have been respected. The development of a golf course will add standard and xeriscape landscaping to an otherwise dry area, enhancing the visual impacts of the area, increasing the desirability and adding value to the residential component.

- Recreational Resources (6.1.14, 6.2.14). Establishing a resident population will create a need for recreational opportunities.
- Population and Employment (6.1.15, 6.2.15). Trends in population and household growth are principal indicators of the potential demand for real estate development. Population growth in the market area has been moderate since 1980; recent data shows this trend continuing. The district of North Kona contributed 22.3% of the growth in Hawai'i County from 1980 to 2001. This trend of population growth in the Palamanui region indicates a demand for more residential development in the area which this project will provide.

The proposed action will place residents on land that is currently undeveloped and will also result in a need for suitable retail and commercial facilities to support those residents and the students, faculty and support staff for the University of Hawai'i who will be located either on the project site or on the adjacent State land. Requiring such persons to go outside the project area will increase traffic on Queen Ka'ahumanu Highway or Māmalahoa Highway.

- Roadways and Traffic. Long-term impacts on surrounding areas include new traffic circulation patterns, increased traffic at intersections with Queen Ka'ahumanu Highway and at Palani Road.

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A Traffic Impact Analysis report was prepared for the proposed project. See *Appendix E*. The report includes an analysis and discussion of each of the proposed access routes, including the intersection of Queen Ka'ahumanu Highway and the entrance for the Kona International Airport at Keāhole (KOA). It also includes the timetable for phases I and II of the Queen Ka'ahumanu Highway expansions. Plans for access to the highway will be coordinated with the State Department of Transportation (DOT).

Construction activities will create some short-term effects primarily from trucks, heavy equipment and other vehicles that will use existing roads - primarily Queen Ka'ahumanu Highway - to access construction areas, for the purpose of delivering construction materials and hauling away demolition debris. While construction vehicles are relatively slow and difficult to maneuver, it is anticipated that they will only marginally affect overall traffic flow, especially since there is little to demolish. Commuting construction workers will slightly increase traffic levels, although their effect is anticipated to be negligible.

A discussion of two (2) alternative plans and the probable impacts the project will have at the three phases of construction is available in Section 6.1.16.

- **Solid Waste.** Solid waste will increase during construction phases. Increased volume of solid waste related to new residential, retail and commercial land uses.

No significant short-term impacts on the existing solid waste collection and disposal system or the environment are anticipated as a result of the proposed development. There will be no demolition waste, as the property is currently undeveloped. The majority of pre-construction waste will be green waste from site clearing. Approximately 1,392 tons of solid waste is expected to be generated from the construction of the proposed 845 residential units. Approximately 1,087 tons of solid waste is expected to be generated from the construction of the proposed 660,000 square feet of commercial activities. Solid waste typically generated by construction activities includes wood, drywall, cardboard, metals and other materials. Palamanui is expected to reach full build out in 2014. After build out, solid waste generated during the operational life of the residential and commercial activities includes paper, plastic, yard waste, glass, metals, other organics and other solid wastes. Solid waste generated by operation activities from the residential units is estimated at 1,056 tons a year. Solid waste generated by operation activities from the commercial units is estimated at 753 tons a year. Solid Waste calculations are provided in Appendix R.

Pu'u Anahulu Landfill is the closest solid waste disposal facility to the proposed project. According to the Draft EIS for the East Hawai'i Regional Sort Station, September 2003, "At the end of 2002 the Pu'u Anahulu Landfill had slightly more than 12 million cubic yards of permitted air space. Assuming the in-place density averages 1,100 pounds per cubic yard, and cover materials make up 20% of the volume, the remaining capacity of the Pu'u Anahulu Landfill is 5.28 million tons." Approximately 1,809 tons of solid waste is estimated to be generated a year from the operation of the residential and commercial components of the proposed project. The proposed project will contribute less than .001% of total capacity of solid waste to the landfill a year. In effect, this project will have a very small impact on the life of the landfill.

- **Utilities/Power/Infrastructure.** There will be an increased use of electrical energy and utility services.

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In order to serve the entire project, a 150-foot by 150-foot substation lot located adjacent to the existing 69,000-volt transmission line easement must be dedicated to HELCO in fee simple. This lot is required to install a new electrical substation to convert the voltage from 69,000 volts to 12,000 volts to serve the project loads. Based on the 725 acres available for the residential and commercial development, HELCO will require a new substation to serve the project's anticipated loads. The developer's electrical consultant is required to submit a load schedule to HELCO before the final electrical requirements may be determined. HELCO may be able to serve the initial phases of the development from the Mākālei Estates underground distribution system just mauka of the project site, provided that HELCO's Hu'ehu'e substation capacity is upgraded from 7.5 MVA to 10.0 MVA and the proper easements are obtained.

HELCO's total system generating capacity is 233,700 kW and the system peak load was 177,900 kW, which occurred on December 30, 2002. The current generation reserve margin of 31.4% is adequate to serve the proposed project. An additional 40,000 kW generating capacity is planned to be installed at Keāhole Power Plant in the near future.

The development of Palamanui will require improvements to the County Department of Water Supply (DWS) system for the area, including completion of Kau Well 2, outfitting it with a 700 GPM submersible pump and providing necessary appurtenances; new transmission lines, particularly between Well No. 2 and the DWS Pu'ukala Tank; storage tanks; a water system on the property built to DWS's standards and related improvements.

The on-site collection, treatment, and disposal of wastewater will not impact any existing wastewater systems.

- **Education.** Using the DOE formula for impact and assessment it is projected that Palamanui will generate 379 students from grades K to 12 who will need school services. Senior citizen housing and the University Inn do not count toward the DOE impact. Acreage standards for DOE schools vary from 8 acres for elementary schools to 50 acres for high schools. Elementary school populations are generally planned for campuses up to 800 students. Clearly Palamanui will not generate enough students to fill one elementary school campus. However, school planning is by school service district and school complexes focused on the high school in the region. Also, the formula for fair share that is adopted by the DOE is not linked to the school size but to potential numbers of students generated and a pro rata cost associated with that student. How this pro rata cost share is met is subject to negotiation in an agreement with the DOE. The DOE will decide whether a school site is needed. The value of any land dedication clearly needs to be in proportion to the potential impact from the development. The nexus for the impact will be clarified in the agreement.

Hiluhilu Development will offer a school site to meet all or part of its fair share contribution if that is the DOE's wish. The agreement between the DOE and Hiluhilu will be in place before the start of housing construction.

If the DOE determines that land dedication is required, Hiluhilu Development would provide the land within the Palamanui project site. Such a requirement, however, would involve additional planning, site design analysis and negotiations with the DOE to determine facility needs and siting requirements. If the DOE determines that a fee in-lieu is required, clarification will be needed to clarify fair share calculations.

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- Agriculture. Lands previously used for ranching will no longer be available for such agricultural use.

The project will result in the immediate loss of 464.5 acres of State and County designated agricultural land. The lands, previously used for ranching will no longer be available for such agricultural use.

- Adjacent and Nearby Lands (6.2.20). Land to the north of the project site along Queen Ka'ahumanu Highway is in the conservation district. The reclassification of the project site to urban effectively shifts the conservation district line to the northern boundary of the project site.

Land uses of adjacent and nearby areas consist of residential to the east (Mākālei Estates), vacant land to the west north and south. Land uses to the southeast and northeast are *primarily residential*.

Currently, most of the land in the Kau ahupua'a is vacant. This project will add to the urbanization of North Kona. The adjacent UHCWH will be a magnet campus, which will attract other developments and land uses in this area. This growth is consistent with the County General Plan designation of the site within its urban expansion areas.

- Conservation Classification. Removal of the conservation classification to the urban classification will remove the protective use restrictions and CDUA permit process under which DLNR would review proposed uses.

1.6 PROPOSED MITIGATIVE MEASURES

Mitigative measures will be implemented to minimize the potential impacts, as well as to address and eliminate other potential adverse impacts. Mitigation measures that address potential adverse impacts are summarized below:

An Integrated Natural Cultural Resource Management Plan is being prepared to address preservation, management, mitigation, and stewardship measures for the project.

- Topography, Soils and Drainage. No significant long-term impacts to the topography are expected. Storm water runoff from impervious areas will be collected through a system of swales, catch basins, and pipes and transported to drywells or infiltration areas for disposal within Palamanui. Infiltration areas will be located on the golf course and other open spaces, where practical. Buffers and small siltation basins will help to filter and trap potential pollutants onsite through physical and biological means. Soil that is imported for golf course and landscaping will be covered or planted promptly after installation of the soil to minimize erosion. The dry wells and retention basins will be designed to filter pollutants and silt through sand and gravel layers. Vegetated retention basins will also provide some biological uptake of nutrients in stormwater. In addition, stormwater entering the groundwater from the project site will be filtered through soil and lava. Percolation through such thick soil and lava layers will effectively remove most pollutants from the storm water before it reaches groundwater.
- Flood and Tsunami Inundation, Lava Flow and Earthquake Hazards. The project area will be served by access roads connecting to both the Queen Ka'ahumanu Highway adjacent to the makai boundary of the project and to the Māmalahoa Highway via the Mākālei Estates subdivision road extending from said highway to the project boundary. Either road can

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serve as emergency egress from the project. There is sufficient space above the project site for the placement of lava diversion barriers if the technology for such devices improves and their effectiveness is proven. With respect to the earthquake hazard, the project includes the construction of one to two-story buildings built in accordance with Uniform Building Code requirements for Seismic Zone 3, which contain structural design standards for earthquake resistance.

- **Surface Water.** There are no streams or drainage ways in the area and any man-made runoff should be directed underground as it is presently part of the existing recharge and should not be lost to the system. There are no bodies of water in the vicinity of Kau project which might be negatively influenced by the project which might be negatively influenced by the project
- **Groundwater.** Surface runoff generated by the development will be channeled through swales and storm drains into dry wells, drainage sumps, detention or infiltration areas. This will allow percolation of the water into the groundwater system. The drainage system will be designed using best management practices to filter out surface pollutants to the extent practicable.
- **Coastal Water.** The golf course will be properly designed and managed as to minimize impact on the coastal waters. The turf areas will be properly graded and underlain with layers of subcourse. Along with the turf, soil layers will be thick enough to absorb and bind nutrients to the surface. Additionally, golf course maintenance will follow best management practices and will be fertilized as much as the turf requires, no more. This will ensure that little or no fertilizer will leach into the ground. The arid climatic conditions will require additional irrigation using brackish non-potable water which will be provided by on-site wells and treated wastewater from the project. The use of treated wastewater to supplement irrigation will result in the consumption of phosphorus and nitrogen in the treated wastewater in the turf. This will allow us to reduce supplemental fertilization. Landscaping design, including plant selection and depth of soil will limit the need for excessive irrigation. As part of the planning, the golf course will use salt tolerant grasses.
- **Hazardous Materials.** The University system already has developed plans for handling hazardous materials and will utilize the same stringent standards on this satellite addition to their university system. Accordingly, a policy and plan will be developed addressing the production and disposal of hazardous waste materials for the technology park. The golf course will also have a monitoring system in place and Best Management Practices and Integrated Pest Control Management will be utilized.
- **Vegetation and Wildlife.** The Dry Forest area will be preserved according to a preservation plan that is being developed. The plan would protect the endangered species and dryforest area identified in Patrick Hart's study. Exceptional tree specimens identified in the Hart study which are outside the dry forest area will be preserved as much as possible. Landscaping within Palamanui will use native species to the extent practicable. None of the known trees listed on the endangered species list will be destroyed. An Integrated Natural Cultural Resource Management Plan (INCRMP) will be developed to address preservation, mitigation, management and stewardship measures relating to the botanical resources within Palamanui. Land clearing will be coordinated to avoid disturbing nesting birds during the breeding season. Night lighting will be properly shielded to minimize potential injury to bats and Dark-rumped Petrels.

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- Cave Fauna. Efforts to minimize impacts to cave habitats during grading will be undertaken during the construction period. The development will be subject to the recommendations of the cave fauna study which include the following measures: place significant caves along with a suitable buffer area of the surface surrounding the cave footprints within protective reserves; control harmful invasive species within the cave reserves (especially fountain grass), and prevent the introduction of additional harmful invasive species; monitor the surface vegetation over the cave footprints, and where possible, take remedial steps to encourage recovery of deep-rooted native species; prevent wildfires; consider including mitigation to minimize impacts on the cave ecosystem when managing open space, where appropriate; consider gating especially sensitive and significant caves; conduct additional biological surveys and ecological studies in caves by competent cave biologists with the goal of determining appropriate protective management strategies for subterranean ecosystems; conduct biological surveys of cave segments discovered during project development.
- Cultural Resources. The project's archaeologist will submit to the State Historic Preservation Division for its review and approval a conceptual historic preservation plan to protect important archeological sites and historic and cultural resources. Incorporation of the plan would also result in the previously mentioned benefits from the use of resources via interpretive venues. An Integrated Natural Cultural Resource Management Plan (INCRMP) will be developed to address preservation, mitigation, management and stewardship issues. While no burials were found during the archaeological inventory survey, any inadvertent discovery made during the various preparation and construction phases of the proposed project, will follow proper protocols as required by the Hawai'i State Historic Preservation Division (SHPD) Burial Sites Program. Landscape design will avoid "overgreening" in keeping with Kekaha's sense of place. Implementation of the Natural Cultural Resource Management Plan will involve an ongoing process of communication with community representatives on use of and access to resources of significance in traditional Hawaiian practices.
- Archaeological Resources. The Palamanui master plan has been redesigned to preserve significant archaeological sites throughout the project site. Sites recommended for possible preservation will be surveyed, and the site plan modified as necessary to ensure proper treatment of significant archaeological features. In cooperation with the State Historic Preservation Office, a treatment and mitigation plan will be developed for any features determined to be archaeologically or historically significant. An Integrated Natural Cultural Resource Management Plan will be designed to identify specific preservation and mitigation measures regarding the archaeological resources. As of March 2004, the archaeological inventory survey is still pending review by the State Historic Preservation Division, Department of Land and Natural resources.
- Air Quality. Short-term impacts from fugitive dust will likely occur during the project construction phase. To a lesser extent, exhaust emissions from stationary and mobile construction equipment, from the disruption of traffic, and from workers' vehicles may also affect air quality during the period of construction. State air pollution control regulations require that there be no visible fugitive dust emissions at the property line. Hence, an effective dust control plan must be implemented to ensure compliance with State regulations. Fugitive dust emissions can be controlled to a large extent by watering active work areas, using wind screens, keeping adjacent paved roads clean, and by covering of

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open-bodied trucks. Other dust control measures could include limiting the area that can be disturbed at any given time and/or mulching or mechanically stabilizing inactive areas that have been worked. Paving and landscaping of project areas early in the construction schedule will also reduce dust emissions. Monitoring dust at the project boundary during the period of construction could be considered as a means to evaluate the effectiveness of the project dust control program. Exhaust emissions can be mitigated by moving construction equipment and workers to and from the project site during off-peak traffic hours. After construction, motor vehicles coming to and from the proposed development will result in a long-term increase in air pollution emissions in the project area. With the project in the year 2010, carbon monoxide concentrations were estimated to increase by about 20 to 30 percent in the project area compared to the without project case, but concentrations would still likely remain equal to or lower than the existing levels due to dispersal and low levels of existing conditions. Implementing mitigation measures for traffic-related air quality impacts is probably unnecessary and unwarranted.

- **Noise.** Unavoidable but temporary noise impacts may occur during the construction of the proposed project. Because construction activities are predicted to be audible at adjoining properties, the quality of the acoustic environment may be degraded to unacceptable levels during periods of construction. Mitigation measures to reduce construction noise to inaudible levels will not be practical in all cases. For this reason, the use of quiet equipment and construction curfew periods as required under the State Department of Health noise regulations will be implemented to minimize construction noise impacts.
- **Visual Resources.** View planes are preserved throughout. Clustering of dwelling units in sections of the project will preserve the open space character. The philosophy of the development is to "build to the land," avoiding major cuts and fills, designed to facilitate pedestrian access and provide a better quality of life for residents over the long-term. All buildings for the University Village and Center will be one to three stories to create a low profile that is compatible with the expansive lava-strewn setting of the site. Buildings will be designed with sensitivity to the surroundings of the project site. The character and color of the surrounding lava would be used as a design element that contributes to a Hawaiian sense of place.
- **Recreational Resources.** The planned improvements at Palamanui will expand access to recreational resources by providing a golf course for private and public use. Small passive community parks (5 acres) and active park (5 acres) use will be developed as part of the project. Active parks will have playfields and courts supporting basketball, volleyball and tennis. The 5 acres of land for active park uses will be accessible for public use; that area can be dedicated to the County of Hawai'i if the County is agreeable to accepting dedication. The University Village will include both indoor and outdoor recreational venues for residents.
- **Population and Employment.** The proposed action would provide a housing mix and, through the University of Hawai'i generate educational benefits that allow the residents of the West Hawai'i region to pursue careers in service and sales occupations, executive/managerial and professional occupations, and scientific enterprises related to astronomy and ocean engineering. Population growth in the market area has been moderate since 1980; recent data shows this trend continuing. The district of North Kona contributed 22.3% of the growth in Hawai'i County from 1980 to 2001. This trend of

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population growth in the Palamanui region indicates a demand for more residential development in the area which this project will provide. The proposed action will provide suitable retail and commercial facilities to support the residents on this land and the University of Hawai'i students, faculty and supporting staff.

- **Roadways and Traffic.** Developing a project with supporting retail and commercial facilities for the residents in Palamanui and students and faculty at the University of Hawaii will decrease traffic that would otherwise occur if residential uses only were developed on the project. The project will mitigate the impacts of traffic volume increases outside Palamanui by implementing deceleration lanes, right and left-turn lanes, at critical intersections. These mitigative measures are further outlined in Section 6.2.16, Roadways and Traffic.
- **Solid Waste.** A solid waste management plan will be developed which will identify efforts to minimize waste generated at Palamanui during construction and operation. Hiluhilu Development intends to reduce the impact Palamanui may have on the County landfill by promoting a recycling program among commercial retailers. Tenants of the commercial center will be encouraged to utilize separate containers for cardboard disposal and other recyclable waste. This will reduce the commercial element's potential contribution to the landfill by between 15 to 40%. Additionally, the senior housing and multi-family development will be encouraged to develop its own recycling program providing dedicated waste separation receptacles for residents. Space for recycling operation will be provided in the development.
- **Utilities/Power/Infrastructure.** The project will require electrical energy from Hawaii Electric Light Company (HELCO). Additional substation capacity will be added per comments from HELCO. The design of improvements in Palamanui will include sustainable design principles to reduce use of electrical energy. See section 3.1.18 for more detailed discussion. Water pumpage for the brackish water irrigation system will be done during off peak hours to reduce peak hour demands on the HELCO system.
- **Housing.** Recognizing the need and requirement for affordable housing, Palamanui will include 100 units of housing within Palamanui to meet the anticipated 10% affordable housing policy of the County of Hawai'i. It is planned for 50 of these units will be for rental and 50 will be for sale. Most of these units will be built in or near the University Village. For the affordable housing units, the anticipated distribution will be one third in the 80 to 100 percent applicable median income, one third in the 100 to 120 percent applicable median income and one third to the 120 to 140 percent of applicable median income. Any agreement regarding affordable housing will have to be approved by the State and County of Hawai'i. See section 6.2.18.3 and Appendix N for details regarding affordable housing contributions.
- **Education.** Hiluhilu Development will contribute to the development, funding and / or construction of school facilities, on a fair share basis, as determined by and to the satisfaction of the Department of Education. Terms of the contribution will be agreed upon in writing by Hiluhilu Development and the Department of Education prior to obtaining county subdivision and building permits.

Fair share contributions are unresolved at this time. Preliminary discussions with State Department of Education regarding current fair share policies and development towards an

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agreement are ongoing. Hiluhilu Development is currently reviewing the State Department of Education Fair Share program.

Hiluhilu Development will work with the DOE to determine if the fair-share contribution should be paid in land, in fees, or a combination of both. At minimum, Hiluhilu Development can expect to contribute a fair share towards the construction cost of future educational facilities.

If the DOE determines that land dedication is required, Hiluhilu Development would provide the land within the Palamanui project site. Such a requirement, however, would involve additional planning, site design analysis and negotiations with the DOE to determine facility needs and siting requirements. If the DOE determines that a fee in-lieu is required, clarification will be needed to clarify fair share calculations. Section 6.2.18.4 and Appendix M provides further details.

- **Public Facilities.** The sites for a new fire station or police substation can be made available to these departments if needed. A wildfire plan will be developed for Palamanui. This plan will consider both the risks to natural resources such as the dry land forest preserve and cave environments as well as residences and other urban development. The project plan provides space for medical facilities and emergency services. All roads will be built to accommodate emergency vehicles. Clinics and Doctors' offices are planned for Palamanui along with medical research and other healthcare related establishments.
- **Agriculture.** The soil study conducted by Yusuf Tamimi concluded that given the marginal productivity of the land and the cost of grading, providing access and providing irrigation water, the project site was not suitable for commercial agriculture.
- **Adjacent and Nearby Lands.** Currently, most of the land in the Kau ahupua'a is vacant. In the long-term, this project will add to the urbanization of North Kona. The adjacent UHCWH will be a magnet campus, which will attract other developments and land uses in this area. This growth is consistent with the County General Plan designation of the site within its urban expansion areas.
- **Conservation Classification.** The significant archaeological sites and features within the conservation district portion of the project site will be protected under a treatment plan approved by the State Historic Preservation Division. The Integrated Natural Resources Cultural Resource Management Plan will address the mitigation, management and stewardship of botanical resources within the project site.

Details of mitigation measures for adverse impacts are discussed in detail in Part 6.

1.7 ALTERNATIVES

The potential benefits and impacts of several alternative development schemes were evaluated along with a no-action alternative. These analyses and summaries are provided in Chapter 7 of this document. They include:

- a) No action
- b) Expanding Mākālei Estates
- c) Developing a conventional subdivision without a golf course
- d) No linkages with UH
- e) Develop a commercial and light industrial complex

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- f) Alternative locations
- g) No Reclassification of Conservation lands

1.7.1 No-Action Alternative

The "no-action" alternative would involve no changes to the existing parcel. The parcel would remain undeveloped. The benefits from the development will not be realized. Such a choice would impact support for the adjacent development of the University of Hawai'i expansion campus at West Hawai'i. This alternative was reviewed and rejected early in the planning process.

1.7.2 Other Alternatives

In addition to the alternatives listed above, several concept plans were developed which differed in their layouts regarding the mid-level connection of the proposed Keāhole to Kailua roadway into the Hiluhilu parcel; the layout of the golf course in regards to overall site planning and; the details of the University Village concept which links the Hiluhilu development with the adjacent University of Hawai'i West Hawai'i Campus expansion. Extension of the Agricultural subdivision pattern below Mākālei Estates was another option considered.

1.8 UNRESOLVED ISSUES

Several unresolved issues remain at this time. Details are provided in Chapter 8.

- a) Access to Palamanui
- b) Location for an Injection Well
- c) Long-term mauka-makai road alignment and Extent of Traffic Improvements and Fair Share Contributions
- d) Cultural and archaeological concerns
- e) Water use and development
- f) Endangered species
- g) Timing with University Development
- h) Extent of Fair Share Contributions for the Department of Education
- i) Affordable Housing Requirement
- j) No linkage to University of Hawai'i

1.9 COMPATIBILITY WITH LAND USE POLICIES AND PLANS

The proposed action is compatible with existing State policy documents (i.e. Hawai'i State Plan and Functional Plans, and the West Hawai'i Regional Plan). The proposed actions would be compatible with State and County policy documents such as the Hawai'i County General Plan and the Keāhole to Kailua Development Plan. This project will require a State Land Use Boundary Amendment and Rezoning in order to comply with State land use and County zoning requirements.

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1.10 REQUIRED APPROVALS AND PERMITS

Several approvals and permits are required in order for this project to proceed.

- Acceptance of the Final Environmental Impact Statement by the State Land Use Commission
- Petition for a State Land Use Boundary Amendment to be approved by the State Land Use Commission
- Rezoning approval by Hawai'i County Planning Commission, County Council and Mayor
- Subdivision, grading and building permits approved by the County of Hawai'i, Planning and Public Works Departments
- Wastewater treatment facility and irrigation with treated effluent, approved by State of Hawai'i Department of Health
- Highway entrance from Queen Ka'ahumanu Highway, approved by State Department of Transportation
- Water Source and Distribution System, approved by the Hawai'i County Department of Water Supply
- State Historic Preservation Office Chapter 6E review
- Endangered Species Act review by DLNR and USFWS
- National Pollutant Discharge Elimination System (NPDES) permit approved by State Department of Health
- Brackish and potable wells permits for the project approved by the Commission on Water Resources Management
- Underground Injection and Control Permit (UIC) approved by the State Department of Health
- Review by Disability and Communication Access Board

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Section 2.0
Purpose and Need for the Proposed Action

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2.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

2.1 SITE AND PROJECT ATTRIBUTES

The Palamanui project site, being developed by Hiluhilu Development LLC., is vacant. The 725.2-acre parcel is six miles north of Kailua-Kona, just east and inland of Kona International Airport at Keāhole, and fronts Queen Ka'ahumanu Highway, extending upward to Mākālei Estates subdivision. The property also abuts State property planned for the University of Hawai'i Center of West Hawai'i (UHCWH). Previously, the property was used by Hu'ehu'e ranch for ranching and the site continues to hold State and County agricultural and conservation land use designations.

The site is the northern boundary of the County's urban growth area. As such it can function as the northern urban node for a mixture of commercial, retail and professional services. These services are needed to accommodate the growing population of North Kona. Development of such a node at the Palamanui location can temper some of the job growth and urban preserves that draws traffic and services to Kailua Kona. It potentially serves as a countervailing force distributing growth more evenly.

2.2 PURPOSE AND NEED FOR MIXED RESIDENTIAL DEVELOPMENT

A market analysis was conducted by THK in 2002 to measure market demand for commercial uses. In 2003, THK conducted another market analysis to measure market demand and identify components to develop Palamanui as a competitive project in the Kona housing market. Both market studies are included in *Appendix I*.

2.2.1 Market Analysis for Mixed Residential

The 2003 marketing study showed that new household formations would average 1,360 per year in Hawai'i County during the projection period. That would create a demand for 1,465 dwellings per year after adjustments for vacancies and demolitions (see *Appendix I*). Of these, single-family detached dwellings (1,192 units average per year) will account for approximately 81% of the dwellings. Townhouse and condominiums (90 units average per year) will account for 6% of the dwellings while rental apartments (180 units average per year) will account for 12% of the dwellings.

The 2003 THK marketing study also showed strong market support for a mix of moderately priced residential products within a University Village community setting. THK analyzed the factors that would allow Palamanui to obtain a competitive position in relation to other Kona projects. The location of the site, planned amenities and access to regional employment, retail and recreation centers are all factors that influence the relative desirability of residential projects. The market study showed that the location of the project, the mix of moderately priced residential products including lots, patio homes, townhomes, apartments and senior housing developed in conjunction with a golf course would effectively target the needs of local and seasonal residents.

2.2.2 Market Analysis for Commercial

The 2002 THK market study (*Appendix I*) considered the demand for retail, research and development and commercial space for the project trade area.

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Based on projected annual job growth in the trade area, THK estimated job growth by sector to project additional space requirements for retail, office, and research and development space over the next ten years. Retail job growth is projected to average 203 annually. At 350 square feet needed per employee, an additional 700,000 square feet of retail space will be required in the primary trade area. THK estimates a site capture of 15% of this space, meaning 106,000 square feet of retail space will be demanded at the Palamanui Development site. With coverage of 22% and a speculative factor of 50%, the Palamanui Development site can support 17 acres of retail development. Following the same methodology, the office and research and development/flex markets yield 6 acres and 13 acres of space respectively.

Retail, commercial, office and industrial markets were examined and described in the Residential and University of Town Center Market Analysis Update report (December 2002) which is provided in Appendix I. The demand for retail, hotel, office, flexible research and development uses to serve the residential, educational and medical components of Palamanui were also analyzed in this study. (Note, while the project is now projected to be built by 2014, this data is still useful in validating that a demand is present for office use).

- **Demand of Office.** Employment growth in the Kona region during the next decade will be dominated by service oriented, white collar occupations. Total office employment is projected to increase by an average of 382 per year over the next decade. Service employment is projected to account for an average of 284 new office employees annually, or 74.2% of the total growth in office employment. The FIRE (Finance, Insurance and Real Estate) sector is projected to add 44 jobs annually and the retails sector is projected to add 32 office employees annually. The increasing use of sophisticated electronic business machines and the adoption of open space floorplans that can be adapted rapidly as space needs change are two important trends affecting the demand for office space. New technology will enable firms to do more work with fewer employees. Routine filing and recordkeeping will be handled automatically, reducing the demand for unskilled office help. On the other hand, firms will need space for expansions to accommodate the growing use of electronic equipment. Consequently, while the actual space available for each office worker will decline, the average number of square feet per office employee will increase. The national average square footage per metropolitan office employee increased from 195 square feet to 230 square feet, primarily because of increased equipment needs. Given that growth in office employment will average 382 workers per year, there should be an average annual demand for just under 87,000 square feet of office space from 2002 to 2012. Approximately 17.5% of this demand, 15,650 square feet per year, is projected to be captured at the Palamanui project site. This will require approximately 16 acres of land for office use. (Note, while the project is now projected to be built by 2014, this data is still useful in validating that a demand is present for office use).
- **Projected Demand for Flexible Research and Development Building Space.** The percentages of new employment that will be housed in these buildings for each major industrial group is identified in the report. (See *Appendix I*). Industrial employment is projected to experience an average annual growth rate of 113 jobs from 2002 to 2012. The services sector is expected to account for 82% of the total growth. Industrial employers are estimated to require approximately 450 square feet per employee. A total of 551, 536 square feet of flexible research and development space is projected for the period of 2002 to 2012. Palamanui project area is expected to capture 33% of the projected new annual demand for

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flexible research and development space for a total of 167,305 square feet. Approximately 11 acres of land area would be required to support the research and demand space uses, assuming a Floor Area Ratio of 35%. (Note, while the project is now projected to be built by 2014, this data is still useful in validating that a demand is present for office use).

- **Retail Demand.** With 29,709 households currently existing in the Palamanui trade area, \$623 million of retail sales should occur in 2002 and these expenditures would support 2.9 million square feet of retail establishments. By 2012, retail sales is projected to increase to \$813 million with support for 3.7 million square feet of retail establishments. Annually during the next decade, Palamanui market needs to add approximately 87,000 square feet of retail space. Secondary support from college students, tourist, and recreational visitors is projected to support an addition 24% of sales. A successful grocery store with 42,228 square feet of gross leasable area (GLA) needs to have 2,663 supporting households spending \$5,385 per household to generate total annual sales of \$14.3 million or \$339.55 per square feet of GLA. (Note, while the project is now projected to be built by 2014, this data is still useful in validating that a demand is present for office use).
- **Retail Development Potentials at Palamanui.** The site's location along the Kohala Coast and planned amenities is projected to capture a strong portion of retail demand in the trade area. It is expected that future retail development could support approximately 17 acres with a mix of retail space. The 2002 study suggested that the retail services area be anchored by a small grocery store, complimented with restaurants, clothing stores, home furnishings, and numerous miscellaneous retail shops. The report also provided analysis of demand for hotel accommodations and senior housing accommodations. (Note, while the project is now projected to be built by 2014, this data is still useful in validating that a demand is present for office use). See *Appendix I* for further details and worksheets.

Market Results

Market study results indicate strong support to develop a mixed residential and commercial project at the Palamanui project site. THK found a strong positive consumer response to the University Village concept being incorporated into the project planning. The University Village includes classroom and cultural facilities and programs, village shopping, University Inn, conference center, student and faculty housing. The University Village would span the Palamanui site and the adjacent state site with a pedestrian oriented corridor. The components of the University Village would be developed under design guidelines which would be developed cooperatively between Hiluhilu, the University of Hawai'i and the County of Hawai'i. This development and planned residential uses will be compatible with areas being allocated for medical services and support, research and development and future community commercial uses.

In order to provide sufficient space to accommodate the business activities with an allowance for additional expansion, 6 acres was set aside for University leases, 8 acres for Village Commercial, 8 acres for University Village Inn, 10 acres for the medical campus, 50 acres for research and development and 20 acres for community commercial providing supporting retail and commercial facilities within Palamanui will allow a significant reduction in traffic that would otherwise be produced between the project and adjacent University areas and retail and commercial areas in the Kailua-Kona areas.

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Recreational resources are limited in North Kona. The golf course will increase both public and private recreational resources in the region. The active and passive parks in the area will improve access to recreational resources in the area.

Roadway connections and infrastructure connections established by the project will improve regional traffic circulation and water service delivery. A new, much needed mauka-makai roadway connection will be created. Completion of the water transmission line from the system along Māmalahoa Highway to Queen Ka'ahumanu will improve services by creating a more reliable loop system that increases pressure and flow.

2.2.3 Economic and Fiscal Analysis

In addition to market analysis, Hiluhilu Development requested THK to conduct a Fiscal Impact Analysis to measure the potential economic benefits the proposed development plan would have on the local economy. An economic and fiscal impact analysis was completed by THK (2003) and is included in *Appendix I*. The fiscal analysis projects the following economic benefits to the community:

- The proposed Palamanui project has the potential to contribute over \$25 million in net revenues to the County of Hawai'i through property taxes, fuel taxes, utility taxes, license fees, permits, state and federal grants.
- The State of Hawai'i could receive surplus revenues of \$17.7 million over the development period from a combination of excise taxes, accommodations tax, transfer taxes, utility taxes, and income taxes on individuals and businesses.
- Total construction costs are estimated over \$305 million, creating some 2,500 person-years of employment. State revenues from excise taxes, conveyance fees and income taxes on construction workers and businesses should amount to \$13.9 million over the ten-year buildout period. Further details of these benefits are described in Chapter 3.

2.3 PURPOSE AND DESIRABILITY FOR LINKAGE WITH WEST HAWAII CAMPUS

Although the THK study demonstrated the demand for a mixed residential project even without the linkage to the University of Hawai'i's West Hawai'i campus, a cooperative development with the University of Hawai'i provides numerous benefits to Palamanui, the University of Hawai'i and the Kona community.

The economic enhancements for the Palamanui project are covered in section 2.2 above. The University will benefit in several respects. In the short-term, the linkage with Palamanui will assist the University in relocating to its permanent site sooner than would otherwise be possible. The linkage will also allow the University a number of options which would otherwise not be possible. The roadway system, private sewage treatment plant and waterline transmission system improvements that will be created as a part of the Palamanui project will all be designed to allow the University improvements to share in those facilities as needed. This will significantly reduce the amount of basic infrastructure needed to establish and extend the West Hawai'i campus. The availability of the retail and commercial areas in the University Village will enhance the utility of the programs using the West Hawai'i campus for faculty, students and community members.

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The mixed land uses will provide a more diverse and sizable population and commercial base. It will facilitate alternatives to driving such as walking or biking within Palamanui and the University Village and will assist in establishing a sense of community for those living and working in the area. It will also provide more opportunities to support viable public transit to the University Village.

An early concept for UH Center West Hawai'i was that it would be a commuter community college. The current concept is that it will be a magnet campus that will evolve into a four plus year institution with international connections. The new concept will encourage lifelong learning which draws people from outside the normal student populations. With this broader vision, the proximity to a village community beyond the simple undergraduate community becomes both desirable and mutually supportive. It is part of this vision for Palamanui that retired faculty and people with international contacts will live in the community and interact with the college both as instructors, benefactors and participants in its programs. In this vision, proximity to an external community becomes an essential component of the plan.

Other needs identified in the *University of Hawai'i Center: West Hawai'i Development Plan, 1998-2007* (University of Hawai'i, Hawai'i Community College, 1997) are described in the following paragraphs.

Need Based on Demographic Factors. The total population of the West Hawai'i region – this includes the districts of North Kohala, South Kohala, North Kona, South Kona, and the Western portion of Kau – is expected to grow to almost 100,000 persons by the year 2010. This is sufficient population to justify the construction of a higher education center serving 1,200 to 1,600 students by year 2010.

The West Hawai'i population includes more persons in the 25-39 age group than either Honolulu or Kaua'i. Course offerings, programs and delivery strategies must be developed to meet the needs of working adults in this age group.

The West Hawai'i population, in general, has a higher rate of high school graduation and a larger percentage of persons who have some college as compared to the populations in either Honolulu or Kaua'i. Many individuals who have completed either an associate or baccalaureate degree are professionals working in the region who desire further education to maintain or upgrade existing job skills.

Two factors may be contributing to the low, 2% rate of enrollment in postsecondary education by persons in West Hawai'i who are 18 years of age or older as compared to other reporting areas having a sizeable University of Hawai'i presence: the location and size of education facilities at Kealahou, and the limited range of courses and programs offered at this time.

Despite the relatively close proximity between Konawaena High School and postsecondary facilities in Kealahou, there is a low, 22% participation rate of students continuing from that high school to the University of Hawai'i (including its community colleges) as compared to other neighbor island high schools located near a UH campus.

Need Based on Employment Trends. Employment trends in the West Hawai'i region are of great importance in the planning of the UHCWH because of two factors: most students cite preparation for employment as their primary reason for pursuing postsecondary education; and access to appropriately focused education and training programs can be a tremendous boost to the economic development of a community.

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Service and sales positions account for 40% of the currently available jobs in West Hawai'i. In the West Hawai'i region, there is also a prevalence of executive/managerial and professional occupations that require extensive postsecondary education for entry to these fields. In the future, more scientific enterprises related to astronomy and ocean engineering may increase the need for professional and graduate education in West Hawai'i.

Need for a More Central Location within West Hawai'i. The existing location of the UHCWH is considerably south of the population center of the region. This fact, coupled with the lack of adequate facilities and necessary infrastructure will continue to interfere with the delivery of quality programs at the UHCWH. Under these conditions, the growth of student enrollment at the UHCWH would be hampered.

Need to Meet Community Expectations. The community of West Hawai'i has advocated strongly for increased postsecondary educational opportunities over the past twenty years. The UHCWH uses the results of community needs assessments to determine program and course offerings.

The proposed UHCWH will accomplish the following objectives:

- Allow the relocation of functions and programs from existing leased facilities in the commercial mall complex in Kealahou to State-owned facilities specifically built to accommodate existing and future University Center/Village functions;
- Reorganize facilities and functions into a cohesive campus that elevates the image of the University Center/Village within the West Hawai'i region and fosters a nurturing learning environment;
- Extend higher education services to residents who live and work in the West Hawai'i region – the only major population center in the Hawaiian Islands that does not have a permanent facility for higher education – and especially to those in West Hawai'i who cannot afford to pursue their educational needs at other University of Hawai'i campuses in Hilo or on other islands;
- Provide for the expansion of functions and programs to accommodate a future head count enrollment of 1,500 students; and growing to 5,000 students;
- Reflect the cultural legacy and volcanic origin of the West Hawai'i region through the integration of existing cultural resources in the layout of the University Center/Village and the use of lava materials, native plants and other architectural elements to create a Hawaiian sense of place.



Section 3.0
Project Description

PALAMANUI – A HILUHILU DEVELOPMENT PROJECT

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3.0 PROJECT DESCRIPTION

The Hiluhilu Development LLC, proposes to develop a project called Palamanui, which involves developing the 725.2 acre vacant parcel in North Kona with residential units, mixed uses, an 18-hole golf course, and a university village center. The property is located six miles north of Kailua-Kona, just east and inland of Kona International Airport at Keāhole., and fronts Queen Ka'ahumanu Highway, extending upward to Mākālei Estates subdivision on Tax Map Key 3-7-2-05:01.

3.1 PALAMANUI – THE MO'OLELO OF THE PROJECT NAME

This is the story of the name Palamanui

Palamanui is the project name for this proposed development by Hiluhilu Development LLC.

Palamanui. This is the historical name of the area. Used for residential, cultivation, healing and learning. Meanings – The great or huge enclosure, torch, enlightenment. Lama, a native wood used for religious purposes.

The name Palamanui is the result of extensive research in the history of the area, consultation with kūpuna of the area, and prayers. "One's *inoa* or name was both owned property and a kind of force in its own right. Once spoken, an *inoa* took on an existence, invisible, intangible, but real." (Mary Kawena Pūku'i, Nana I Ke Kumu.) The name "Palamanui" was recommended by Karin Haleamau. According to Mr. Haleamau, this was the name of the area that was passed down from his father. His family resided on the property. Haleamau's father worked for Hu'ehu'e Ranch which owned the entire ahupua'a at one time. He shared that Palamanui was the previous name of the area and for some reason the name hasn't been used.

Remarkably, given the vision for the development, Haleamau also shared that the land was known for residential, cultivation and healing purposes. He remembered the different varieties of medicinal plants and trees that were cultivated throughout the ahupua'a. The kahuna lapa'au (medical expert) of the area treated his sick patients by preparing and using the appropriate plants and herbs. One of the cultural practices of the kahuna involved the gathering of plants and herbs. The necessary plants and herbs for healing were gathered before dawn. This practice continues today. It is likely that this ahupua'a served as a training area for future medicinal practitioners. This activity relates to the proposed plans for this project.

The various meanings of Palamanui include: huge lama (tree or wood) enclosure; an enclosure of abundant education; an enclosure of great enlightenment. The wood of the lama (a native tree) was considered sacred and used for religious purposes. In the past, special houses were built entirely of lama (wood) and the sick were brought there for healing. Other meanings of "lama" are: enlightenment, torch (symbolic for education). The academic logo of the University of Hawai'i at Mānoa includes a torch with the word, "mālamalama," meaning "enlightenment." Just as this area was used for healing purposes in the past, its other definition of enlightenment/education validates the appropriateness of the name because of its relevance to the proposed university. This project involves collaboration with the University of Hawai'i in the planning and construction phases of its development.

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3.2 PALAMANUI MASTER PLAN – A HILUHILU DEVELOPMENT PROJECT

A Master Planned community, to be known as Palamanui, is envisioned as a first class residential community with recreational amenities of a golf course and commercial venues which integrate into the development of the adjacent University of Hawai'i Center at West Hawai'i (Figure 3-1).

The various land use elements of the Master Plan include single and multiple family residential units, an 18-hole golf course with clubhouse and driving range, commercial and university residential facilities, health facilities, research and development facilities, archaeological preserves, cave and lava tube preserves, a dry forest preserve, passive and active parks, open space and parking areas. Infrastructure facilities to support the development include access and internal circulation roadway networks, a wastewater treatment and disposal system, a potable water supply and fire protection system, a non-potable water irrigation system and other utility systems. Table 3-1 highlights the proposed land uses for Palamanui. Details of the development program for Palamanui are provided in the Market Analysis report in Appendix I of this report.

Hiluhilu will handle the installation of arterial roadways, major electrical improvements (including transmission lines and necessary switching and transformer substations), sewage treatment plant and golf course improvements (including the irrigation wells), the protective enclosures/exclosures and other improvements for preservation of the dry forest preserve, significant trees, and caves with significant fauna and features. Hiluhilu will provide connector roads and other infrastructure to service the residential, retail and commercial lots that it will create.

Hiluhilu will construct the initial phases of the University Village, including buildings for college uses, associated commercial and multi-family residential uses and associated activities. The intent is to set an overall theme which will guide incremental additions over time. Hiluhilu will work with specialty developers for the design and construction of future projects including a modest hotel, medical and research facilities.

However, all of the land will be subject to various covenants and restrictions which will require all owners within Palamanui to comply with design standards and uses as defined in those covenants. The covenants will also include membership in owners' associations, obligate owners to contribute to common area costs, including those for preservation of the botanical, faunal and archaeological resources within Palamanui, obligate owners to comply with all hazardous material laws to comply with all best management practices established by Hiluhilu or the government regarding management of contamination and surface water runoff within Palamanui, and to comply with any applicable conditions imposed by the Land use Commission or by County zoning on the land.

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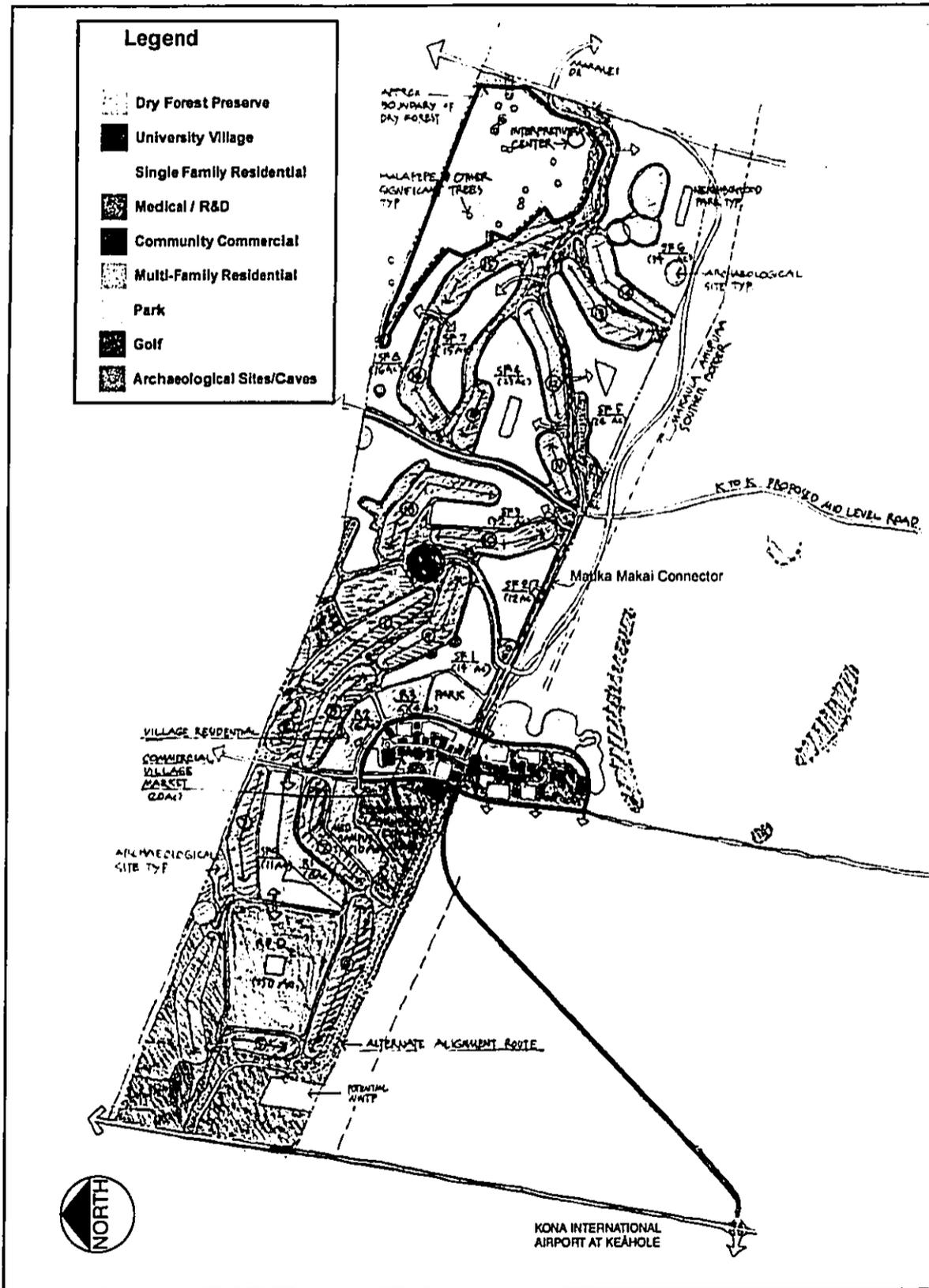


Figure 3-1
Palamanui Master Plan

PALAMANUI - A HILUHILU DEVELOPMENT PROJECT

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Development Program for Palamanui

	Total Units	±Acres	Average Price @
<u>Single Family Residential (lots)</u>			
Ocean View Estates	70	70.0	\$400,000
Ocean View Lots	200	100.0	\$300,000
Golf View Lots	120	406.2	\$200,000
<u>Single Family Residential (built)</u>			
Patio Homes	80	16.0	\$350,000
Two Bedroom Condos	60	7.5	\$275,000
Three Bedroom Condos	60	7.5	\$350,000
Subtotal Single Family	590	247.2	
<u>Multi Unit Residential</u>			
Apartments	100	8.0	
International Student Housing	75	5.0	
Senior Housing	80	5.0	
Subtotal Multi Family	255	18.0	
Total Residential	845	265.2	
	Rooms	±Acres	Sq. Ft.
<u>Commercial (acres)</u>			
University Leases		6.0	60,000
Village Commercial		8.0	80,000
University Village Inn	120	8.0	60,000
<u>Medical, R&D & Commercial</u>			
Medical Campus		10.0	120,000
R&D		50.0	220,000
Community Commercial		20.0	200,000
<u>Golf Course</u>			
		180.0	
<u>Open Space, Parking & Preservation</u>			
		177.8	
Subtotal Commercial & Other	120	459.8	
TOTAL UNITS AND ACREAGE	965	725.0	

Table 3-1

Land Uses for Palamanui

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3.2.1 Residential Component

The residential component will include a mixture of housing types including single family, townhouses, condominiums and apartments. A total of 845 housing units are planned: 590 for sale single family and attached residential units and 255 multi-family rental units. The single family units are envisioned to include a mixture of condominiums, patio or townhouse units as well as single family detached lots. The multi-family residential units are envisioned to include 100 general apartments, 75 units for student housing and 80 units for senior housing.

Residential Program

- 100 Apartment units
- 75 Student Housing units
- 80 Senior Housing units
- 590 Single Family units (condo, patio, townhomes, single family detached)
- 845 Total Housing Units

The proposed residential program is based on a market study of real estate demand. The housing market targets residents, second home purchasers and renters. Renters may include students, workers and short-term faculty. Proposed unit prices for the Palamanui development covers a wide range. Estimates for single family units range from \$275,000 to \$1,000,000. Target multi-family rental units are aimed at \$150,000 to \$200,000. These prices reflect the market analysis of ability to pay. Table 3-2 highlights expected prices by proposed real property product type. Details are listed in the Market Analysis of Appendix I.

	Recommended Average Prices	Average Unit Size	Recommended Price
Residential Real Estate - Lots	<u>Sale Price</u>	<u>(Sq. Ft.)</u>	<u>Per Square Foot</u>
Ocean View Estate Lots	\$400,000	40,000	\$10
Ocean View Lots	\$300,000	15,000	\$20
Golf View Lots	\$200,000	12,000	\$17
Residential Real Estate - Built Product			
Patio Homes	\$350,000	1,800	\$194
Two Bedroom Condominiums	\$275,000	1,300	\$212
Three Bedroom Condominiums	\$350,000	1,600	\$219
Village Real Estate - Leased	<u>Annual Lease Rate/SF</u>	<u>Space (SF)</u>	
UH Classroom and Lab Space	\$12	60,000	
Village Retail	\$24	80,000	
Village Real Estate - Residential Rentals	<u>Land Value (\$/ unit)</u>	<u>Units</u>	
Apartments	\$35,000	100 units	
International Student Housing	\$25,000	75 units	
University Village Inn	\$40,000	120 rooms	
Senior Housing	\$30,000	80 units	
Other Commercial	<u>Land Value (\$/acre)</u>	<u>Acres</u>	
Medical Campus	\$400,000	10	
R&D	\$250,000	50	
Community Commercial	\$700,000	20	
Golf Memberships	<u>Per Member</u>		
Entrance Fee	\$30,000		

Source: Knowledge Based Consulting Group

Table 3-2

Residential Program

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Based upon the historical performance of the Hawai'i County housing market, and upon the projected growth in new household formations, the demand for new residential construction can be segmented by tenure and type of unit. This will allow the market potentials for specific types of residential construction to be examined. The key components of residential construction demand during the next decade include new housing units to meet demands of new population growth and household formations, construction to meet the demands of the existing households in the area who desire to upgrade or downgrade into new ownership units, and construction to replace units lost through demolition and conversion.

The THK market study (2003) projects new household formations will average 1,370 per year during the projection period 2002-2012 which will produce a demand for the construction of 1,451 dwelling units annually when adjusted for vacancies and demolitions. Single-family detached construction of 1,180 units annually during the next decade will account for approximately 81.4% of total construction in the Hawai'i County area. Townhouse and condominium construction will average 90 units annually, or 6.1% of the total market followed by rental apartment construction with 180 units annually, or 12.3% of total construction.

The housing units are sited throughout the project site. Unit types which service university markets are targeted to be located near the proposed University Village. The proposed residential component is expected to house approximately 2,816 persons after build-out. The formula used by the Department of Education projects that a single family unit generates on average .576 students between kindergarten to grade 12. The same formula projects .218 students per unit for multi-family units. Based on this formula, Palamanui is expected to generate a total of 379 students at full buildout; (single family 590 x .576 = 340) + (multi-family: 175 x .218 = 39). Palamanui is designed to provide a comfortable living environment. Residential products will be designed to enjoy the unique Kona experience. Units will be scaled and designed to reflect the Kona environment. Palamanui residential products are projected to be filled by permanent residents and seasonal residents. The market study (THK, 2003) estimates the demand for seasonal /second home to be 64 seasonal units in the year 2002, and increase to 83 seasonal units by 2012. Table 3-3 illustrates the market study projects for seasonal residents by product and price range.

Unit Price Range	Lot Price Range	Permanent Households	Percent	2nd Home/ Seasonal Residents	Percent	Additional Lots	Percent	Total	Percent
Detached Single Family									
Under \$250,000	\$100,000	235	38.6%	0	0.0%	0	0.0%	235	33.8%
\$250,000 - \$349,999	\$100,000 - \$124,999	212	32.1%	3	5.0%	2	3.0%	216	28.7%
\$350,000 - \$449,999	\$125,000 - \$159,999	78	11.8%	4	7.3%	3	7.3%	85	11.3%
\$450,000 - \$549,999	\$160,000 - \$189,999	50	7.3%	6	10.0%	4	10.0%	59	7.8%
\$550,000 - \$649,999	\$190,000 - \$224,999	26	4.0%	18	30.0%	11	30.0%	55	7.3%
\$650,000 +	\$225,000 +	40	6.0%	28	47.3%	17	47.3%	84	11.2%
Total		660	100.0%	59	100.0%	36	100.0%	755	100.0%
Condominiums and Townhomes									
Under \$250,000		44	63.2%	4	23.0%			47	56.5%
\$250,000 - \$350,000		12	16.8%	4	30.0%			16	19.1%
\$350,000 +		14	20.0%	7	43.0%			20	24.4%
Total		69	100.0%	15	100.0%			84	100.0%
Rental Multi-Family									
Under \$600		26	24.3%					26	24.3%
\$600 - \$750		18	16.8%					18	16.8%
\$750 +		61	58.7%					61	58.7%
Total		104	100.0%					104	100.0%
Mobile/Manufactured Homes									
Under \$200		2	12.5%					2	12.5%
\$200 - \$239		3	30.0%					3	30.0%
\$240 - \$279		5	35.0%					5	35.0%
\$280 +		3	22.5%					3	22.5%
Total		15	100.0%					15	100.0%

Table 3-3

Annual Average Lot/ Unit Demand by Price Range in the Palamanui Development Primary Trade Area

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Table 3-4 illustrates estimated market values for Palamanui. Residential market values for the project will be \$19.5 million in the first year of occupancy (2005), including both seasonal and permanent residents. As the residential product is built-out, the residential market value will increase to \$715.6 million in 2012. By 2014, residential values are projected to equal \$775 million. See *Appendix I* of Fiscal Impact Study for more details.

Affordable housing requirements will be met with agreements established with the County and State housing agencies. The developer proposes to provide 100 affordable housing units. The County of Hawai'i Affordable Housing Policy (1998, Ord. No. 98-1, Sec. 2) Article 1, Section 11-4 requires 10 percent of total units be affordable. While the actual number of units is 845 and the actual requirement is 85 units, Hiluhilu Development has decided to round the numbers and use 1,000 as the base number of units. Therefore, based on 1,000 units, ten percent represents 100 units. Fifty (50) affordable units will be available for purchase. Fifty (50) affordable units will be available for rent. The anticipated distribution of affordable housing units for sale and for rent, will be one-third in the 80 to 100 percent applicable median income, one-third in the 100 to 120 percent applicable median income and one-third in the 120 to 140 percent of applicable median income.

Affordability will be based on Federal, State and County standards and guidelines. See *Appendix N* for affordable housing policy guidelines. Affordable housing is being calculated based on the assumption of a family of four. Median income for a family of four in the County of Hawai'i in the year 2004 is approximately \$51,000. The County of Hawai'i uses the affordable housing definition as a lot or dwelling unit which is affordable to qualified households earning no more than one hundred forty percent (140%) of the median income for a family of four in the County of Hawai'i.

According to the County of Hawai'i Affordable Sales Guidelines, a family of 4 earning 80% of the median income in the County of Hawai'i can afford a \$186,200 housing unit. This is based on a 30 year mortgage loan at 5.760% Hula Mae interest rate with a total housing expense of 28% and 5% down payment. The family of 4 earning the median income of \$51,000 in the County of Hawai'i can afford a housing unit of \$214,000. Similarly, the family of 4 earning 120% of the median income can afford a housing unit costing \$239,860. And the family of 4 earning 140% of the median income can afford to purchase a housing unit at the cost of \$239,860. Hula Mae new construction sales price limit as of 2002 for the County of Hawai'i is \$239,860. See *Appendix N* for County affordable sales tables.

The County of Hawai'i has established affordable rent guidelines which are based on 30% of income including utilities. Appendix N includes the County affordable rent guideline tables which are based on 2003 HUD income established by HUD for the County of Hawai'i. The 2003 Hawai'i County median income is \$50,400. A family earning 80% of the median income for the County of Hawai'i can afford a 2 bedroom housing unit at a cost of \$991 a month. A family earning 100% of the median income for the County of Hawai'i can afford a 2 bedroom housing unit at a cost of \$1134 a month. A family earning 120% of the median income for the County of Hawai'i can afford a 2 bedroom housing unit at a cost of \$1360 a month. A family earning 140% of the median income for the County of Hawai'i can afford a 2 bedroom housing unit at a cost of \$1587 a month. Monthly rent levels would include the cost of the following utilities: water, sanitary sewage service, electricity and gas where applicable.

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Estimated Market Values for Palamanui

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Single Family Detached												
Ocean View Estates	\$ 400	\$ 416	\$ 433	\$ 450	\$ 468	\$ 487	\$ 506	\$ 526	\$ 547	\$ 569	\$ 592	\$ 616
Average Lot Value	\$ 1,000	\$ 1,040	\$ 1,082	\$ 1,125	\$ 1,170	\$ 1,217	\$ 1,265	\$ 1,316	\$ 1,369	\$ 1,423	\$ 1,480	\$ 1,539
Average Improvement Value	\$ -	\$ -	\$ 12,979	\$ 22,497	\$ 67,852	\$ 94,899	\$ 124,001	\$ 128,961	\$ 134,120	\$ 139,485	\$ 145,064	\$ 150,866
Cumulative												
Ocean View Lots	\$ 300	\$ 312	\$ 324	\$ 337	\$ 351	\$ 365	\$ 380	\$ 395	\$ 411	\$ 427	\$ 444	\$ 462
Average Lot Value	\$ 750	\$ 780	\$ 811	\$ 844	\$ 877	\$ 912	\$ 949	\$ 987	\$ 1,026	\$ 1,067	\$ 1,110	\$ 1,155
Average Improvement Value	\$ -	\$ -	\$ 6,490	\$ 16,873	\$ 47,379	\$ 89,424	\$ 141,399	\$ 197,290	\$ 246,342	\$ 298,895	\$ 310,651	\$ 323,285
Cumulative												
Golf View Lots	\$ 200	\$ 208	\$ 216	\$ 225	\$ 234	\$ 243	\$ 253	\$ 263	\$ 274	\$ 285	\$ 296	\$ 308
Average Lot Value	\$ 500	\$ 520	\$ 541	\$ 562	\$ 585	\$ 608	\$ 633	\$ 658	\$ 684	\$ 712	\$ 740	\$ 770
Average Improvement Value	\$ -	\$ -	\$ 4,499	\$ 9,359	\$ 26,766	\$ 28,766	\$ 48,082	\$ 71,060	\$ 94,431	\$ 119,538	\$ 124,341	\$ 129,314
Cumulative												
Patio Homes	\$ 350	\$ 364	\$ 379	\$ 394	\$ 409	\$ 426	\$ 443	\$ 461	\$ 479	\$ 498	\$ 518	\$ 539
Average Lot Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ -	\$ -	\$ -	\$ 7,874	\$ 16,378	\$ 25,550	\$ 35,429	\$ 36,846	\$ 38,320	\$ 39,853	\$ 41,447	\$ 43,105
Multifamily												
Two Bedroom Condos	\$ 275	\$ 286	\$ 297	\$ 309	\$ 322	\$ 335	\$ 348	\$ 362	\$ 376	\$ 391	\$ 407	\$ 423
Average Lot Value	\$ -	\$ -	\$ -	\$ -	\$ 3,217	\$ 10,037	\$ 13,919	\$ 21,713	\$ 22,581	\$ 23,485	\$ 24,424	\$ 25,401
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ 409	\$ 426	\$ 443	\$ 461	\$ 479	\$ 498	\$ 518	\$ 539
Total	\$ 350	\$ 364	\$ 379	\$ 394	\$ 409	\$ 426	\$ 443	\$ 461	\$ 479	\$ 498	\$ 518	\$ 539
Three Bedroom Condos												
Average Lot Value	\$ -	\$ -	\$ -	\$ -	\$ 4,095	\$ 12,775	\$ 17,714	\$ 27,635	\$ 28,740	\$ 29,890	\$ 31,085	\$ 32,329
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 200	\$ 208	\$ 216	\$ 225	\$ 234	\$ 243	\$ 253	\$ 263	\$ 274	\$ 285	\$ 296	\$ 308
Apartments												
Average Lot Value	\$ -	\$ -	\$ -	\$ -	\$ 23,397	\$ 24,333	\$ 25,306	\$ 26,319	\$ 27,371	\$ 28,466	\$ 29,605	\$ 30,789
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ 189	\$ 182	\$ 190	\$ 197	\$ 205	\$ 213	\$ 222	\$ 231
Total	\$ 190	\$ 196	\$ 162	\$ 189	\$ 175	\$ 182	\$ 190	\$ 197	\$ 205	\$ 213	\$ 222	\$ 231
International Student Housing												
Average Lot Value	\$ -	\$ -	\$ -	\$ -	\$ 13,161	\$ 13,887	\$ 14,235	\$ 14,804	\$ 15,396	\$ 16,012	\$ 16,653	\$ 17,319
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ 205	\$ 213	\$ 221	\$ 230	\$ 239	\$ 249	\$ 259	\$ 269
Total	\$ 175	\$ 182	\$ 189	\$ 197	\$ 205	\$ 213	\$ 221	\$ 230	\$ 239	\$ 249	\$ 259	\$ 269
Senior Housing												
Average Lot Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,033	\$ 17,714	\$ 18,423	\$ 19,160	\$ 19,926	\$ 20,723	\$ 21,552
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,033	\$ 17,714	\$ 18,423	\$ 19,160	\$ 19,926	\$ 20,723	\$ 21,552
Total Residential Values	\$ -	\$ -	\$ 19,489	\$ 51,744	\$ 184,838	\$ 314,505	\$ 437,800	\$ 543,351	\$ 628,482	\$ 716,570	\$ 744,193	\$ 773,981
Seasonal	\$ -	\$ -	\$ 1,947	\$ 5,174	\$ 18,484	\$ 31,450	\$ 43,780	\$ 54,315	\$ 62,646	\$ 71,557	\$ 74,419	\$ 77,396
Permanent	\$ -	\$ -	\$ 17,522	\$ 46,569	\$ 166,354	\$ 283,054	\$ 394,020	\$ 488,836	\$ 565,816	\$ 644,913	\$ 669,774	\$ 696,584
Commercial (Acres)												
University Village Inn (per room (\$000))	\$ 125	\$ 130	\$ 135	\$ 141	\$ 146	\$ 152	\$ 158	\$ 164	\$ 171	\$ 178	\$ 185	\$ 192
Average Lot Value	\$ -	\$ -	\$ -	\$ -	\$ 17,548	\$ 18,250	\$ 18,980	\$ 19,739	\$ 20,529	\$ 21,350	\$ 22,204	\$ 23,092
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 125	\$ 130	\$ 135	\$ 141	\$ 146	\$ 152	\$ 158	\$ 164	\$ 171	\$ 178	\$ 185	\$ 192
University Leases (value per SF)												
Average Lot Value	\$ -	\$ -	\$ -	\$ -	\$ 4,218	\$ 4,387	\$ 4,562	\$ 4,745	\$ 4,936	\$ 5,134	\$ 5,339	\$ 5,551
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 125	\$ 130	\$ 135	\$ 141	\$ 146	\$ 152	\$ 158	\$ 164	\$ 171	\$ 178	\$ 185	\$ 192
Village Commercial (value per SF)												
Average Lot Value	\$ -	\$ -	\$ -	\$ 2,812	\$ 2,925	\$ 3,043	\$ 3,166	\$ 3,294	\$ 3,427	\$ 3,565	\$ 3,708	\$ 3,856
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 200	\$ 208	\$ 216	\$ 225	\$ 234	\$ 243	\$ 253	\$ 263	\$ 274	\$ 285	\$ 296	\$ 308
Medical Campus (value per SF)												
Average Lot Value	\$ -	\$ -	\$ -	\$ 6,749	\$ 14,038	\$ 21,900	\$ 30,368	\$ 31,582	\$ 32,846	\$ 34,159	\$ 35,526	\$ 36,947
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 100	\$ 104	\$ 108	\$ 112	\$ 117	\$ 122	\$ 127	\$ 132	\$ 137	\$ 142	\$ 148	\$ 154
R&D (value per SF)												
Average Lot Value	\$ -	\$ -	\$ -	\$ -	\$ 1,170	\$ 2,433	\$ 4,429	\$ 7,238	\$ 11,633	\$ 17,791	\$ 25,164	\$ 33,868
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 125	\$ 130	\$ 135	\$ 141	\$ 146	\$ 152	\$ 158	\$ 164	\$ 171	\$ 178	\$ 185	\$ 192
Community Commercial (value per SF)												
Average Lot Value	\$ -	\$ -	\$ -	\$ -	\$ 1,954	\$ 3,954	\$ 8,225	\$ 12,830	\$ 19,571	\$ 27,755	\$ 38,486	\$ 52,631
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 16,000	\$ 16,640	\$ 17,306	\$ 17,998	\$ 18,718	\$ 19,466	\$ 20,245	\$ 21,055	\$ 21,897	\$ 22,773	\$ 23,684	\$ 24,631
Golf Course (\$000)												
Average Lot Value	\$ -	\$ -	\$ 8,653	\$ 17,998	\$ 31,777	\$ 58,785	\$ 99,047	\$ 150,867	\$ 218,897	\$ 300,552	\$ 400,235	\$ 518,963
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ -	\$ -	\$ 8,653	\$ 17,998	\$ 31,777	\$ 58,785	\$ 99,047	\$ 150,867	\$ 218,897	\$ 300,552	\$ 400,235	\$ 518,963
Total Commercial Values	\$ -	\$ -	\$ 28,122	\$ 83,521	\$ 243,823	\$ 387,200	\$ 528,847	\$ 654,018	\$ 750,147	\$ 856,122	\$ 904,429	\$ 957,923
Total Project Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Table 3-4 Palamanui Estimated Market Values

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3.2.2 Commercial Component – University Village

The commercial components of Palamanui will consist of retail, office and professional uses which will provide support for the residential component of Palamanui and the adjacent University of Hawai'i West Hawai'i campus. The core of the commercial activities will be located in the University Village. The University Village will be designed to develop a community center to serve personal and business needs of residents and the University. Market research indicates that the association with the University activities is a significant positive factor for potential buyers. See *Figure 3-1* for location of the University Village.

The axis of the village is north to south across the property boundary to encourage and facilitate walking to reduce vertical elevational changes. At each end of the axis is a signature structure that anchors its end and is connected by a "main street". The design would not work as well if only one side of the village were to be developed. The village green is located at the boundary between the two parcels and serves to center the village equally between the two sides. The residential pattern around the mauka periphery of the village core area is continued on both sides of the property line. The same continuity of pattern is also envisioned for the makai edge with health and tech-related uses. Infrastructure and circulation patterns are designed with capacity and alignments that serve both sides of the boundary line. The proposed K to K mid-level "Main Street" collector road forms the makai edge of the village core on both sides of the property. Parking is around the perimeter of the village core and there is no break in the core at the property boundary. While approximately 30 acres of the village shown in *Figure 3-2* is within the petition area and a remaining 30 acres is within the State property the design is intended to merge the whole village as one community. The memorandum of understanding with the University seeks to achieve that unity.

The THK market study analyzed the future demand for retail, office, medical and research and development space based on projected job growth in the Kona area. Average annual job growth rates were estimated as follows: 203 jobs per year for retail, 284 jobs per year for office, 30 jobs per year for medical, 121 jobs per year for flexible Research and Development space (see *Table 3-5*).

The initial marketing analysis was refined when the Fiscal Impact Study was prepared. The analysis broke down the future demand by retail, office, village commercial, community commercial, medical office and R&D categories. Allowing for 350 square feet of retail space per employee, 300 square feet of office space per employee, 400 square feet of medical space per employee and 600 square feet of R&D space per employee, the job growth projections created future demand of 708,750 square feet for retail space, 652,050 square feet for office space and 486,000 square feet of R&D space.

The Fiscal Impact Study also revised the site capture information into the new categories and estimated that given the features of the Palamanui project, it could capture approximately 15 percent of the future retail space demand, 20 percent of the future office space demand, 100 percent of the medical demand and 30 percent of the R&D space demand.

Based on the ability of the project to capture this share of future demand the resulting demand for Palamanui is: 80,000 square feet of University Village commercial, 200,000 square feet for community commercial, 120,000 square feet for medical, 220,000 square feet for R&D flex space.

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Projected Trade Area Annual Employment Growth, 2002 - 2012		810				
Annual Retail Job Growth	25%	203				
Annual Office Job Growth	35%	284				
Annual Medical Campus Employment Growth		30				
Annual R & D Flex Space Job Growth	15%	122				
Use	Annual Job Growth	Required Square Footage Over 10 Years	Site Capture	Rounded	Acreage Required	Total Acreage Allowed
Demand for Retail Space at Palamanui	203	708,750	106,313	110,000	10	15
Demand for Office Space at Palamanui	284	850,500	170,100	170,000	11	13
Total Commercial	486	1,559,250	276,413	280,000	21	28
Village Commercial Allocation			80,000	80,000		8
Community Commercial			196,413	200,000		20
Demand for Medical Space at Palamanui	30.0	120,000	120,000	120,000	8	10
Demand for R & D/ Flex Space at Palamanui	121.5	729,000	218,700	220,000	33	50
Planning Parameters	Retail	Office	Medical	R & D		
Space Per Employee	350	300	400	600		
Site Capture	15%	20%	100%	30%		
F. A. R.	25%	35%	35%	15%		
Speculative Factor	50%	20%	30%	50%		

Source: THK Associates, Knowledge Based Consulting Group

Table 3-5

Office, Retail, and R & D Demand Analysis

60,000 square feet was included for office and classroom space to be built within Palamanui for the University of Hawai'i. The space would be needed for the University's mid term needs (5 to 10 year period). Once the University vacates the space, the space would be renovated and would be available for sale or lease for office and commercial users.

A 120-unit University Inn and Conference Center would provide accommodations in conjunction with the University operations. It would require 60,000 square feet on 8 acres of land. In addition to accommodations for visitors, the facility would include meeting and gathering spaces. The Inn will be located in the village so guests may walk to activities at the University Village or the University.

The corresponding area allocations are: 6 acres for the buildings to be leased to the University, 8 acres for University Village commercial, 8 acres for the University Village Inn, 20 acres for community commercial, 10 acres for medical, and 50 acres for flexible Research and Development space. The allocations included allowances for expansion if actual demand exceeded potential demand and also took into account the low-rise nature of the proposed development. Details of the market analysis are in *Appendix I* of this report.

Retail, commercial, office and industrial markets were examined and described in the Residential and University of Town Center Market Analysis Update report (December 2002) which is provided in *Appendix I*. The demand for retail, hotel, office, flexible research and development uses to serve the residential, educational and medical components of Palamanui were also analyzed in this study. Details of the assumptions used were described in *Chapter 2*.

A significant component of the Palamanui development is that its design will encourage residents and those patronizing the University Village facilities to reduce the amount of vehicular traffic impacting the regional highways. The University Village is designed for convenient pedestrian access for residents, visitors and students due to the horizontal axis of the development which minimizes vertical changes in elevation.

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Non-residential market value for the project will start at \$87 million in 2005. As the non-residential product is built-out by 2014, the non-residential market value will increase to \$184 million. Estimated market values are illustrated in *Table 3-4*.

3.2.3 University Linkage, University Village

Figure 3-2 shows a conceptual sketch of the University Village area. Hiluhilu's preferred development mode is to have the University Village as an integrated development spanning Palamanui and the UH West Hawai'i Campus land.

The Village, as conceived, will have a horizontal, linear core spanning both properties which would be the focus for "village" activities. The core would have a "town square" approximately at the boundary line of both properties with development extending laterally across the slope of the land. This allows pedestrians to easily walk from one end of the core to the other. Along this core would be University spaces such as classrooms, faculty offices, library spaces, teaching labs, etc. side-by-side with commercial and cultural facilities such as shops, restaurants, book store, coffee shop, professional and business offices, medical facilities, conference center/inn, performing arts and cultural facilities.

The University of Hawai'i's vision for West Hawai'i is to develop a unique educational environment that will integrate the community into the educational enterprise, that will serve the needs of students from high school through retired adult learners, and that will not only support an emphasis on Hawaiian studies, but also provide the structure for global interaction. The mission of the campus will incorporate the philosophies of multidisciplinary educational programs, a multicultural environment, a learning-centered focus, and using the entire Island as a living laboratory. It will be a technologically advanced campus, and well positioned to support the future needs of the community.

Directly off the core would be the campus residential facilities, private sector apartments, possibly assisted living facilities, as well as medical facilities and research related incubator space. Residence halls will be developed to attract international students, and students from the U.S. mainland. Specialized residential programs will be offered during the summers, making the campus fully functioning year-round. A golf course would extend mauka-makai on the private parcel with adjacent single-family houses flanking the course.

The architectural character of the core buildings and adjacent facilities (one, two and three-stories) would be similar to the charming up-country Big Island character of the towns of Waimea and Hōlualoa. The feel of the community would be non-institutional. The entire development is envisioned to have aesthetic controls which would ensure the compatibility of structures. Design of buildings would include review for preservation of view planes. Landscaping including native species from this locale, would be coordinated and well maintained. The implementation of these elements will further link the University Village with the other developments for this project. *Figure 3-3* illustrates the relationship of proposed project to important landmarks and viewing resources.

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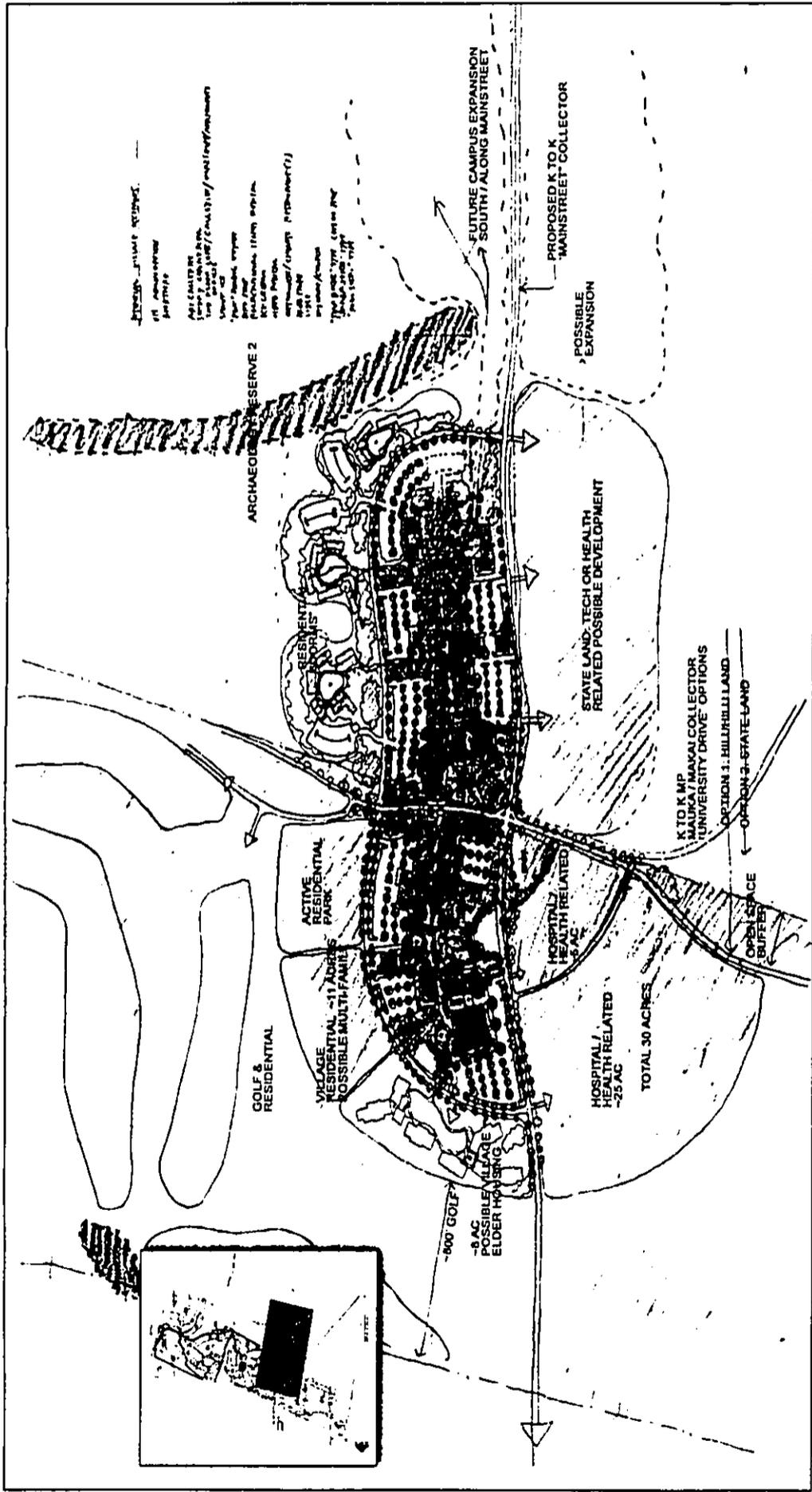


Figure 3-2
Master Plan Detail: University Village

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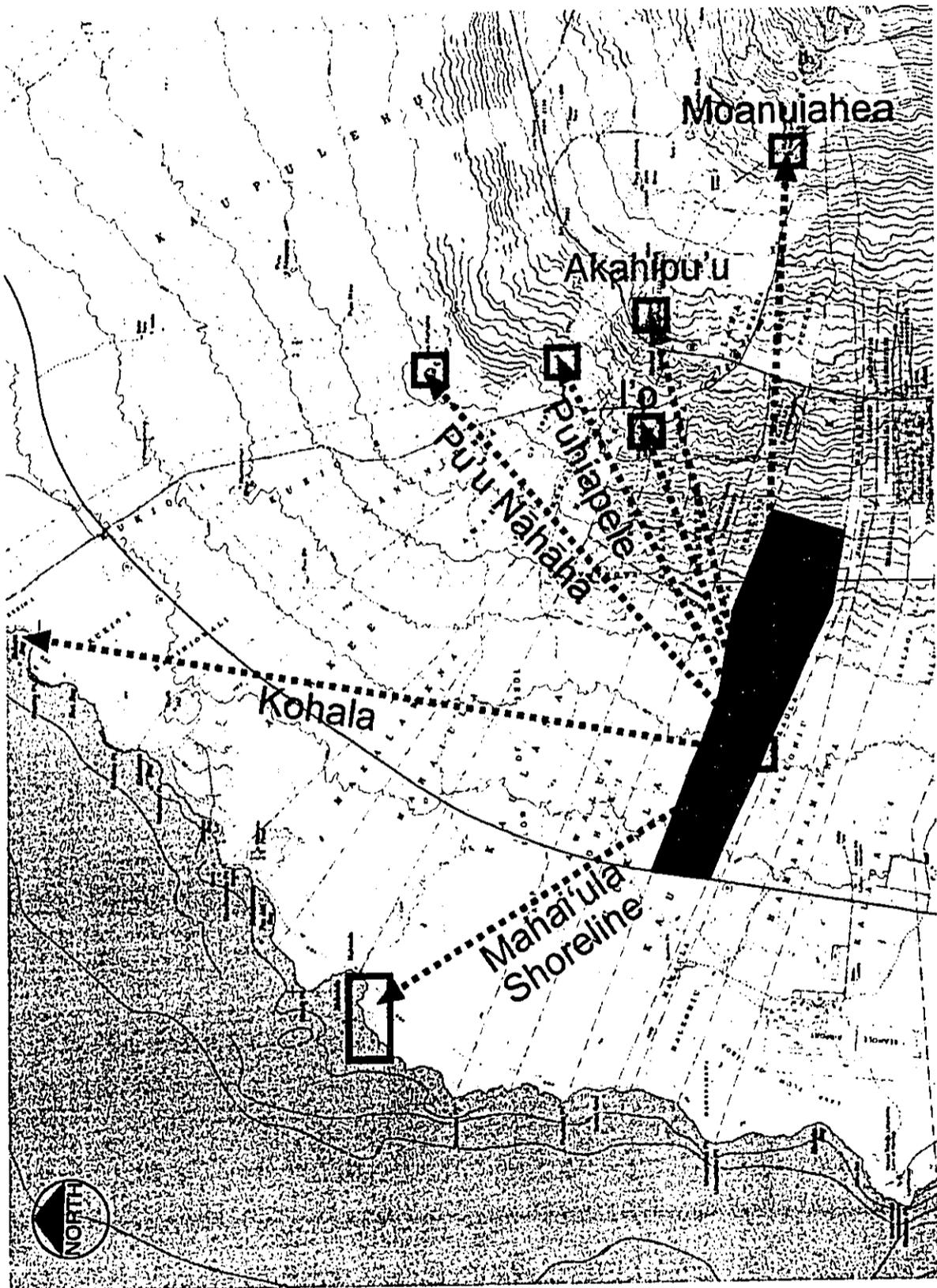


Figure 3-3
Culturally Significant View Planes Seen From University Village

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The University Village will serve as the tie in for Palamanui with the University of Hawai'i plans for the West Hawai'i Campus. Retail, office and research and development/flex space will be designed to serve both the Palamanui residential community and support the University related activities.

Hiluhilu wishes to facilitate the relocation of the University of Hawai'i operations in West Hawai'i to its permanent location. Hiluhilu has accordingly been engaged in joint planning discussions with the University to make that possible. Subject to obtaining the necessary land use approvals and clearance for design and construction of related infrastructure, Hiluhilu has included in its planning the construction of office and classroom buildings within the Palamanui portion of the University Village. The buildings will be leased to the University on terms to be negotiated. In order to allow the University to make the initial relocation, Hiluhilu is planning on building 60,000 square feet of buildings on 6 acres. Approximately 20,000 square feet are for the initial UH Community College. Hiluhilu will lease some of that space to the University until the University constructs replacement buildings on the State owned portion of the University Village. The Palamanui buildings will be designed so that they can be used for another purpose once the University no longer has a need for them.

Hiluhilu also expects that the University will be expanding its program offerings in West Hawai'i once funding is available. The current enrollment of 500 students is expected to increase to reach 750 students by 2006. Enough spaces will be developed to accommodate all UH programs currently underway in Kailua-Kona and other locales. The long-range enrollment target for 2010 is 2,000 students. Ultimately the UH West Hawai'i Center is expected to grow to 5,000 students. While the UH has not specified all the facilities it would like to build in the first phase, all programs it identifies will be accommodated. Facilities will be integrated into the University Village with flexible spaces that complement the rest of the planned village.

While Hiluhilu is willing to discuss additional University facilities on the Palamanui portion of the University Village, it is expected that the University will locate many of its buildings and facilities on State land for operational and security reasons. The University may locate a number of such buildings away from the Village itself as it grows over the years. Hiluhilu Development will bring the roadway, sewer water and drainline to the common property line with UH West Hawai'i.

Hiluhilu expects to accommodate many of the supporting uses which will benefit both residents and University related persons (students, staff and faculty) on the Palamanui side of the University Village, but will work with the University on developing classroom and office buildings on either side of the property. Hiluhilu plans to develop other facilities, such as accommodation and conference facilities to serve both Palamanui and University uses.

Hiluhilu is continuing its discussions with the University to reach common understanding on the requirements for the relocation of the University's West Hawai'i operations, to be provided at Hiluhilu's cost, and provisions for future expansion using shared infrastructure. A Memorandum of Understanding between Hiluhilu Development and the University of Hawai'i is included in *Appendix Q*.

Following the signing of the Memorandum of Understanding with the University of Hawai'i in November, 2002, Hiluhilu has continued planning and discussions with the University. Hiluhilu is now discussing an amended memorandum to address more specific aspects of the University Village plan. These include:

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- Developing the general site plan for the University Village.
- Discussing routing of roadways to provide access to Palamanui and the University land to Queen Ka'ahumanu Highway.
- Coordinating discussions with the Department of Water Supply on potable water commitments.
- Obtaining more specific information to allow planning for the Hiluhilu wastewater treatment facility.
- Working on architectural and use controls for the University Village.
- Providing initial classroom and office space within the initial development of the University Village.

The amendment is under review by University staff. Following that review and any revisions that are needed, the amendment will be submitted to the Board of Regents. As a part of this effort, Hiluhilu will also be discussing the lease terms under which the University would lease buildings on the Hiluhilu side of the University Village. Hiluhilu will work with the University to develop as much space as possible within the context of the University's present budget for facilities. The buildings would be provided to meet the mid-term needs of the University in West Hawai'i (5 to 10 year time frame). The leases will be designed to follow that time frame. The design of buildings will allow them to be converted to office and commercial uses without major structural changes when the University eventually vacates the buildings. By that point, Hiluhilu expects the balance of the residential components of Palamanui to be completed and the vacated space could be used to meet the demand for office and commercial space.

Given the nature of the University Village concept, Hiluhilu does not anticipate conflicts between the Palamanui and University users. The facilities and uses that are compatible for joint uses will be located within the Palamanui portion of the Village. Those uses which the University decides are not compatible with such joint use can be located on the adjacent State lands, either within or outside the University Village area. The total University-owned parcel of 500 acres allows for flexibility.

3.2.4 Recreational Amenities

Recreational amenities include an 18-hole golf course, passive and active park spaces, a dry forest preserve, bike paths, walking paths and cultural preserves.

Approximately 180 acres of the property will be devoted to the development of an 18-hole golf course and clubhouse. The course will be periodically open for general community use. The golf course will involve minimal landscaping. The lava and native botanical environments of the project site will be incorporated into the design of the golf course. Nevertheless, the golf course is intended to be of high quality. Best management practices will be used in the maintenance of the course as to minimize impacts upon the natural environment.

The golf course will be a semi-private course. Hiluhilu is contemplating a membership program for Palamanui residents. Public play on a fee basis will be scheduled into normal golf course operations on a space available basis. The fees for public play will be set at a price level competitive with the other non-resort golf courses on the Island of Hawai'i. Hiluhilu will be seeking input from the University of Hawai'i to see if the golf course operations could be used to assist in furthering instructional programs. Hiluhilu anticipates that the golf course will

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participate in organized youth golf programs for students attending schools on the Island of Hawai'i and those attending the University of Hawai'i.

The golf course will be built in Phase I. Brackish well water will be used to irrigate it in the early years. As treated effluent become available, it will supplement a brackish irrigation system.

Portions of the golf course may be located adjacent to the dry forest area. Care will be taken to prevent the possible introduction of alien species into the dry forest. A forest maintenance and management plan will address these concerns.

The golf course is obviously a major open space and recreational amenity of the project. It will be a combination of public and private course and serve both the project and the region.

An additional 94 acres will be used for open space and parking.

Five acres of active parks with play courts and fields will be created near the periphery of the University Village along with a recreational center. An additional minimum of five acres of passive parklands will be developed and distributed throughout the residential areas of the Palamanui project. Bike paths, jogging and walking paths will be created throughout the community to encourage a healthy lifestyle taking advantage of the wonderful Kona climate. Bike paths will also be designed on access roads leading to the proposed development. This will assure continuity of bicycle access to and from the development. The 5 acres of land for active park uses will be accessible for public use; that area can be dedicated to the County of Hawai'i if the County is agreeable to accepting dedication.

Approximately 65 acres are set aside for a dry forest preserve. This preserve, while created primarily for environmental protection purposes, will provide residents and the public with additional managed open space and low intensity outdoor wilderness recreational opportunities.

3.2.5 Integrated Natural Cultural Resource Management Plan

Significant archaeological sites including historic trails, lava tubes and cave ecosystems will be preserved throughout the project site. An approximately 65-acre dryland forest preserve has been set aside to protect culturally significant and endangered botanical resources such as the halapepe. (Figure 3-1) The project will be designed to preserve the culturally significant view planes to surrounding pu'u as listed in the cultural assessment report. (Figure 3-3) In addition, protective exclosures and new plantings from seedlings on site will be conducted to protect significant biological species.

An Integrated Natural Cultural Resource Management Plan will be developed to address preservation, mitigation, management and stewardship measures. Management efforts already in place include a cultural advisory committee who will provide continuous input regarding the proper management of cultural assets on the property as the project develops and an agreement with the local North Kona Dryland Forestry Working Group to provide management and stewardship of the forest resources. It is possible that the University of Hawai'i may include an educational /stewardship program related to the preserve. The University of Hawai'i will be contacted to discuss their interest in participating in an educational and stewardship program related to the dryland forest preserve and resources related to archaeological features and cultural practices.

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Hiluhilu Development LLC and its archaeological and cultural consultants have solicited input from longtime residents of the project area and persons with knowledge and interest in the cultural and natural history of this area and the overall Kekaha region. A number of these "cultural consultants" have met with the Hiluhilu "team" on more than one occasion and have provided valuable input on local resources. (See Cultural Assessment, *Appendix C*). Most of them have agreed to meet on the site approximately twice a year in the future to provide ongoing cultural input. This group is being called the Cultural Advisory Committee. An overlapping and similar committee has been in place for the past ten years, providing advice and input to the Hawai'i Community College and West Hawai'i Center planning efforts for the adjacent 500-acre UH owned site. The members of this committee are: Mr. Eli Nahulu, Mr. Wendell Davis, Mr. Angel Pilago, Ms. Leinaala Lightner, Ms. Hannah Springer, and Mr. Gene Leslie.

Figure 3-4 illustrates efforts to minimize impacts of the project on viewplanes. See *Appendix T* for draft INCRMP.

3.2.6 Schools and other Public Services

Palamanui will meet all requirements to share in costs of additional public services and recreational areas. The need for schools, police, fire and other public facilities is a subject of ongoing discussions with relevant State and County agencies. If needed, school sites and police and fire substations will be located either in the Palamanui site or the adjacent parcel. Land for churches and other community and private religious and service organizations may be included in the overall planning.

Hiluhilu Development will contribute to the development, funding and/or construction of school facilities, on a fair share basis, as determined by and to the satisfaction of the Department of Education. Terms of the contribution will be agreed upon in writing by Hiluhilu Development and the Department of Education prior to obtaining county subdivision and building permits.

Fair share contributions are unresolved at this time. Preliminary discussions with State Department of Education regarding current fair share policies and development towards an agreement are ongoing. Hiluhilu Development is currently reviewing the State Department of Education Fair Share program.

Hiluhilu Development will work with the DOE to determine if the fair-share contribution should be paid in land, in fees, or a combination of both. At minimum, Hiluhilu Development can expect to contribute a fair share towards the construction cost of future educational facilities.

If the DOE determines that land dedication is required, Hiluhilu Development would provide the land within the Palamanui project site. Such a requirement, however, would involve additional planning, site design analysis and negotiations with the DOE to determine facility needs and siting requirements. If the DOE determines that a fee in-lieu is required, clarification will be needed to clarify fair share calculations. Further discussion is provided in section 6 and *Appendix M*.

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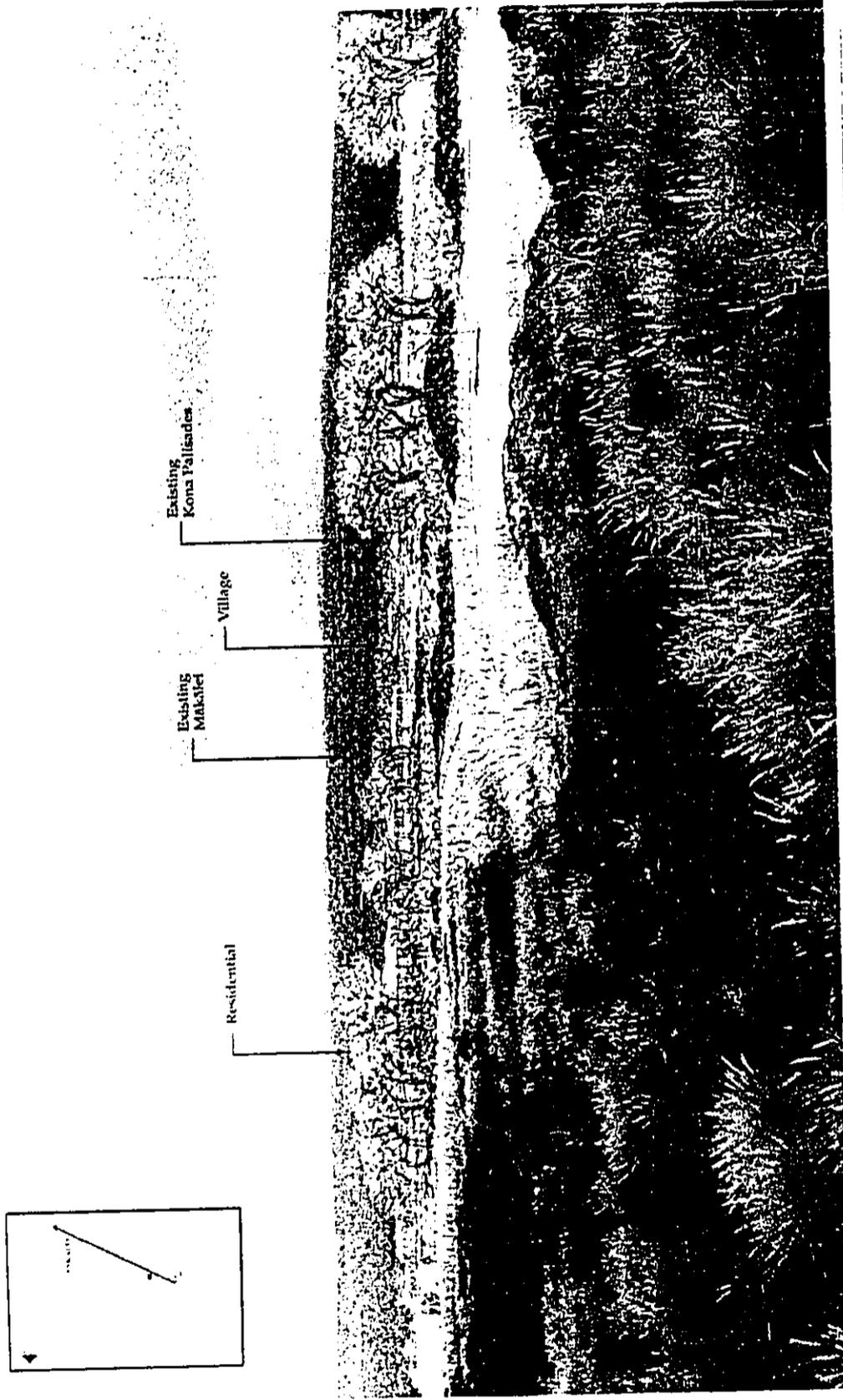


Figure 3-4
View Impacts of Palamanui Project

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3.2.7 Infrastructure

Infrastructure facilities to support the development include access and internal circulation roadway networks, a wastewater treatment and disposal system, a potable water supply and fire protection system, a non-potable water irrigation system and other utility systems (see *Appendix A* for Civil Infrastructure Study).

Civil infrastructure for the proposed development will be built in three phases, as appropriate for the gradual development of the site. Phase 1 will provide the required infrastructure for development of the golf course and a portion of the village center. Phase 2 will expand the infrastructure systems to accommodate additional residential and village center development. Phase 3 will provide infrastructure for complete build out of the Hiluhilu parcel. For details on the timing of infrastructure construction see *Appendix K* of this report.

Each phase of infrastructure development will be designed and constructed to accommodate the proposed University of Hawai'i Center at West Hawai'i campus development on the adjacent parcel south of the Palamanui parcel. Phase I infrastructure will deliver water, sewer and road access to the University Village Center.

3.2.7.1 Roadway System

The developer proposes to provide a network of roadways to, from and through the project site (a traffic study was conducted – see *Appendix E*). The road network will serve the Palamanui development and support state and county regional roadway plans, such as the Keāhole to Kailua (“K to K”) development plan. Hiluhilu Development will reserve the necessary corridor for the planned 120-foot (Midlevel Road) and 80-foot (Main Street) and Kealakehe Street Extension right of ways. Mākālei Drive will be connected to Queen Ka’ahumanu Highway through an internal system of roadways to the University Village and from the University Village to Queen Ka’ahumanu Highway at the Kona International Airport at Keāhole intersection by the main Palamanui access road. This will provide another mauka-makai roadway through the region. A collector mauka-makai road is also being reviewed by the County but its alignment is still uncertain. The lower portion of this roadway is likely to be the main access road to Palamanui. The development of the University of Hawai'i Center at West Hawai'i will probably enhance the possibility of construction of the “Main Street” link to Ka’iminani Street to the south. The development of these roadways would improve access and enhance traffic flow for residents of existing subdivisions nearby such as Kona Palisades. The developer will construct all required intersection and roadway improvements for the Palamanui access road at no cost to the State Department of Transportation (SDOT) and will also contribute its fair share to regional roadway improvements, based upon discussions with the SDOT. Plans for construction within State highway rights-of-way will be submitted to the SDOT for review and approval.

The SDOT is planning to widen Queen Ka’ahumanu Highway from Kailua-Kona northward. Currently, the SDOT is moving forward with Phase I, which will be completed by Year 2008. Phase I will widen Queen Ka’ahumanu Highway from Henry Street to Kealakehe Parkway from two (2) lanes to four (4) lanes. The traffic study assumes that Phase I will be completed by Year 2008. Phase II of the widening project calls for the widening of Queen Ka’ahumanu Highway between Kealakehe Parkway and Keāhole Airport Road from two (2) lanes to four (4) lanes. Completion of the Queen Ka’ahumanu Highway widening from Kealakehe Parkway to Keāhole Airport Road is anticipated for 2011. Hiluhilu is currently consulting with the SDOT to

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obtain Highway Division's comments on the Traffic Impact Assessment Report, and input relative to the proposed project access road from Keāhole Airport intersection.

Offsite Access

Airport Access Road: The primary vehicular access to the project site will be provided by a new roadway intersecting Queen Ka'ahumanu Highway at its intersection with the existing Keāhole Airport Road, herein referred to as the Airport Access Road, an 80-foot wide mauka-makai collector. (Figure 3-5) Intersection alternatives are currently being examined. Figure 3-6 shows conceptual layouts for 2 lane and 4 lane intersection improvements. The Airport Access Road is the preferred alternative, subject to cost and design considerations. Direct, on-site access to the University Village from Queen Ka'ahumanu Highway is being kept as an option in case the Airport Access Road does not occur. Since Hiluhilu Development does not own the land between the Keāhole Airport Road intersection and University Village, the Airport Access Road was initially considered only as an alternative to direct access through the project. In the interim, the Department of Land and Natural Resources (DLNR) and the Department of Hawaiian Homelands (DHHL) have been contacted. Discussions and preliminary planning have begun for the Airport Access Road.

Northern Project Access Road: An alternative access road north of the existing Queen Ka'ahumanu Highway/ Keāhole Airport Road intersection and along the southern Project border, herein referred to as the Northern Project Access Road, is being considered as an alternative. (Figure 3-1)

Mākālei Access Road: Secondary access to the Project site will be constructed to connect to the existing Mākālei Estates roadway, which provides a connection to Māmalahoa Highway. Connections to existing and proposed offsite roads to the east, north and south of the Hiluhilu parcel will be provided. Roadways and roadway access connections will be designed to comply with applicable standards.

Onsite Roads: A through road connecting to the project access road from Queen Ka'ahumanu Highway will continue east past the village center through the golf course and single-family residential areas to the east end of the parcel. At the eastern boundary, the mauka-makai road will connect to the existing mauka-makai road through Mākālei Estates that connects to Māmalahoa Highway. Hiluhilu recognizes that the road through Mākālei Estates has steep grades and that a better alignment to connect Māmalahoa Highway through land not owned or controlled by Hiluhilu may be needed at some point in the future. Hiluhilu is prepared to continue its discussions with the County of Hawai'i and the State regarding their preferences on an alignment so that the site planning for Palamanui can take the preferences of the affected agencies into account.

At the Village Center, the main north-south road will be a continuation of the proposed "Main Street" through the UH West Hawai'i parcel. The road will be designed for continuation across the northern project boundary in the future. Two additional north-south connector roads east of the village center and the proposed mauka-makai road from Queen Ka'ahumanu Highway to the Kealakaa Street Extension, as identified in the Keāhole to Kailua Development Plan will be accommodated by the Hiluhilu roadway system. Coordination with the County has been initiated and will continue during design and construction of all roads that are to be dedicated to the County. Minor roads within the development will serve the village and surrounding commercial/ institutional areas, as well as residential areas within the project.

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Development of the roadway system will involve construction of the main access and collector roads in the initial phases of the project and construction of the minor roads serving commercial, institutional, and residential areas as these areas are developed. Specific road designs will be based on standardized cross sections.

Main Roads: The Hawai'i County Public Works Department has two standard road types – streets with sidewalks (Standard Detail R-32) and streets without sidewalks (Standard Detail R-33). These standards will apply to the main collector roads within the project, which will be dedicated to the County. As a modification to the standard roadway sections, bicycle paths will be provided to support University-related and other bicycle traffic (*Figure 3-7*). Bike paths will also be designed on access roads leading to the proposed development. Right-of-way widths and other details will be adjusted, as needed, to comply with applicable County requirements for specific roads.

Minor Roads: The local roads within the development may remain private and may vary from County standards. Fifty (50) foot rights-of-way will be used (*Figure 3-7*). Minor roads in the village area will include sidewalks, but minor roads in single-family residential areas low-density commercial/institutional areas will not include sidewalks. Bicycle paths will not be designated on the minor roads due to the lower volume and lower speed of traffic that these roads will carry.

3.2.7.2 Site Grading and Erosion Control

Grading: The project does not propose major grading of the site. The existing topography will be altered only to the extent necessary for construction of the proposed improvements. It is anticipated that grading will occur on a localized scale and that cut and fill quantities will generally balance as construction progresses.

Erosion Control: During all phases of construction on the Hiluhilu project, erosion control practices will comply with both State and County regulations. National Pollutant Discharge Elimination System (NPDES) permits will be obtained from the Hawai'i Department of Health for stormwater discharges from construction activities. Best Management Practice plans to control erosion during construction will be a component of the NPDES permits.

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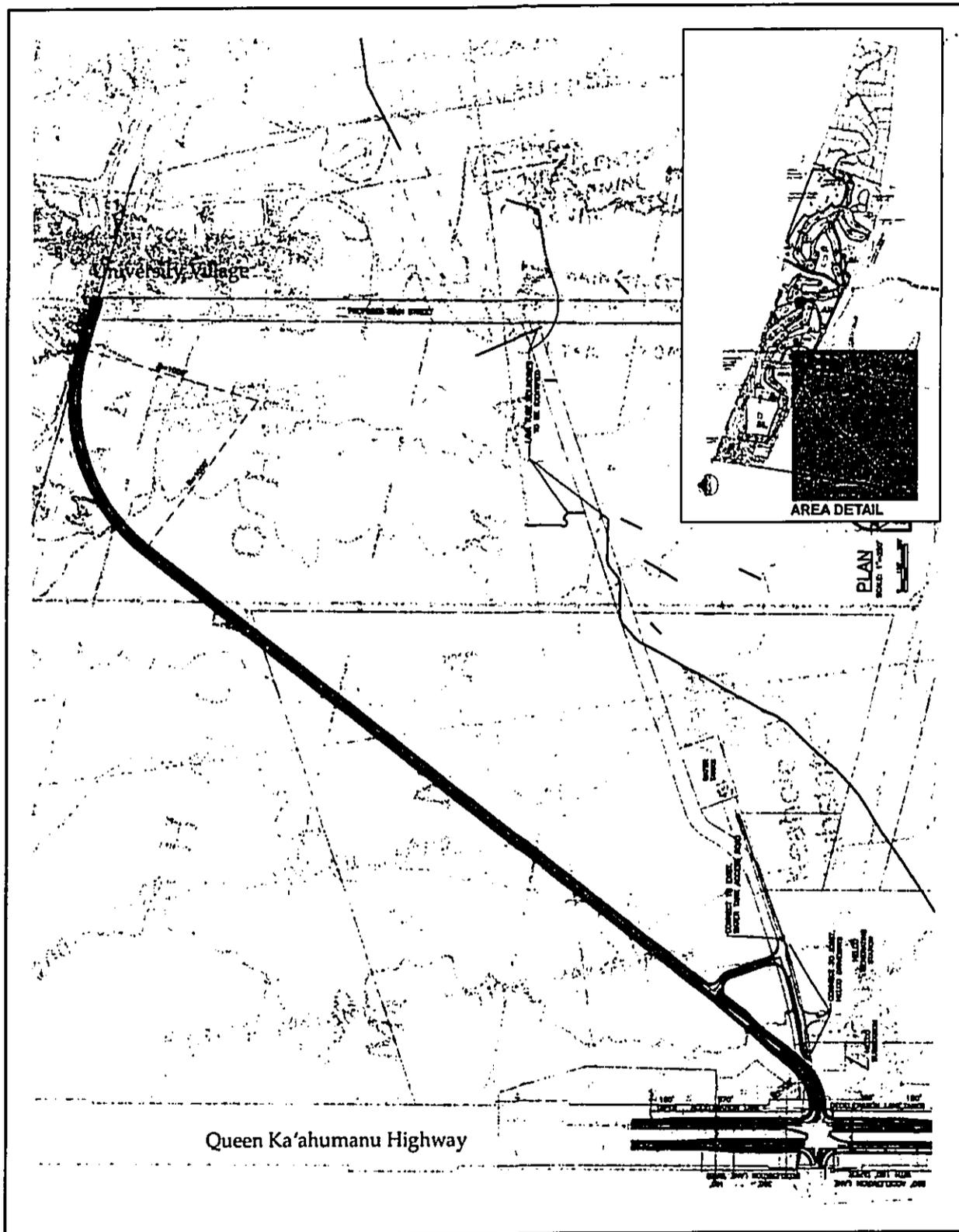
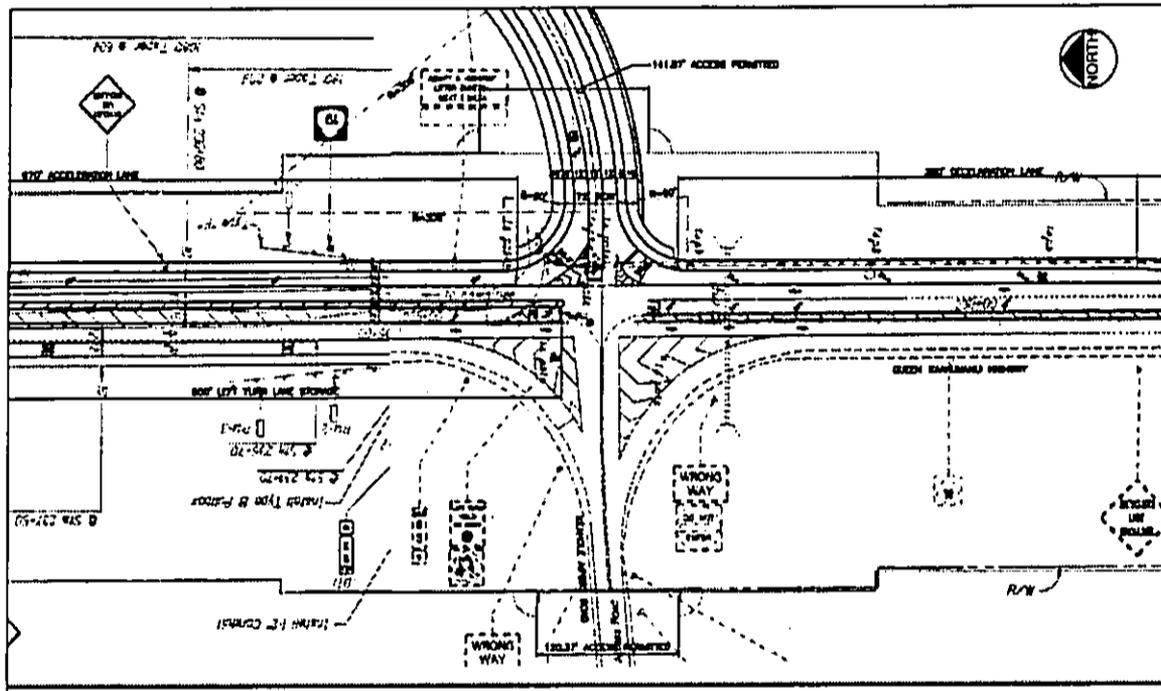


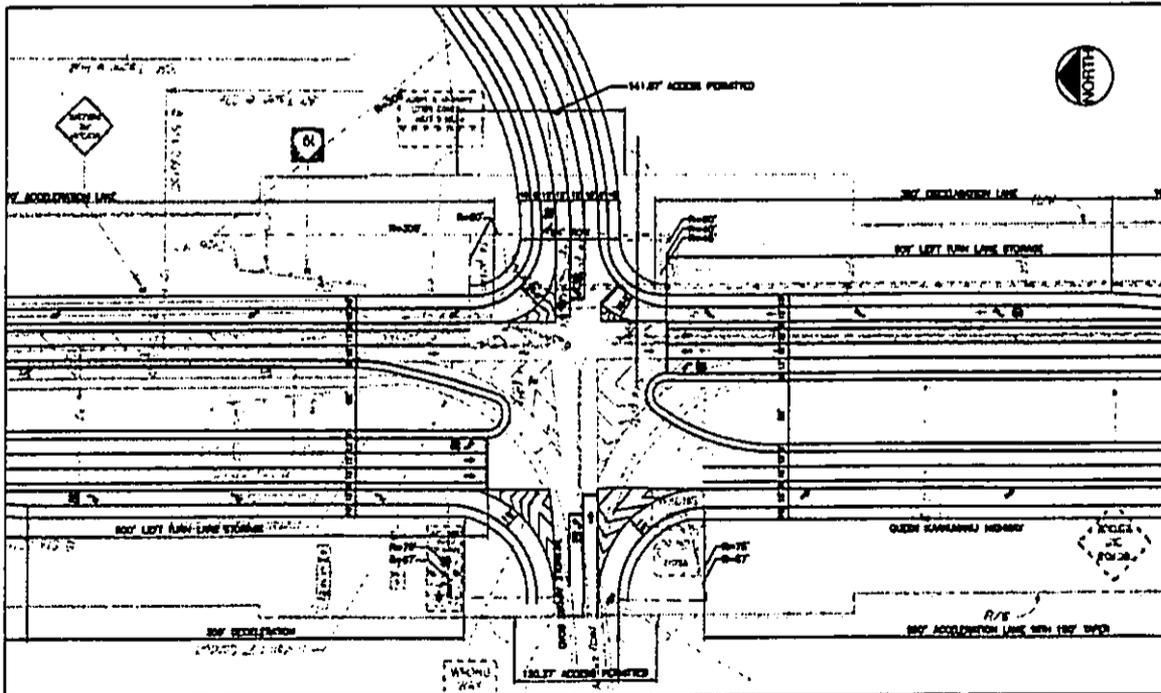
Figure 3-5
Proposed Airport Access Road

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Two Lane Alternative



Four Lane Alternative

INTERSECTION
SCALE 1"=40'

Figure 3-6

Proposed Queen Ka'ahumanu Intersection Detail – 2-Lane and 4-Lane Alternatives

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3.2.7.3 Storm Drainage System

Planning for stormwater runoff included review of potential non-point source pollution and use of appropriate best management practices. The storm drainage system will be constructed in conjunction with the development of roads and specific sites within the project. See *Appendix A* for a description of the proposed storm drainage system. Participation in a coastal monitoring program to assist in the protection of off-shore class AA waters is being considered.

Stormwater runoff from impervious areas will be collected through a system of swales, catch basins, and pipes and transported to stormwater drywells or infiltration areas for disposal. The permeability of the existing soils is evident by the absence of any natural stormwater channel or gullies in the vicinity of the site. Infiltration areas will be located in the golf course and other open spaces, where practical. Drywells will be located within roadway rights-of-way and within individual parcel, as needed.

The drywells will be designed as shallow infiltration basins with a horizontal dimension that exceeds basin depth. This configuration would not require an underground injection control permit from the State Department of Health. Permanent structural best management practices (BMP)s will be included during project design, and will primarily target nutrients and pesticides from both golf course and residential activities. Permanent non-structural BMPs would be included in the project's overall storm water operation and maintenance program and in the golf course operation and maintenance program. The storm drainage system will be constructed in conjunction with the development of roads, the golf course, and specific sites within the project.

The drywells, retention basins and landscape buffer strips along roads and common areas will be designed to filter pollutants and silt through sand and gravel layers. Vegetated retention basins will also provide some biological uptake of nutrients in stormwater.

Runoff that enters drywells from hardscape areas would not be subject to biological uptake of pollutants, but most pollutants will be bound to the upper layers of sand and soil in the drywell, which will minimize the potential for pollutants to reach the groundwater. Pesticides currently available are generally not persistent, as they break down rather quickly in the environment. The golf course and landscape management plans will be responsible for minimizing the discharge of fertilizers and pesticides, and selecting appropriate products to minimize storm water pollution.

3.2.7.4 Water System

The Palamanui project will include expansion of the County's potable water system through the public rights-of-way within the project and construction of a non-potable water system for golf course irrigation. Brackish well water will be used to irrigate the golf course in the early years. As treated effluent becomes available, it will supplement the brackish irrigation system. To date Hiluhilu Development has outfitted and dedicated one of the two potable wells on the Kau property to the Department of Water Supply (DWS). Water studies for the Palamanui project have been completed by Waimea Water Services (2003). (*Appendix J*) See also Civil Infrastructure *Appendix A*.

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Description of Wells in the Area

Figure 3-8 shows the various potable and non-potable water wells in the area around Palamanui. The potable water wells are HR1, HR2, HR3, HR4, HR5 ("Hu'ehu'e Ranch Wells", 4458-01 ("Kau Well 1"), 4458-02 ("Kau Well 2"), 4358-01. Figure 3-8 also shows proposed brackish wells on the project site. The actual location of those wells has not been determined and the location of the dryland forest area will be considered in determining where those wells should be located.

Hu'ehu'e Ranch Well 5 pumps water that is not within the Palamanui resource subarea. The potential pumpage from the other Hu'ehu'e Ranch wells is 1.2 mgd. Hu'ehu'e Well 1 is designed to pump at a rate of 350 gpm while Wells 2, 3, 4, & 5 are designed to pump at a rate of 540 gpm each. All are intended to be pumped for a 16-hour day and the expected production will average 2.0 mgd, the sustainable yield as estimated by Waimea Water Services in 1991.

Kau Well 2 has been outfitted with a pump-house and a small reservoir. Kau Well 2 and the related improvements are being completed and will be dedicated to the County Department of Water Supply upon completion. The dedication documents for Well #2 and related improvements have been prepared and sent to the County Department of Water Supply. Final adjustments to the control systems for the water pump are being done. Upon completion of that work the dedication of Well #2 will be completed. Upon dedication, Hiluhilu will have 262 water units. Hiluhilu is actively pursuing the additional water units for Palamanui with the County of Water Supply and the other party to the Water Agreement with the County of Water Supply involving water units from Well #1 and Well #2.

Kau Well 1 has been drilled and cased, but does not have a pump, storage tank or connecting transmission line to the County Department of Water Supply system. Kau Wells 1 & 2 were each intended to produce 0.8 mgd (million gallons per day). The wells were to be pumped at a rate of 1000 gpm (gallons per minute) for 16 hours per day.

The salinity in the Kau Wells is about 35 mg/L chlorides in comparison to a salinity of 150 mg/L in HR #2. Recent (April 1999) water level in Kau#1 and HR#1 were 9.38' and 7.73' respectively. The Hu'ehu'e wells are spaced out over a distance of about 1.5 miles or a sustainable yield of about 1.33 mgd/mile of aquifer width. By contrast, the Kau wells are expected to have a sustainable yield of 1.6 mgd in 0.4 miles or 4 mgd/mile of aquifer width.

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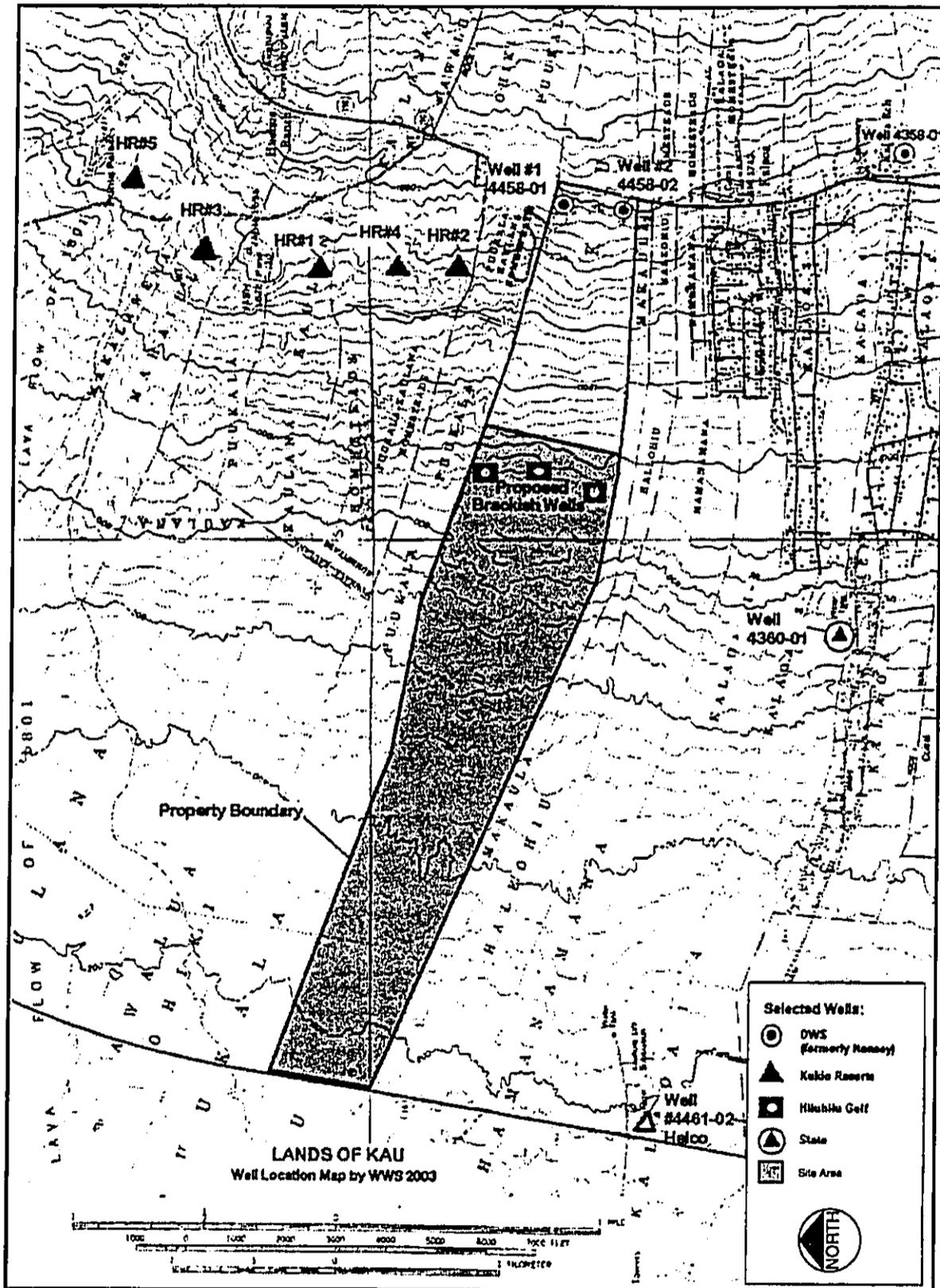


Figure 3-8
Well Locations and Proposed Brackish Well Locations

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Existing Agreement with County Department of Water Supply. Kau Wells 1 and 2 were included in a Water Agreement dated June 15, 1999, between K-W Kau, LLC, K-W Kohanaiki, LLC, and the Water Board (formerly known as the Water Commission) of the County of Hawai'i. Hiluhilu succeeded to the rights of KW Kau, while the Rutter Group succeeded to the rights of KW Kohanaiki. The existing agreement provided Hiluhilu with 343 equivalent units (EU) of water at a maximum of 600 gallons per day per EU in return for the dedication of Kau Well. Hiluhilu used 81 EU's for the Mākālei Estates subdivision. The remaining EUs will become available upon completion of Section 3.1 of the Water Agreement which includes outfitting Well No. 2, completing a transmission line between Well No. 2 and Department of Water Supply's (DWS) Puukala Tank, and improving the water transmission system to the affected properties (Palamanui and the Kohanaiki site) per Department of Water Supply requirements.

Again, the dedication documents for Well #2 and related improvements have been prepared and sent to the County Department of Water Supply. Final adjustments to the control systems for the water pump are being done. Upon completion of that work the dedication of Well #2 will be completed. Upon dedication, Hiluhilu will have 262 water units. Hiluhilu is actively pursuing the additional water units for Palamanui with the County of Water Supply and the other party to the Water Agreement with the County of Water Supply involving water units from Well #1 and Well #2.

The circumstances surrounding the development of the Kohanaiki property and the plans for the Palamanui site have changed substantially since the existing agreement was made. There is a concurrence that the critical problem for the Department of Water Supply system in this area is the distribution and storage capacity of its system and that this affects a number of State and privately owned parcel. Hiluhilu has been in ongoing discussions with the County Department of Water Supply, the Rutter Group, representatives from the Department of Land and Natural Resources and others to participate in sharing in the cost of improvements to the Department of Water Supply transmission lines and storage systems in return for water commitments. Hiluhilu will do its part in sharing in such costs and it expects that those improvements will provide adequate water for the project and the University of Hawai'i Center West Hawai'i.

Potable water demand for Palamanui. The potable water demand for this project is summarized as follows:

Phase	Potable Water Demand (gpd)		
	Palamanui	U.H. West Hawai'i	Total
1	456,000	33,000	489,000
2	215,000	201,000	416,000
3	130,000	171,000	301,000
Total	801,000	405,000	1,206,000

Table 3-6

Potable Water Demand

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The potable water demand for Palamanui breaks down to: 432,000 gpd for residential, 30,000 gpd for village commercial, 159,000 gpd for community commercial, 30,000 gpd for medical, 150,000 gpd for flexible research and development space, and 405,000 gpd for U.H. West Hawai'i.

The proposed water distribution system will extend the existing 12-inch water main in Mākālei Estates down to the village center area and provide a connection to the UH West Hawai'i Campus parcel at the village center location. It will also make possible connection to the County water main in Queen Ka'ahumanu Highway at the Kona International Airport at Keāhole access road via the two 0.5 million gallon (MG) reservoirs at the 280-foot elevation mauka of the airport access road. This connection is desirable to the Department of Water Supply so that they can move water from supply wells in the mauka areas to satisfy demands along Queen Ka'ahumanu Highway north of Kailua-Kona. The Water Resource Assessment study (2003) concluded that Palamanui will have adequate potable and nonpotable groundwater to support the project.

3.2.7.5 Wastewater System

See *Appendix A* for more details regarding wastewater system. A self-contained, wastewater collection, treatment and disposal system is proposed for Palamanui. *Figure 3-9* shows the proposed location for the wastewater treatment plant. A conceptual sketch of the system is provided in *Figure 3-10*. Hiluhilu Development is also considering alternative treatment systems such as living machines, lagoon and wetland options. Final decisions on the system will be determined after economic, health and environmental considerations have been fully assessed. All wastewater plans will conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems," and to the Department's guidelines for the treatment and use of recycled water.

Nonpotable Irrigation Water. Based on the experience of the Hualālai Golf course, it is estimated that about 1 mgd of irrigation water will be required for the golf course during grow in. If the soil is adequately prepared, the golf course should not require more than 0.8 mgd once the grass is established, assuming that about 100 acres are under irrigation. The irrigation water will be provided by a system with two supply sources. The supply will be "R-1" recycled water produced by the on-site wastewater treatment plant in compliance with Department of Health requirement for golf course irrigation. The secondary source will be on-site non-potable brackish wells that will be located at the mauka end of the project site. The golf course irrigation system will be designed to use all recycled water to the extent feasible. However, even at full buildout, the recycled water will not completely satisfy the irrigation demand of the golf course. Because the golf course will be constructed in Phase 1 of the project, when wastewater flows are relatively low, non-potable would initially be relied upon for the majority of golf course irrigation. As project development progresses and wastewater flows increase, recycled water would provide a greater proportion of the golf course irrigation requirement. Approximately 0.3, 0.6 and 0.8 mgd of recycled R-1 water for golf course irrigation will be generated respectively by Phases 1, 2 and 3 of Palamanui. See *Appendix A* for more details regarding wastewater flow projections.

Wastewater Collection: The proposed WWTP location has been selected to maximize the use of gravity flow of raw wastewater to the WWTP. The individual wastewater collection system components will also be designed to minimize the need for pumping of raw wastewater.

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Pumping of raw wastewater is undesirable due to the high maintenance typically required to provide reliable pumping, the requirement of standby power for wastewater pumping stations, the undesirable consequences of a wastewater spill that could result from a pumping system failure, and the energy requirements of pumping.

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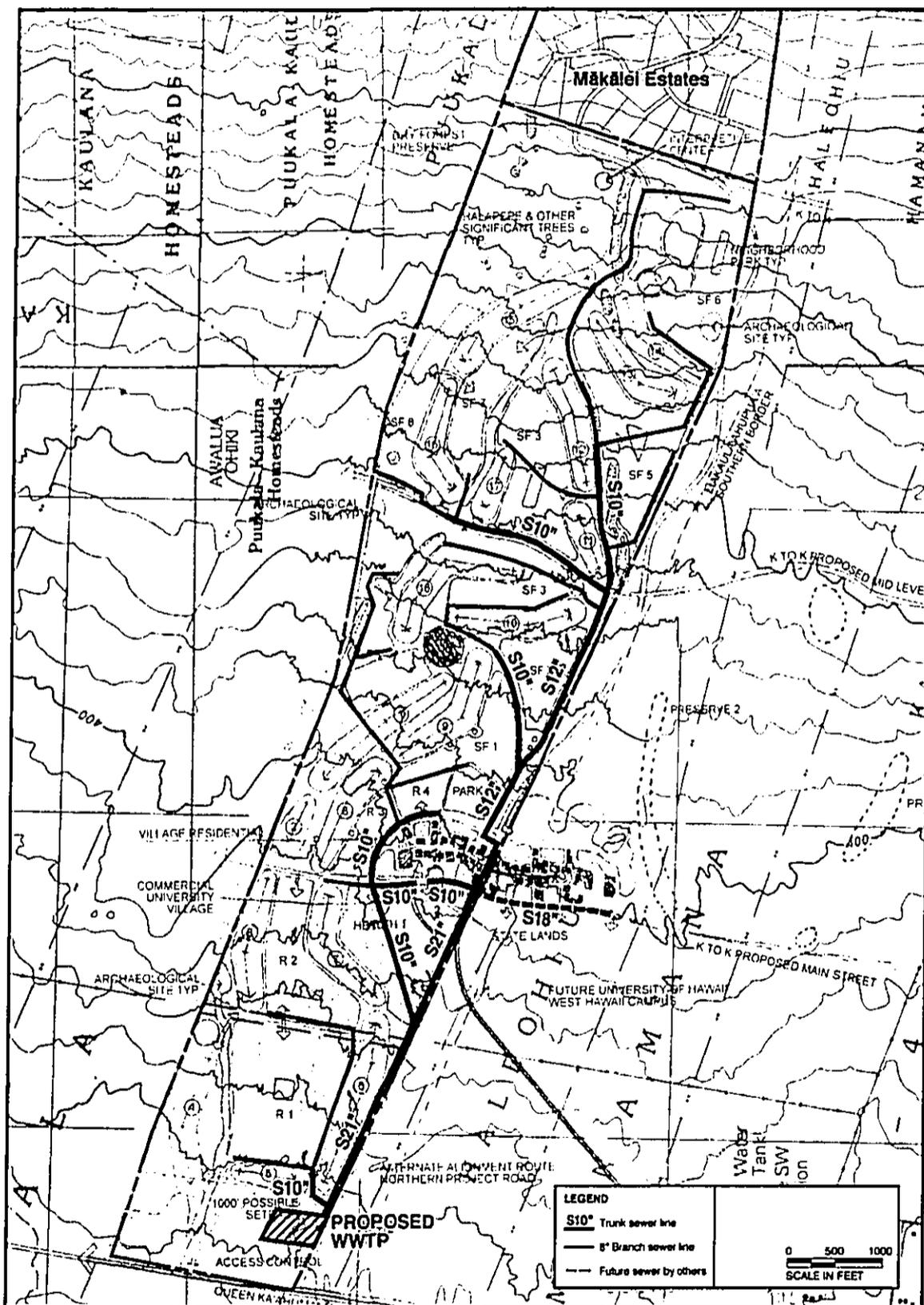


Figure 3-9
Wastewater Master Plan

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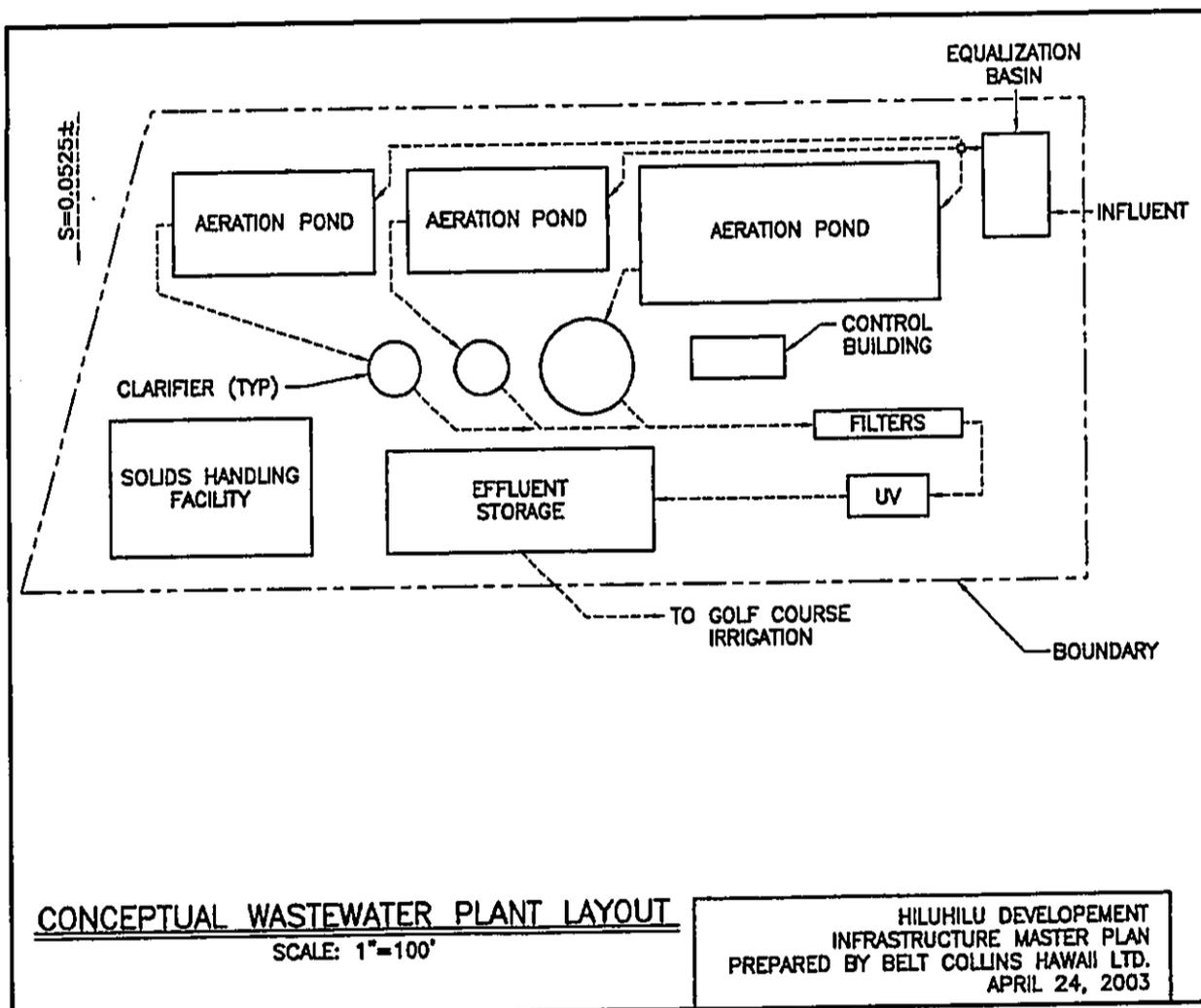


Figure 3-10

Conceptual Wastewater Plant Layout

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Wastewater Treatment: Current plans are to employ a relatively simple “low-tech” aerated lagoon system to naturally treat the wastewater to the secondary treatment level. Advanced treatment to produce R-1 water would be accomplished by media or membrane filtration, and ultraviolet light (UV) disinfection. The proposed WWTP will provide advanced wastewater treatment to produce recycled water for golf course irrigation meeting DOH’s definition of “R-1 Water.”

The WWTP ultimate capacity will be approximately 850,000 gpd. The WWTP will be constructed in three phases to accommodate the development phases of the Palamanui project.

The WWTP will be designed to minimize energy consumption to the extent practicable. Elevation differences at the proposed site can be exploited to reduce the amount of energy needed to pump the process water within the WWTP. Energy conservation will also be considered in the selection of aeration method and equipment, and in the selection of UV disinfection equipment.

Odor control will also be an important criterion of the WWTP design. Passive odor control design will be employed to the extent practicable, and active odor control systems will be installed only if the passive systems cannot adequately address odors generated at the facility. Location in the highway buffer zone minimizes potential impacts. The golf course will act as a buffer to populated areas by creating greater separation. Enclosures, aeration and air filtration are other methods that may be implemented if needed. Biological filters used in some of the alternative technologies also reduce odor if properly maintained and may constitute an odor control option.

The design and layout of the WWTP will allow the University of Hawai’i Center West Hawai’i to use the system as the campus develops.

Effluent Reuse/Disposal: The R-1 water produced by the WWTP will be pumped to a storage reservoir for reuse in the golf course irrigation system. Injection wells are proposed to provide standby disposal, as required by DOH regulations. Effluent that could not be used for golf course irrigation due to rainy weather conditions will be discharged to the injection wells. Also, effluent not meeting the turbidity criteria for R-1 water, due to failure of a treatment component, can be discharged to the injection wells. The latter condition will be infrequent, but must be addressed in system design.

Biosolids Reuse/Disposal: Biosolids produced from the wastewater treatment process will be dewatered at the WWTP and composted with green waste from golf course and other landscaped areas to produce a soil amendment that will either be used on-site or sold for use off site. The composting process will be designed to meet all EPA and DOH requirements applicable to the intended uses. The proposed composting facility will be located at the WWTP site, and will be equipped with an odor control system to manage odors typically associated with composting facilities.

3.2.7.6 Solid Waste

Solid wastes generated on site will be collected and disposed at approved County solid waste disposal facilities. A solid waste management plan will be developed to reduce the volume generated during construction. A recycling program will be encouraged throughout the project. Composting of green waste will be encouraged and landscape maintenance will recycle as much as is practicable.

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Recycling of solid wastes will be accommodated and implemented to the extent practicable. Green wastes generated by golf course and landscape maintenance will be composted with biosolids at the wastewater treatment plant. Solid waste systems will be designed to comply with the applicable DOH and County requirements. Solid waste from multi-family, commercial and institutional uses will be handled by private waste hauling contractors. Solid waste stream is discussed in *Chapter 6*. Calculations for solid waste generation estimates are found in *Appendix R*.

3.2.8 Sustainable Development (LEED solutions)

The Palamanui project will use Leadership in Energy and Environmental Design (LEED) sustainable design principles to maximize the efficient use of energy and resources throughout the project. LEED is a building rating system developed and managed by the U.S. Green Building Control which evaluates environmental performance from a whole building perspective over a building's recycle, providing a definitive standard for what constitutes a "green" building. LEED strategies include a multi-tiered comprehensive approach to provide the best results for the occupants, project developer, community and environment.

The synergistic effect of integrating energy efficient solutions in all three areas of Passive, Infrastructure and Building strategies multiplies its positive results.

Passive Strategies for Energy Efficiency: Palamanui will employ passive strategies which are those indirect programs and design elements that encourage a reduction in energy consumption as well as provide opportunities for them to become mainstreamed and convenient for users. One such strategy is providing Public Transportation Access, be it a pedestrian friendly campus design, bicycle lane or shuttle bus. Reducing the number of cars and associated trips reduces dependence on energy and creates a cleaner environment. Also providing programs and facilities such as bicycle storage, changing rooms, and reduced parking capacities encourage the use of the alternatives that are energy efficient and environmentally friendly. Also reducing and recycling our wastes also is a passive strategy for energy efficiency, for it reduces quantity of new products needed and the production and transportation costs involved. Passive strategies will also include site design concepts and landscaping that will orient buildings for maximum use of cross ventilation and minimization of solar heat gain. Building orientation and location of trees, hedges and fences will consider these factors in their design.

Infrastructure Design Strategies for Energy Efficiency: The second category to be considered is in the design of the infrastructure. These are those renewable energy sources such as wind and solar, but through technological advances include more elaborate green power sources such as heat transfer and ice plants. Equally important is designing the infrastructure to reduce heat island loads through such measures as grass block parking lots and landscaping.

Building Design Strategies for Energy Efficiency: The last category is the specific building strategies that are the most visible in achieving an energy efficient design. Optimizing Energy Performance is the main approach for using energy efficient fixtures and facilities. Smart monitoring and switching allow facilities to activate when used and kept dormant when not. The building itself can be sheathed in an energy efficient skin as well as insulation to mitigate heat loss or gain. The building can be sited to maximize day lighting while minimizing exposure to radiant heat. Roofs can be designed to face south so that solar panels can be placed on the roofs. Also through building measurement and commissioning the buildings controls and equipment can be correctly calibrated and the maintenance staff trained to keep the facility

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running at optimum efficiency through the life cycle of the project. The use of solar energy for heating and co-generation for facilities where this optimizes energy performance will be considered. Photovoltaic uses will be considered where practicable. Lastly, showcasing all the elements that have rendered the facility, as energy efficient can become a learning vehicle for all occupants and visitors to become more environmentally conscious and make energy efficient choices daily.

Sustainable Building Techniques: Hawai'i law calls for efforts to conserve natural resources, promote efficient use of water and energy and encourage recycling of waste products. Planning a project to include sustainable design concepts can be a critical step toward meeting these goals. A sustainable building is built to minimize energy use, expense, waste, and impact on the environment. It seeks to improve the region's sustainability by meeting the needs of Hawai'i's residents and visitors today without compromising the needs of future generations. Compared to conventional projects, a resource efficient building project will:

- Use less energy for operation and maintenance;
- Contain less *embodied energy* (e.g. locally produced building products often contain less *embodied energy* than imported products because they require less energy-consuming transportation);
- Protect the environment by preserving/conserving water and other natural resources and by minimizing impact on the site and ecosystems;
- Minimize health risks to those who construct, maintain, and occupy the building;
- Minimize construction waste;
- Recycle and reuse generated construction wastes;
- Use resource-efficient building materials (e.g. materials with recycled content and low embodied energy, and materials that are recyclable, renewable, environmentally benign, non-toxic, low VOC (Volatile Organic Compound) emitting, durable, and that give high life cycle value for the cost);
- Provide the highest quality product practical at competitive (affordable) first and life cycle costs.

With the use of recycling and LEED sustainable design efforts, we estimate a 40% reduction in the amount of solid waste generated. Specifically, LEED technologies and strategies seek to minimize the waste generated by construction activity and building occupants. Strategies include provision of easily accessible areas that serve the entire building and are dedicated to the separation, collection and storage of materials for recycling including at a minimum, paper, glass, plastics, and metals. The provision and use of the collection bins should be able to accommodate a 75% diversion rate when easily accessible to custodial staff and recycling collection workers. In addition, LEED solutions regarding recycling and or salvaging of construction waste can result in at least a 50% (by weight) reduction of construction and land clearing waste hauled to the landfill.

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3.3 DEVELOPMENT SCHEDULE AND PROCESS

Project development and implementation is scheduled to begin immediately following approvals of necessary land use amendments, zoning, permits, and available funding. The scope of the project requires substantial coordination with State and County agencies as well as collaboration with the University of Hawai'i.

Of the 725.2 acres in Palamanui, 547.3 acres will be developed. The balance of 177.9 acres will be open space, parking and preservation. A total of 845 residential units will be developed consisting of low density residential, patio homes, condominiums, International Student Housing, University and Senior Housing. The commercial development will include those related to the University Village (including the University Inn), community commercial, medical, and flexible research and development spaces.

The Palamanui Hiluhilu Development project will be developed over a 10-year period from 2004 – 2014. Annual development schedule is illustrated in *Table 3-7*. This development plan timetable (*Appendix K*) outlines the proposed annual development plan. This timetable is based on projected annual absorption rates defined by the Market Study provided in *Appendix I* of this report.

Phasing is by type of infrastructure, rather than calendar sequence, whereas the Development Timeline specifically identifies the sequence of improvements by calendar year. Phase I involves infrastructure improvements; Phase II involves Residential improvements, and Phase III involves Multi Family and Commercial improvements. Subdivision collector roads will be done as the residential lots are done.

Real Estate Absorption: The project is anticipated to commence in 2004 with basic infrastructure and golf course development. Initial real estate sales will begin in 2005 and include ocean view estates and ocean view lots along or near the golf course. Housing and commercial space in the University Village will be available for occupancy one or two years later. Total buildout of the residential and commercial areas is expected in 2014. See *Appendix I* for absorption schedule.

Hiluhilu will handle the installation of arterial roadways, major electrical improvements (including transmission lines and necessary switching and transformer substations), sewage treatment plant and golf course improvements (including the irrigation wells), the protective enclosures/exclosures and other improvements for preservation of the dry forest preserve, significant trees, and caves with significant fauna and features. Hiluhilu will provide connector roads and other infrastructure to service the residential, retail and commercial lots that it will create.

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PALAMANUI DEVELOPMENT PLAN TIMETABLE											
10 YEAR 2005 - 2014		AS OF 11/24/03									
Development Year	1	2	3	4	5	6	7	8	9	10	
Calendar Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
I) INFRASTRUCTURE											
Access Road											
Connect to Makalei Estates & Queen K. Hwy											
Create access road for University Village											
Subdivision Roads											
Extend minor streets & systems as needed											
Layout Pedestrian Area in University Village and Related Parking											
Private Wastewater Treatment Plant											
Phase 1 - Construct treatment plant including treated effluent (wastewater) storage and distribution for irrigation of golf course											
Expand wastewater treatment plant											
Potable Water System											
Connect to County Dept of Water system. Include storage tanks and distribution line to connect to University site											
Golf Course											
Drill and Develop Irrigation Wells for Golf Course and Landscaping											
Grading, Construction & Landscaping											
Construct Walls or Fences around Dry Forest Area											
Exclosure of endangered species outside of dry forest area											
Protection of cultural and archaeological areas											
II) RESIDENTIAL											
Ocean View Estate Lots											
Phase 1 - 30 Lots											
Phase 2 - 20 Lots											
Phase 3 - 20 Lots											
Ocean View Lots											
Phase 1 - 20 Lots											
Phase 2 - 30 Lots											
Phase 3 - 35 Lots											
Phase 4 - 35 Lots											
Phase 5 - 40 Lots											
Phase 6 - 40 Lots											
Golf View Lots											
Phase 1 - 20 Lots											
Phase 2 - 20 Lots											
Phase 3 - 20 Lots											
Phase 4 - 30 Lots											
Phase 5 - 30 Lots											
Patio Homes											
Phase 1 - 20 Units											
Phase 2 - 20 Units											
Phase 3 - 20 Units											
Phase 4 - 20 Units											

Table 3-7

Developmental Timeline

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PALAMANUI DEVELOPMENT PLAN TIMETABLE											
10 YEAR 2005 - 2014		AS OF 11/24/03									
Development Year		1	2	3	4	5	6	7	8	9	10
Calendar Year		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
III)	MULTI FAMILY										
	2 Bedroom Condominium Apartments										
	Phase 1 - 10 Units										
	Phase 2 - 20 Units										
	Phase 3 - 10 Units										
	Phase 4 - 20 Units										
	3 Bedroom Condominium Apartments										
	Phase 1 - 10 Units										
	Phase 2 - 20 Units										
	Phase 3 - 10 Units										
	Phase 4 - 20 Units										
	Rental Apartments										
	Phase 1 - 100 Units										
International Student Housing											
Phase 1 - 75 Units											
Senior Housing Units											
Phase 1 - 80 Units											
IV)	UNIVERSITY VILLAGE INN										
	Phase 1 - 60,000 SF										
V)	UNIVERSITY LEASES										
	Phase 1 - 30,000 SF										
	Phase 2 - 30,000 SF										
VI)	VILLAGE COMMERCIAL										
	Phase 1 - 30,000 SF										
	Phase 2 - 40,000 SF										
VII)	MEDICAL CAMPUS										
	Phase 1 - 30,000 SF w/parking										
	Phase 2 - 30,000 SF w/parking										
	Phase 3 - 30,000 SF w/parking										
	Phase 4 - 30,000 SF w/parking										
VIII)	R&D										
	Phase 1 - 10,000 SF w/parking										
	Phase 2 - 10,000 SF w/parking										
	Phase 3 - 15,000 SF w/parking										
	Phase 4 - 20,000 SF w/parking										
	Phase 5 - 30,000 SF w/parking										
	Phase 6 - 40,000 SF w/parking										
	Phase 7 - 45,000 SF w/parking										
	Phase 8 - 50,000 SF w/parking										
IX)	COMMUNITY COMMERCIAL										
	Phase 1 - 25,000 SF w/parking										
	Phase 2 - 25,000 SF w/parking										
	Phase 3 - 25,000 SF w/parking										
	Phase 4 - 35,000 SF w/parking										
	Phase 5 - 40,000 SF w/parking										
	Phase 6 - 50,000 SF w/parking										
X)	GOLF COURSE										
	Begin Golf Course grading and development of Clubhouse										
	Begin clubhouse construction										
	Complete Clubhouse and course grow-in, open to public										

Table 3-7 (Continued)

Developmental Timeline

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Hiluhilu will construct the initial phases of the University Village, including buildings for college uses, associated commercial and multi-family residential uses and associated activities. The intent is to set an overall theme which will guide incremental additions over time. Hiluhilu will work with specialty developers for the design and construction of future projects including a modest hotel, medical and research facilities.

However, all of the land will be subject to various covenants and restrictions which will require all owners within Palamanui to comply with design standards and uses as defined in those covenants. The covenants will also include membership in owners' associations, obligate owners to contribute to common area costs, including those for preservation of the botanical, faunal and archaeological resources within Palamanui, obligate owners to comply with all hazardous material laws to comply with all best management practices established by Hiluhilu or the government regarding management of contamination and surface water runoff within Palamanui, and to comply with any applicable conditions imposed by the Land Use Commission or by County zoning on the land.

3.4 SUMMARY OF ESTIMATED PROJECT COSTS

The Palamanui project will have a project cost/investment of just over \$300 million over a ten-year period (2004-2014). A summary table of project cost for Palamanui is provided in *Table 3-8*.

Of these costs the major items are: \$76.4 million is infrastructure cost, \$121.3 million is cost to develop the parcel, \$20.4 million for the residential improvements and \$69 million for commercial improvements. The table provides a breakdown of the anticipated timing of expenditures over the development period. All of the project cost items listed in *Table 3-8* will be funded by Hiluhilu Development LLC. No public funds are included in the table.

3.4.1 County of Hawai'i Revenues

According to the THK study (2003), the County of Hawai'i can expect to receive approximately \$4.3 million in annual real estate tax revenues. At buildout of the commercial areas (2014), annual real estate revenues would total \$6.4 million.

In addition to real estate taxes, other revenues include fuel taxes, utility taxes, license fees, permits, and state and federal grants. Other revenues historically represent 35% of total county revenues, with property taxes at 65% of the total. With this model, it is estimated that total revenue after residential and commercial buildout will be \$9.8 million.

THK also estimates that county expenses to provide services including law enforcement are approximately \$1,050 per person with an inflation factor of 4%. County of Hawai'i expenses to serve the Palamanui development project will be \$3.9 million in 2010 and \$4.5 million by 2014. Expenses are based on current county expenses per person. The Palamanui development will provide significant infrastructure improvements that will serve the entire community, and many of these improvements will not require county maintenance. Therefore, actual county costs could be less than the amounts estimated. Moreover, THK calculates that the County of Hawai'i will have a cumulative surplus of \$7.5 million by 2010 (residential buildout), and this surplus will grow to cumulative \$25.5 million by year 2014 (commercial buildout). Revenues and costs to the County of Hawai'i are illustrated in *Table 3-9*.

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	Assumptions	2003	2004	2005	2006	2007	2008	2009	2010	Total
Inflation Factor		1.00	1.02	1.04	1.06	1.08	1.10	1.13	1.15	
Infrastructure & Development Costs	2%									
Queen K Intersection		\$ -	\$ 1,020	\$ 1,365	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,385
Roads		\$ -	\$ 1,020	\$ 3,121	\$ 1,413	\$ -	\$ -	\$ -	\$ -	\$ 5,554
Storm Drain Drywells		\$ -	\$ 696	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 696
Sewer pipe w/manholes		\$ -	\$ 1,020	\$ 3,121	\$ 1,120	\$ -	\$ -	\$ -	\$ -	\$ 5,261
Sewage Treatment Plant		\$ -	\$ 2,040	\$ 2,081	\$ -	\$ 2,165	\$ 2,208	\$ -	\$ -	\$ 8,494
Water lines		\$ -	\$ 1,020	\$ 1,843	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,863
Reservoirs		\$ -	\$ -	\$ 1,040	\$ 2,122	\$ 1,483	\$ -	\$ -	\$ -	\$ 4,646
Power & Tel-undergrd		\$ -	\$ 1,020	\$ 2,081	\$ 918	\$ -	\$ -	\$ -	\$ -	\$ 4,019
Street lights		\$ -	\$ -	\$ 556	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 556
Golf Course w/clubhse		\$ -	\$ 6,120	\$ 12,485	\$ 9,551	\$ -	\$ -	\$ -	\$ -	\$ 28,156
<i>Subtotal:</i>		\$ -	\$ 13,956	\$ 27,693	\$ 15,124	\$ 3,648	\$ 2,208	\$ -	\$ -	\$ 62,629
Design, Permits, Engineering	12.0%	\$ -	\$ 1,675	\$ 3,323	\$ 1,815	\$ 438	\$ 265	\$ -	\$ -	\$ 7,516
Contingency @	10.0%	\$ -	\$ 1,388	\$ 2,769	\$ 1,512	\$ 365	\$ 221	\$ -	\$ -	\$ 6,263
Total Infrastructure Costs:		\$ -	\$ 17,028	\$ 33,785	\$ 18,452	\$ 4,450	\$ 2,694	\$ -	\$ -	\$ 76,408
On-Going Maintenance, Operations, and Management Costs										
General & Administration		\$ 600	\$ 2,500	\$ 2,500	\$ 2,000	\$ 1,500	\$ 1,000	\$ 750	\$ 250	\$ 11,100
Common Area / Security/ Homeowner Services		\$ -	\$ -	\$ 1,912	\$ 1,664	\$ 1,327	\$ 976	\$ 528	\$ -	\$ 6,409
Total On-Going Costs:		\$ 600	\$ 2,500	\$ 4,412	\$ 3,664	\$ 2,827	\$ 1,976	\$ 1,279	\$ 250	\$ 17,509
PROJECT COSTS:		\$ 600	\$ 19,528	\$ 38,198	\$ 22,116	\$ 7,277	\$ 4,670	\$ 1,279	\$ 250	\$ 93,916
Direct Parcel Costs										
Sales and Marketing		\$ -	\$ -	\$ 1,093	\$ 2,725	\$ 3,472	\$ 3,584	\$ 3,093	\$ 2,811	\$ 16,778
On Sites		\$ -	\$ 2,907	\$ 4,682	\$ 5,518	\$ 4,817	\$ 4,913	\$ 4,505	\$ -	\$ 27,342
Residence and Commercial Construction		\$ -	\$ -	\$ 3,569	\$ 12,289	\$ 20,255	\$ 19,029	\$ 17,153	\$ 21,719	\$ 94,015
Total Parcel Costs		\$ -	\$ 2,907	\$ 8,250	\$ 17,807	\$ 25,072	\$ 23,842	\$ 21,658	\$ 21,719	\$ 121,356
All Costs		\$ 600	\$ 22,433	\$ 46,448	\$ 39,923	\$ 32,350	\$ 28,612	\$ 22,937	\$ 21,969	\$ 215,272

Note: Commercial Construction includes University Village Leases and Commercial Space
Source: Hituhilu Development; Knowledge Based Consulting Group

Unit (\$000)

Table 3-8
Summary of Project Costs

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3.4.2 State of Hawai'i Revenues

Revenues to the State of Hawai'i will be generated from excise taxes, accommodations tax, transfer taxes, utility taxes, and income taxes on individual and businesses. These revenues go directly to the State General Fund. Sales per square foot on \$300 to \$400 are expected for the commercial areas. Other state taxes include a 0.5% excise tax on construction materials, a 1/10 of one percent transfer of fee interest, including leases of five years or greater, state corporate and individual income taxes, state utility taxes, and liquor taxes. Hotel taxes on the University Inn revenues should add another \$834,000 annually in State revenues. This revenue is allocated to a variety of funds, with a portion (18.6% of hotel fund) returned to the County of Hawai'i. As shown in *Table 3-10*, annual state revenues from residents is expected to reach \$3.9 million in 2010, while revenues from commercial operations should reach \$4.7 million at buildout in 2014. Over the life of the project, state revenues should exceed expenditures by \$17.7 million.

3.4.3 Job Creation

Ongoing employment in the commercial, business, and educational activities at Palamanui is expected to reach 1,841 jobs at full buildout in 2014. *Table 3-11* estimates job creation at Palamanui.

3.4.4 Construction Impacts at Palamanui

Total construction spending at Palamanui is expected to be just over \$304 million. This spending supports over 2,500 person years of construction employment over the life of the project. *Table 3-12* illustrates estimated total construction spending.

In addition to the creation of construction jobs, the State of Hawai'i will receive excise tax revenue on finished development and building materials, conveyance taxes, and income taxes on construction wages. *Table 3-13* shows the estimated additional \$13.9 million in State revenue over the life of the project.

In addition, the construction expenditures of \$305 million on the Palamanui project will result in an increase in total output of \$375 million, an additional 3,700 persons years of employment, and an additional \$175 million in household income.

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	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Real Estate Taxes												
Residential												
Permanent (w/ Owner Occupant Allowance)	\$ -	\$ -	\$ 97,247	\$ 258,460	\$ 923,264	\$ 1,570,951	\$ 2,186,813	\$ 2,713,038	\$ 3,129,180	\$ 3,574,272	\$ 3,717,243	\$ 3,865,933
Seasonal	\$ -	\$ -	\$ 17,717	\$ 47,087	\$ 168,202	\$ 288,199	\$ 398,398	\$ 494,267	\$ 570,081	\$ 651,169	\$ 677,215	\$ 704,304
Commercial	\$ -	\$ -	\$ 85,230	\$ 313,007	\$ 579,036	\$ 716,048	\$ 877,111	\$ 1,092,042	\$ 1,218,292	\$ 1,384,438	\$ 1,578,329	\$ 1,812,053
Total Real Estate Taxes	\$ -	\$ -	\$ 200,193	\$ 618,554	\$ 1,670,502	\$ 2,573,197	\$ 3,462,322	\$ 4,299,348	\$ 4,917,553	\$ 5,609,879	\$ 5,972,788	\$ 6,382,290
Other Revenue	\$ -	\$ -	\$ 107,796	\$ 333,067	\$ 899,499	\$ 1,385,554	\$ 1,864,323	\$ 2,315,029	\$ 2,647,907	\$ 3,020,697	\$ 3,218,109	\$ 3,436,610
Total Revenue	\$ -	\$ -	\$ 307,990	\$ 951,621	\$ 2,570,002	\$ 3,958,751	\$ 5,326,646	\$ 6,614,377	\$ 7,565,460	\$ 8,630,576	\$ 9,190,897	\$ 9,818,900
Estimated Population												
Single Family												
Permanent	-	-	180	432	702	900	1,152	1,404	1,404	1,404	1,404	1,404
Seasonal	-	-	20	48	78	100	128	156	156	156	156	156
Patio Home	-	-	-	-	-	-	-	-	-	-	-	-
Permanent	-	-	-	67	133	200	266	266	266	266	266	266
Seasonal	-	-	-	7	15	22	30	30	30	30	30	30
Townhome/Condo												
Permanent	0	0	0	0	63	189	252	378	378	378	378	378
Seasonal	0	0	0	0	7	21	28	42	42	42	42	42
Apartments												
Permanent	0	0	0	0	243	243	243	243	243	243	243	243
Seasonal	0	0	0	0	27	27	27	27	27	27	27	27
Student	0	0	0	0	150	150	150	150	150	150	150	150
Senior	0	0	0	0	0	120	120	120	120	120	120	120
Total Population												
Cost to Serve (per person)	\$ 1,050	\$ 1,092	\$ 1,136	\$ 1,181	\$ 1,228	\$ 1,277	\$ 1,329	\$ 1,382	\$ 1,437	\$ 1,494	\$ 1,554	\$ 1,616
Total Expenditure	\$ -	\$ -	\$ 227,136	\$ 654,333	\$ 1,741,802	\$ 2,519,201	\$ 3,193,290	\$ 3,890,847	\$ 4,046,585	\$ 4,208,448	\$ 4,376,786	\$ 4,551,858
Surplus or Deficit												
Annual	\$ -	\$ -	\$ 80,854	\$ 297,288	\$ 828,199	\$ 1,439,559	\$ 2,143,356	\$ 2,723,430	\$ 3,518,875	\$ 4,422,128	\$ 4,812,111	\$ 5,267,042
Cumulative	\$ -	\$ -	\$ 80,854	\$ 378,141	\$ 1,206,341	\$ 2,645,900	\$ 4,789,257	\$ 7,512,686	\$ 11,031,561	\$ 15,453,689	\$ 20,265,800	\$ 25,532,842

Unit (\$0)

Table 3-9

Revenues and Costs to the County of Hawai'i

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	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Revenues From Residents												
Household Income (\$000)	\$ -	\$ -	\$ 2,850	\$ 7,980	\$ 24,510	\$ 35,625	\$ 41,895	\$ 48,165	\$ 48,165	\$ 48,165	\$ 48,165	\$ 48,165
Excise Tax	-	-	\$ 74,100	\$ 207,480	\$ 637,260	\$ 926,250	\$ 1,089,270	\$ 1,252,290	\$ 1,252,290	\$ 1,252,290	\$ 1,252,290	\$ 1,252,290
Income Tax	-	-	\$ 85,500	\$ 239,400	\$ 735,300	\$ 1,068,750	\$ 1,256,850	\$ 1,444,950	\$ 1,444,950	\$ 1,444,950	\$ 1,444,950	\$ 1,444,950
Other Revenues	-	-	\$ 84,000	\$ 232,680	\$ 595,560	\$ 828,240	\$ 1,006,320	\$ 1,182,720	\$ 1,182,720	\$ 1,182,720	\$ 1,182,720	\$ 1,182,720
Excise Tax on Rents	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	\$ -	\$ -	\$ 243,600	\$ 679,560	\$ 1,968,120	\$ 2,833,840	\$ 3,370,800	\$ 3,898,320	\$ 3,898,320	\$ 3,898,320	\$ 3,898,320	\$ 3,898,320
Revenues From Commercial Sources												
University Village Inn	-	-	-	-	-	-	-	-	-	-	-	-
State Accommodations Tax - General Fund	-	-	\$ 232,315	\$ 241,608	\$ 251,272	\$ 261,323	\$ 271,776	\$ 282,647	\$ 293,953	\$ 282,647	\$ 293,953	\$ 305,711
State Accommodations Tax - Hotel Fund	-	-	\$ 404,876	\$ 421,071	\$ 437,914	\$ 455,431	\$ 473,648	\$ 492,594	\$ 492,594	\$ 492,594	\$ 512,298	\$ 532,790
Commercial Operations (Excise Tax on Sales)	-	-	-	-	-	-	-	-	-	-	-	-
Village Commercial	-	-	\$ 320,000	\$ 320,000	\$ 320,000	\$ 640,000	\$ 640,000	\$ 1,280,000	\$ 1,280,000	\$ 1,280,000	\$ 1,280,000	\$ 1,280,000
Community Commercial	-	-	-	-	-	-	-	-	-	-	-	-
Golf Course	-	-	\$ 40,000	\$ 83,200	\$ 86,528	\$ 89,989	\$ 93,569	\$ 97,332	\$ 101,226	\$ 105,275	\$ 109,486	\$ 113,865
Commercial Operations (Excise Tax on Rents)	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	\$ -	\$ -	\$ 7,200	\$ 7,200	\$ 16,200	\$ 21,600	\$ 27,900	\$ 38,250	\$ 43,200	\$ 49,950	\$ 57,600	\$ 66,600
Total State Revenues	\$ -	\$ -	\$ 40,000	\$ 410,400	\$ 1,059,918	\$ 1,414,768	\$ 1,750,675	\$ 2,732,336	\$ 3,069,849	\$ 3,530,465	\$ 4,053,336	\$ 4,698,965
Total Population	-	-	200	554	1,418	1,972	2,396	2,816	2,816	2,816	2,816	2,816
Cost to Serve (per person)	\$ 1,200	\$ 1,248	\$ 1,238	\$ 1,350	\$ 1,404	\$ 1,460	\$ 1,518	\$ 1,578	\$ 1,642	\$ 1,708	\$ 1,776	\$ 1,847
Total Expenditure	\$ -	\$ -	\$ 259,584	\$ 747,610	\$ 1,990,631	\$ 2,879,087	\$ 3,638,045	\$ 4,446,797	\$ 4,624,669	\$ 4,809,655	\$ 5,002,041	\$ 5,202,123
Net Surplus (Deficit)	\$ -	\$ -	\$ 24,016	\$ 342,150	\$ 1,037,408	\$ 1,371,021	\$ 1,483,430	\$ 2,183,859	\$ 2,343,501	\$ 2,619,130	\$ 2,949,614	\$ 3,395,162
Cumulative	\$ -	\$ -	\$ 24,016	\$ 366,166	\$ 1,403,575	\$ 2,774,595	\$ 4,258,025	\$ 6,441,884	\$ 8,785,385	\$ 11,404,515	\$ 14,354,130	\$ 17,749,292

Unit (\$0)

Source: THK Associates, Knowledge Based Consulting Group

Table 3-10

Ongoing Revenues and Costs to the State of Hawai'i

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	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Square Feet per employee												
Commercial Uses												
University Leases				60	60	60	60	120	120	120	120	120
Village Commercial				63	63	125	125	251	251	251	251	251
University Village Inn				0	60	60	60	60	60	60	60	60
Medical Campus				75	150	225	300	300	300	300	300	300
R&D				0	17	33	58	92	142	208	283	367
Community Commercial				0	0	0	78	157	235	345	470	627
Golf Course				20	46	46	46	46	46	46	46	46
Total Direct Employment				20	244	395	728	1,025	1,153	1,330	1,530	1,770
Community Maint. and Admin				3	10	16	22	29	41	53	61	71
Total Ongoing Employment				23	253	411	757	1,066	1,199	1,383	1,591	1,841

Unit (# of jobs)

Source: THK Associates, Knowledge Based Consulting Group

Table 3-11
Job Creation for Palamanui

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	Assumptions	2003	2004	2005	2006	2007	2008	2009	2010	Total
Inflation Factor	2%	1.00	1.02	1.04	1.06	1.08	1.10	1.13	1.15	
Infrastructure & Development Costs										
Queen K Intersection		\$ -	\$ 1,020	\$ 1,365	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,385
Roads		\$ -	\$ 1,020	\$ 3,121	\$ 1,413	\$ -	\$ -	\$ -	\$ -	\$ 5,554
Storm Drain Drywells		\$ -	\$ 696	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 696
Sewer pipe w/manholes		\$ -	\$ 1,020	\$ 3,121	\$ 1,120	\$ -	\$ -	\$ -	\$ -	\$ 5,261
Sewage Treatment Plant		\$ -	\$ 2,040	\$ 2,081	\$ -	\$ 2,165	\$ 2,208	\$ -	\$ -	\$ 8,494
Water lines		\$ -	\$ 1,020	\$ 1,843	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,863
Reservoirs		\$ -	\$ -	\$ 1,040	\$ 2,122	\$ 1,483	\$ -	\$ -	\$ -	\$ 4,646
Power & Tel--undergrd		\$ -	\$ 1,020	\$ 2,081	\$ 918	\$ -	\$ -	\$ -	\$ -	\$ 4,019
Street lights		\$ -	\$ -	\$ 556	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 556
Golf Course w/clubhse		\$ -	\$ 6,120	\$ 12,485	\$ 9,551	\$ -	\$ -	\$ -	\$ -	\$ 28,156
<i>Subtotal:</i>		\$ -	\$ 19,956	\$ 27,693	\$ 15,124	\$ 3,648	\$ 2,208	\$ -	\$ -	\$ 62,629
Design, Permits, Engineering	12.0%	\$ -	\$ 1,875	\$ 3,323	\$ 1,815	\$ 438	\$ 265	\$ -	\$ -	\$ 7,516
Contingency @	10.0%	\$ -	\$ 1,396	\$ 2,769	\$ 1,512	\$ 365	\$ 221	\$ -	\$ -	\$ 6,263
Total Infrastructure Costs:		\$ -	\$ 17,026	\$ 33,785	\$ 18,452	\$ 4,450	\$ 2,694	\$ -	\$ -	\$ 76,408
On-Going Maintenance, Operations, and Management Costs										
General & Administration		\$ 600	\$ 2,500	\$ 2,500	\$ 2,000	\$ 1,500	\$ 1,000	\$ 750	\$ 250	\$ 11,100
Common Area / Security/ Homeowner Services		\$ -	\$ -	\$ 1,912	\$ 1,684	\$ 1,327	\$ 976	\$ 529	\$ -	\$ 6,409
Total On-Going Costs:		\$ 600	\$ 2,500	\$ 4,412	\$ 3,684	\$ 2,827	\$ 1,976	\$ 1,279	\$ 250	\$ 17,509
PROJECT COSTS:		\$ 600	\$ 19,526	\$ 38,198	\$ 22,116	\$ 7,277	\$ 4,670	\$ 1,279	\$ 250	\$ 93,916
Direct Parcel Costs										
Sales and Marketing		\$ -	\$ -	\$ 1,093	\$ 2,725	\$ 3,472	\$ 3,584	\$ 3,093	\$ 2,811	\$ 16,778
On Sites		\$ -	\$ 2,907	\$ 4,682	\$ 5,518	\$ 4,817	\$ 4,913	\$ 4,505	\$ -	\$ 27,342
Residence and Commercial Construction		\$ -	\$ -	\$ 3,569	\$ 12,289	\$ 20,255	\$ 19,029	\$ 17,153	\$ 21,719	\$ 94,015
Total Parcel Costs		\$ -	\$ 2,907	\$ 8,250	\$ 17,807	\$ 25,072	\$ 23,942	\$ 21,658	\$ 21,719	\$ 121,356
All Costs		\$ 600	\$ 22,433	\$ 48,448	\$ 39,923	\$ 32,350	\$ 28,612	\$ 22,937	\$ 21,869	\$ 215,272

Unit (\$000)

Note: Commercial Construction includes University Village Leases and Commercial Space
Source: Hiltahilu Development; Knowledge Based Consulting Group

Table 3-12
Total Construction Spending Estimates

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	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Developer Construction													
Total Infrastructure Costs:													
Labor as % of Const Cost	42%												
Jobs at Average Wage of	\$ 52,000												
Total Parcel Costs													
Labor as % of Const Cost	40%												
Jobs at Average Wage of	\$ 52,000												
Bulldozer of Residential Rentals													
Apartments													
Intl. Student Housing													
Senior Housing													
Total													
Construction Cost	\$ 80,000												
Labor as % of Const Cost	42%												
Jobs at Average Wage of	\$ 52,000												
Bulldozer of Commercial Area													
University Village Inn													
Medical Campus													
R&D													
Community Commercial													
Total													
Construction Cost	\$ 115												
Labor as % of Const Cost	42%												
Jobs at Average Wage of	\$ 52,000												
Total Construction Jobs													
On-Going Developer Costs:													
Labor as % of Ongoing Cos	60%												
Jobs at Average Wage of	\$ 35,000												
Total Construction and Developer Emplo													
Total Construction Value	\$ 600	\$ 22,433	\$ 48,448	\$ 48,823	\$ 50,950	\$ 39,612	\$ 30,987	\$ 30,594	\$ 6,325	\$ 8,625	\$ 9,775	\$ 11,500	\$ 304,672
Employment	10	203	412	405	428	329	254	241	51	70	79	93	2,973

Unit (\$000)

Table 3-13

Construction and Project Development Tax

Section 4.0
Environmental Setting

4.0 ENVIRONMENTAL SETTING

This section presents background information on the existing natural and man-made environment. Utilizing this background, the proposed project is evaluated for its potential to generate significant environmental impacts, which are reviewed in Section 6.0. Technical studies have been prepared to analyze the existing environmental conditions and the potential impacts on the environment that could be generated by the proposed project. Findings of these reports are summarized in this section with the full consultant studies presented in the Appendices.

4.1 REGIONAL AND SITE OVERVIEW

The mokupuni, or island of Hawai'i, is the largest island in the Hawaiian chain comprised of a land area of 4,028 square miles. According to U.S. Census 2000 data, the population of 148,677 people on the island of Hawai'i represents approximately 12% of the entire state population of 1.2 million people.

This project is located in West Hawai'i. The districts of West Hawai'i are South Kona, North Kona, South Kohala, and North Kohala. The property to the south of the subject parcel is owned by the University of Hawai'i and the State of Hawai'i Department of Land and Natural Resources (DLNR) and the Department of Hawaiian Home Lands (DHHL). The adjacent mauka or east property is the Mākālei Estates agricultural subdivision with various property owners. Queen Ka'ahumanu Highway serves as the western boundary of the property. Across the highway is the Kona International Airport at Keāhole which serves West Hawai'i with several direct international flights as well as national and inter-island routes. To the north, the property is further bounded by vacant lands owned by the State of Hawai'i. Kekaha Kai State Park, a large regional coastal state park of approximately 1700 acres is located north of the airport and makai of the Palamanui site.

The project site consists of approximately 725.2 acres of vacant land mauka of Queen Ka'ahumanu Highway and makai of Mākālei Estates in North Kona. The site is located within the ahupua'a of Kau. The property is privately owned by the Hiluhilu Development LLC. See Figure 1-1 for location map.

4.2 HISTORICAL PERSPECTIVE

4.2.1 Early History

The following summaries are based on the traditional and historical literature review and the ethnographic data and analyses. These summaries condense the information from the Cultural Impact Study, and also serve to focus on a few significant individuals and events in North Kona's history in relation to Kau lands, as well as give a broad overview of land and water resources and uses in the general area as they reflect cultural practices. The Cultural Impact Study is based on two guiding documents, Act 50, and OEQC Guidelines, as well as the Criteria for Historic Preservation (see Appendix D).

Summary of Significant People and Events

According to traditional and historical material, the North Kona District has gone through a number of significant changes, and witnessed the coming and going of many significant people over time. Some of these people contributed substantially not only to the history of North

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Kona, but to the Island of Hawai'i and the rest of the Hawaiian Islands. There were several people and events noted in the oral histories and later recorded by explorers, missionaries, native Hawaiian scholars and ethno-historians, from the time of Pa'ao to Kamehameha I who caused the various island kingdoms to come under one realm. These significant people lived in North Kona and vicinity, and were responsible for land modifications, shifts in polity and commerce, and the gene pool of Hawai'i's ali'i and monarchs. Some of these people and events are noted below.

Mythical Entities

The most significant mythical entity to impact North Kona, the lands of Kekaha and Kau, as well as greater Hawai'i Island, was the volcano or fire goddess Pele, who left evidence of her visits in the form of pu'u which dot the landscape, and in her monumental lava flows, Pele annihilated villages, shelters, trails, temples, shrines, water sources, fishponds, pools, hōlua slides, and countless other structures and features, forever changing the landscape and the lives affected by the destruction. Even those living outside the direct flows of lava were affected as when lava covered fishponds and pools, and flowed into the marine environment. The people had to alter their lifestyles, look for other resources and start over again. Archaeologists, with the help of oral historians can often reconstruct the lives of the ancient ones through the clues left by abandoned shelters, house sites, sacred places and remains of the food they ate. This cannot be done in the places visited by Pele; for those places, the few stories that remain must suffice. However, the effects of the flows of Pele were not entirely negative. They created more land mass, new lava tube shelters and rugged beauty unique to Kekaha.

Ali'i Nui

One of the first legendary Ali'i nui was the priest Pa'ao who is said by some to have arrived on Hawai'i Island around AD 1100-1200. However, according to some traditional genealogy chants, the period would be around AD 480 (James 1998:143-144). In the oral histories, Pa'ao is credited with constructing at least three heiau (luakini or temples of human sacrifice) that radically changed the religious system and political structure of the people of Hawai'i. Pa'ao not only brought about a significant change in religious practices, he also brought high chief Pili to rule in place of chiefs he believed had lost their mana or power because of too many intermarriages with commoners and/or ineffective rule. His new system introduced the concept of hierarchical (ali'i) rule to the islands and a new order of kahuna or priests.

Many battles took place across this land as relative fought relative for supreme rule. Among the relatively recent names that stand out are those of Kalani'opu'u and his nephew Kamehameha I. Kamehameha I not only successfully dominated the local island polities, but also went on to take power on the neighboring islands as well, putting him in a position that only Kualii was said to have done; that of having all the island polities under one rule. Kamehameha I used foreign weapons and foreign advisors, as well as powerful kahuna (priests). Two of these were Pu'ou and his son Hewahewa. The lands of Kekaha are said by some to have been kahuna lands; places where kahuna resided, and did their training. Although the common translation of "kahuna" is priest, "kahuna" are actually masters who studied all their lives in their particular craft and arts. Some were astronomers, some water managers; others were architects in the building of temples or fishponds. Pu'ou and Hewahewa were masters of many arts, and were considered kahuna nui, the highest rank of a kahuna.

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Kamehameha I chose to live in Kailua-Kona during the final years of his life. After he died in 1819, his son, Liholiho (who also lived nearby) chose to capitulate to his mother, Queen Ke'ōpūolani and his Kuhina Nui (co-ruler) Queen Ka'ahumanu, and break the 'ai kapu. This signaled the end of the old way, the religion of Pa'ao. Hewahewa, who served as guardian and priest for Liholiho, resigned his position and helped the missionaries. Hewahewa eventually left Hawai'i Island and moved to Waimea, Oahu.

The lands of Kau and other lands in the vicinity were passed down to Hewahewa, from his father. Hewahewa and his father were descendants of Pa'ao, the first kahuna to honor the war god, Kūka'ilimoku.

People in the Historic Period

In regard to the lands of Kau, the most significant person(s) from the Post-Contact times would be John Avery Maguire and his wife Luka, founders of Hu'ehu'e Ranch. Historically, the land of Kau is more associated with them, and Paalua who also lived during the Post-Contact/Historic Period, than any other significant persons in Kona history.

4.2.2 Land Use History

The following information is a brief chronological land use history of this property from 1978 to present:

May 8, 1978: Date of the original Change of Zone application (REZ 425) from Charles McCarthy requesting the 732+ acre area be rezoned from Unplanned to Agricultural-3 acres (A-3a) in order to facilitate the development of 203 three-acre lots as part of an agricultural park.

February 11, 1982: Decision by the Planning Commission on the appeal of the Planning Director's denial. The Commission reversed the Director's denial decision and recommended approval of the Change of Zone request to the County Council.

February 15, 1983: Ordinance No. 850 approved by the County Council to rezone a portion of the subject property from Unplanned to A-3a.

Time extensions were filed by McCarthy to the County from 1983-1987.

February 29, 1988: County Council approval of amendment to Ordinance No. 850. New Ordinance is 88-23.

September 27, 1991: Letter from Nansay Hawai'i Inc. requesting a time extension to Condition H of Ordinance 88-23 relating to final subdivision plat approval; informing the Planning Department that it had acquired the property in 1989.

October 14, 1992: Nansay Hawai'i requested amendments to Conditions C, E, H, and I of Ordinance 88-23. The request for amendment was made because 1) Nansay's plans had changed somewhat from the original applicant's in 1983, 2) the General Plan's LUPAG Map had, since the approval of the original zoning request, changed the classification of the subject property from Orchards and Extensive Agriculture to Urban Expansion, and 3) the Keāhole to Kailua Development Plan had been adopted indicating residential uses for the property.

December 28, 1992: Date of submittal of Subdivision Application 93-9 for the first increment of the project consisting of 81 3-acre plus lots and one remaining 725-acre lot. The proposed subdivision of the Lands of Kau is identified at "Mākālei Plantations."

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March 17, 1993: Planning Department granted tentative subdivision plat approval.

May 12, 1993: Effective date of Ordinance 93-45 amending Conditions C, E, H and I of Ordinance 88-23.

A time extension was applied for the Mākālei Plantations subdivision plat from 1994-1995.

January 31, 1995: Letter from Nansay Hawai'i, Inc. requesting a one-year time extension to secure final subdivision approval.

April 5, 1995: Letter from the Planning Director to Nansay Hawai'i, Inc., informing the applicant that any further extensions of time to the conditions of approval will be considered by the County Council.

August 9, 1995: Final Plan approval issued to Mākālei Plantations for the Kona Well No. 2 Development consisting of a .10 MG reservoir and well site and a .30 MG reservoir well site.

October 18, 1999: Letter from the Planning Department to Guido Giacometti, representative for Hiluhilu Development, LLC, granting approval of construction plans for Phase 1 of the proposed subdivision Mākālei Plantations.

November 5, 1999: The Hawai'i County Planning Commission approved a Use Permit (#180) allowing the development of an 18-hole golf course with a clubhouse and driving range, and related improvements. This permit is active. Petitioner has submitted a petition to the Land Use Commission for the review of a State Land Use Boundary Amendment.

4.3 CLIMATE

The climate is hot and arid. Southerly and southwesterly winds predominate in the project area as a result of shielding effect from landmasses such as Mauna Loa, Mauna Kea and Mt. Hualālai. Weather data recorded at Keāhole Point and Kona International Airport at Keāhole indicate that calm conditions prevail approximately 28.8 and 23.6 percent of the time, respectively.

Rainfall at the project site tends to occur during the late afternoon and evening periods. The project site lies well below the high rainfall belt (with peak average rainfall of 75 inches a year) located in a one to two mile wide area between elevations of 2,000 and 3,000 feet in West Hawai'i. Average annual precipitation recorded at the Kailua monitoring stations (located at an elevation of 30 feet) is 25 inches. Rainfall on the project site is projected at less than 20 inches per year. See *Figure 4-1* for rainfall.

Average annual temperature in West Hawai'i is 78 degrees F and relative humidity ranges from between 71 and 77 percent year round. Winds follow a typical diurnal pattern with on-shore winds (westerly and southwesterly) in the morning and early afternoon hours. Cloudbanks often form along the higher elevation slopes during the day, and offshore breezes occur in the late afternoon and evening. Typical wind velocities range from 3 to 14 knots.

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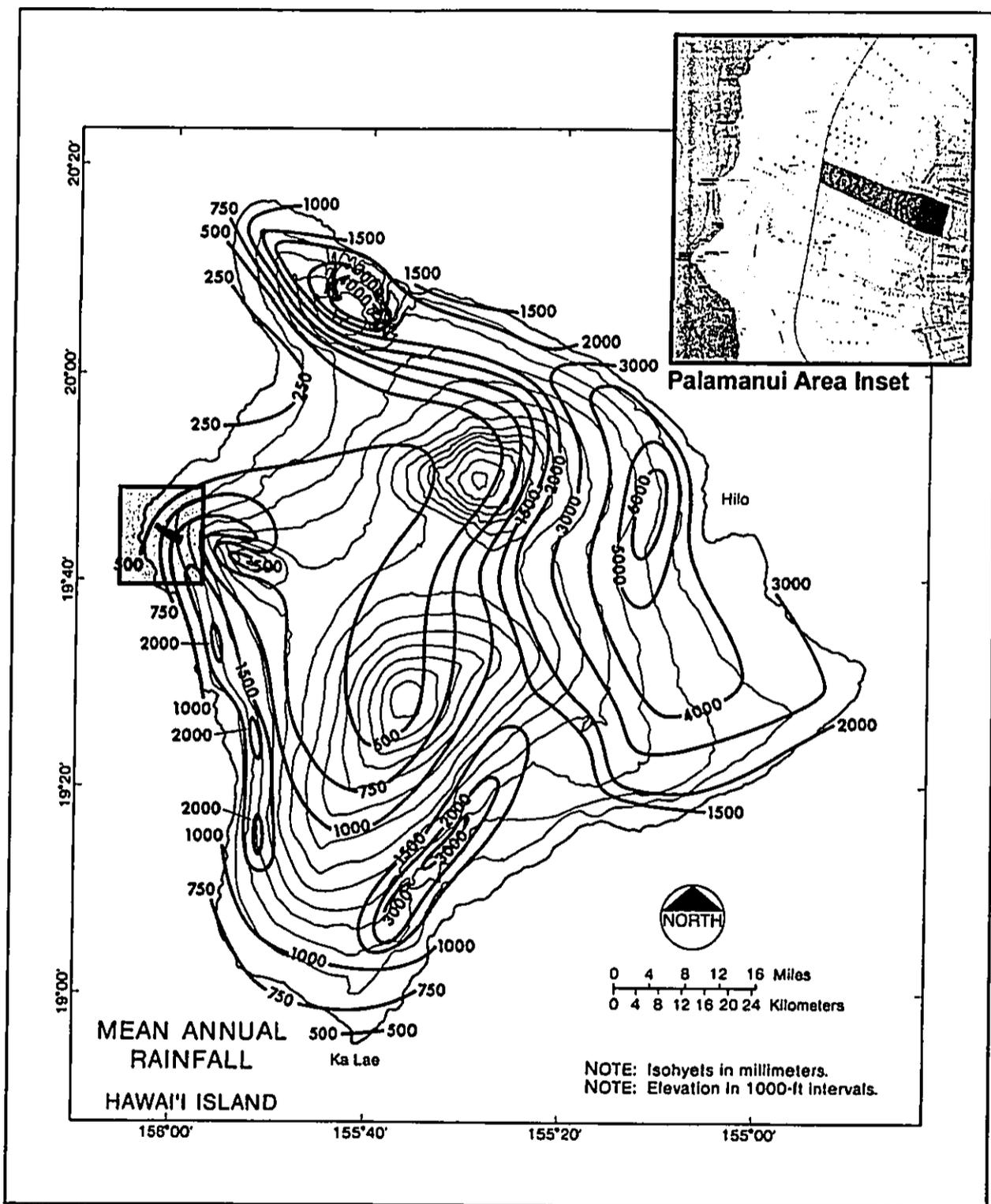


Figure 4-1

Hawaii Island Average Rainfall

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4.4 AIR QUALITY

Except for periodic impacts from volcanic emission-created fog (vog) and possibly occasional localized impacts from traffic congestion, the present air quality of the project area is believed to be relatively good. The limited air quality data that are available for the area from the Department of Health indicate that (despite the vog) concentrations are well within state and national air quality standards. See *Appendix F* for details regarding the Air Quality Study (2003).

The climate of the project area is very much affected by its near coastal situation and by nearby mountains. Winds are predominantly light and variable, although Kona storms generate occasional strong winds from the south or southwest during winter. Temperatures in the project area are generally very consistent and moderate with average daily temperatures ranging from about 65°F to 85°F. The extreme minimum temperature recorded at the nearby Old Kona Airport is 47°F, while the extreme maximum temperature is 93°F. Average rainfall in the area amounts to about 25 inches with each month typically contributing about 2 inches.

The project site is located near the midpoint of the western coast of the island of Hawai'i. Hawai'i lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high-pressure cell to the north and east. Nearly the entire western coast of the island of Hawai'i, however, is sheltered from the trade winds by high mountains, except when unusually strong trade winds sweep through the saddle between the Kohala Mountains and Mauna Kea and reach some areas to the lee. Due to wind shadow effects caused by the terrain, winds in the project area are predominantly light and variable. Local winds such as land/sea breezes and/or upslope/downslope winds dominate the wind pattern for the area. During the daytime, winds typically move onshore because of seabreeze and/or upslope effects. At night, winds generally are land breezes and/or drainage winds that move downslope and out to the sea. During the winter, occasional strong winds from the south or southwest occur in association with the passage of winter storm systems.

Air pollution emissions from motor vehicles, the formation of photochemical smog and smoke plume rise all depend in part on air temperature. Colder temperatures tend to result in higher emissions of contaminants from automobiles but lower concentrations of photochemical smog and ground-level concentration of air pollution from elevated plumes. In Hawai'i, the annual and daily variation of temperature depends to a large degree on elevation above sea level, distance inland and exposure to the trade winds. Average temperatures at locations near sea level generally are warmer than those at higher elevations. Areas exposed to the trade winds tend to have the least temperature variation, while inland and leeward areas often have the most.

Rainfall can have a beneficial affect on the air quality of an area in that it helps to suppress fugitive dust emissions, and it also may "washout" gaseous contaminants that are water-soluble. The climate of the project area is wetter than might be expected for a leeward location. This is due to the persistent onshore and upslope movement of marine air caused by both eddy and seabreeze or mountain slope effects. Some of the rainfall occurs during summer afternoons and evenings as a result of this onshore and upslope movement of moisture-laden marine air, and some occurs in conjunction with winter storms. At the Old Kona Airport, average annual rainfall amounts to about 25 inches with each month registering about 2 inches. Rainfall at the project site is probably somewhat lower than this amount.

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Present air quality in the project area is mostly affected by air pollutants from vehicular, industrial, natural and/or agricultural sources. Much of the man-made particulate emissions on Hawai'i originate from area sources, such as the mineral products industry and agriculture. Man-made sulfur oxides are emitted almost exclusively by point sources, such as power plants and other fuel burning industries. Nitrogen oxides emissions emanate predominantly from area sources (mostly motor vehicle traffic), although industrial point sources contribute a significant share. The majority of carbon monoxide emissions occur from area sources (motor vehicle traffic), while hydrocarbons are emitted mainly from point sources.

It should be noted that Hawai'i Island is unique from other islands in the state in terms of the natural volcanic air pollution emissions that occur. Volcanic emissions periodically plague the project area. This is especially so since the latest eruption phase of the Kilauea Volcano began in 1983. Air pollution emissions from the Hawaiian volcanoes consist primarily of sulfur dioxide. After entering the atmosphere, these sulfur dioxide emissions are carried away by the wind and either washed out as acid rain or gradually transformed into particulate sulfates or acid aerosols. Although emissions from Kilauea are vented on the other side of a mountain barrier more than 50 miles east of the project site, the prevailing wind patterns eventually carry some of the emissions into the Kona area. These emissions can be seen in the form of the volcanic haze (vog) which persistently hangs over the area.

The major industrial source of air pollution in the project vicinity is Hawai'i Electric Light Company's Keāhole Power Plant, which is located about 1.5 miles to the south. Air pollution emissions from Keāhole Power Plant consist mostly of sulfur dioxide and oxides of nitrogen. Queen Ka'ahumanu Highway, which borders the project site on the makai side, is the region's major arterial roadway. Downslope winds during the morning will tend to carry emissions from motor vehicles traversing this roadway away from the project area, while afternoon onshore winds will carry emissions toward the project.

At this time, there are no reported measurements of lead, ozone, nitrogen dioxide or carbon monoxide in the project vicinity. These are primarily motor vehicle related air pollutants. Lead, ozone and nitrogen dioxide typically are regional scale problems. Concentrations of lead and nitrogen dioxide generally have not been found to exceed Air Quality Standards elsewhere in the state.

4.5 TOPOGRAPHY

The project site is situated within a long sloping ahupua'a on the southwestern slopes of Mt. Hualālai between the elevations of 150 feet above mean sea level (MSL) to 900 feet above MSL. The terrain at the project site slopes generally from northeast to southwest. Slopes vary from 5 to 10 percent, on average, but approach 15 % in isolated areas. The steeper sloped land is in Mākālei Estates (already developed into 3 acre lots), not the 725 acre project site. See Figure 4-2 for Slope Map.

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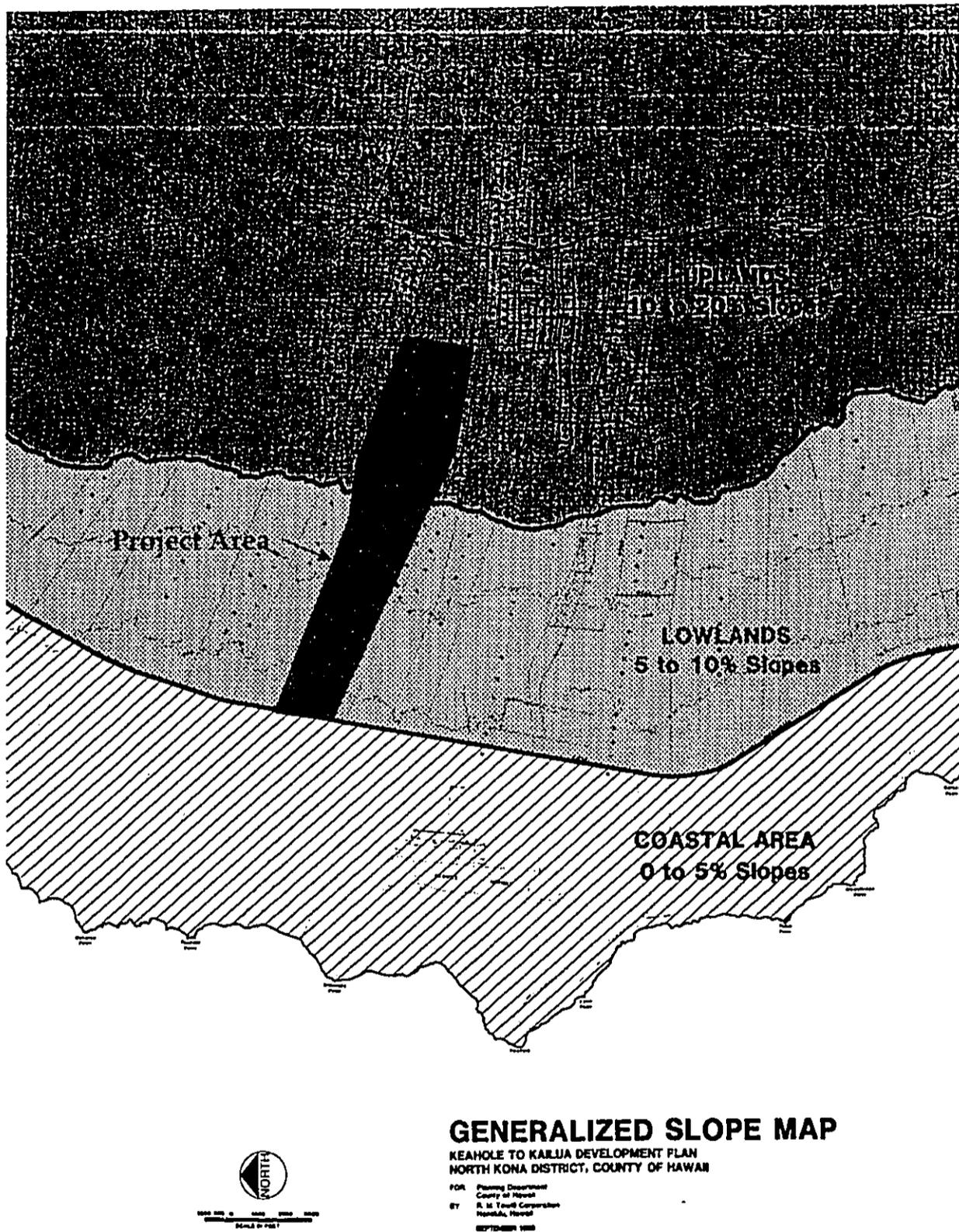


Figure 4-2
Slope Map

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4.6 VISUAL RESOURCES

The visual character of this area is defined by expanses of lava lands with clumps of scrub grass, small trees and shrubs, in general, appearing to be undeveloped land. The best views of the project site are from the vicinity of the Kona International Airport at Keāhole. On a clear day, the most expansive views from this vantage point span the western slopes of Mt. Hualālai including the project site and scattered pockets of urban development along Māmalahoa Highway and Ka'iminani Drive. *Figure 4-3* is a photo of the project area looking mauka.

4.7 GEOLOGY

The predominant natural force shaping the landscape of North Kona is Hualālai Volcano. The site is framed by one of the major flows from the 1801 eruption. These and prior flows have created a harsh landscape of great beauty. These multiple flows of differing ages overlapping each other create a layered landscape with different lava colors reflecting differences in age, chemical composition and the impact of subsequent weathering. This underlying complexity merges rock and sky, which reflects spirituality close to nature. These flows are excellent examples of the geological processes that have created the Hawaiian Islands.

The existing geomorphology in the project area is the product of large-scale eruptions from Mt. Hualālai – a now dormant shield volcano. Large-scale eruptions from this volcano may have ceased some 130,000 years ago; however, the most recent flank eruptions and lava flows occurred circa 1800-1801. The subsurface layer comprises a basalt formation.

Geologic conditions at the project site are characterized by multiple interbedded pāhoehoe and a'ā flows. A pāhoehoe lava flow hardens to form a generally smooth surface whereas the a'ā type forms splintered or jagged fragments. Both flow types can contain buried voids such as pockets, blisters, extensive lava tubes and tunnels that formed as molten rock cooled and residual lava drained from primary flow pathways. Numerous lava tubes and/or voids including several prominent lava tube features have been discovered in the vicinity of the project site, and it is likely that the project site contains lava tubes or void features.

4.8 SOILS

Based on soil types, rainfall patterns and the associated plant species, this parcel of the Lands of Kau can be broadly divided into three distinct sections: A. Upper Area (900 feet elevation), B. Middle Area, and C. Lower Area (200 feet elevation). Several sources of information on soils classification (Soil Survey, Island of Hawai'i), land use studies, and report on Agricultural Lands of Importance in the State of Hawai'i (ALISH), were also consulted. See *Figure 4-4* for ALISH map.

Upper Area:

This area appears to have been previously cleared. According to the Soil Survey of Island of Hawai'i by Sato, et. al. (1973), the upper area is dominated by Punalu'u soil series (extremely rocky peat [rPYD] 6-20% slope) with pockets of Kaimu soil series (extremely stony peat [rKED] 6-20% slope) and pāhoehoe land with some weathered volcanic ash and organic residues, which accumulated in low spots. Pockets of lava flows of a'ā [rLV] are also observed in this area.

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Figure 4-3

View From Project Area Looking Mauka

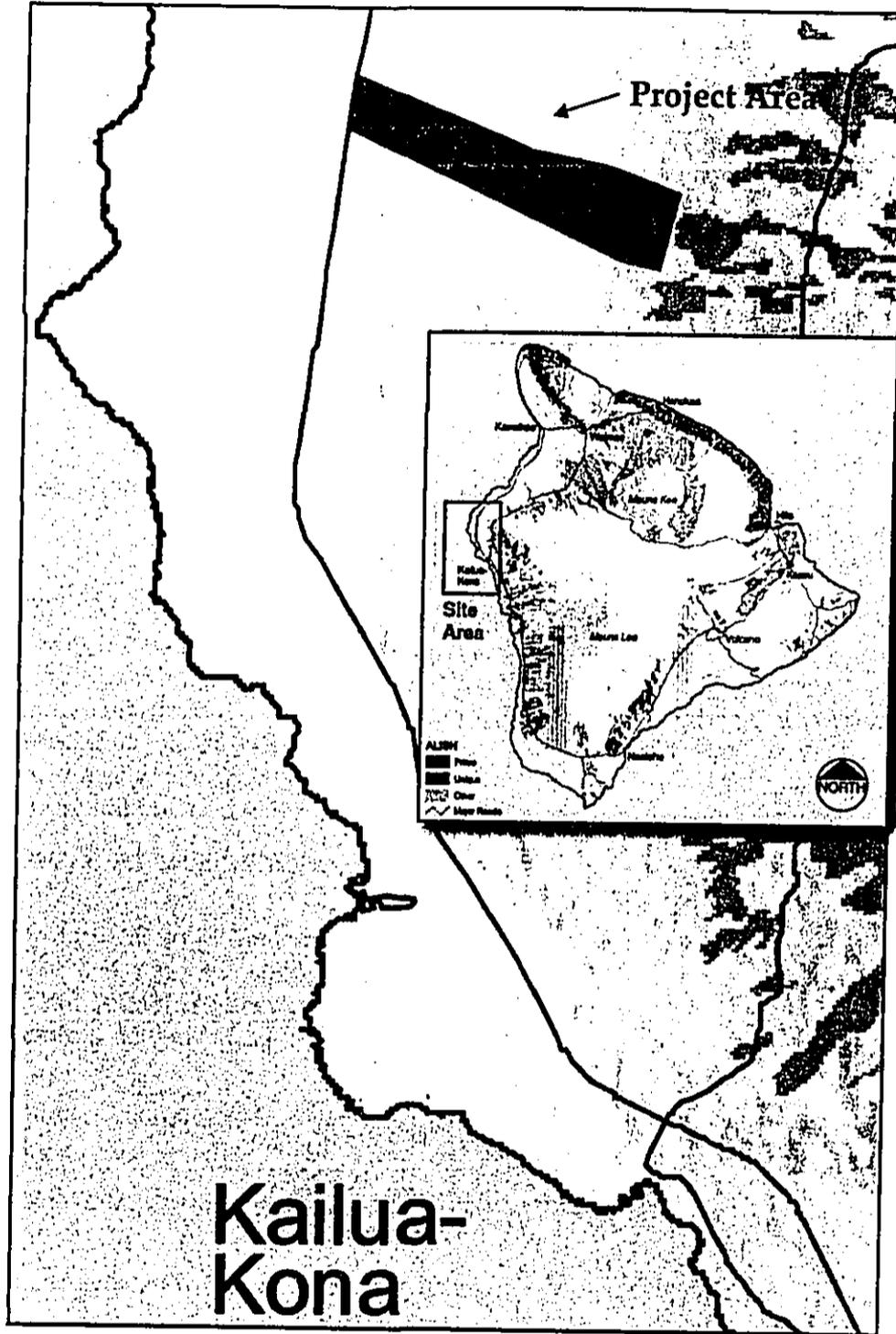


Figure 4-4
ALISH (Soils) Map

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The rainfall is sufficient to support the existing biomass, which consists of tree species, shrubs and grasses. This includes ōhi'a, silk oak, māmane, Christmas berry, koa haole, noni, 'ilima, fountain grass and other species. Part of this section can be utilized as seasonal pasture with very low animal carrying capacity (possible 20 acres/head). If it is to be developed into productive pasture, it requires establishing fences, developing a reliable and adequate source of water as well as constructing internal roads and livestock watering system and improving the grazing forage species. These investments may not be financially rewarding due to the expected high cost of land renovation as well as the marginal production capabilities of such land due to the very shallow soil and the seasonality of rainfall.

Middle Area:

This middle portion, which appears to receive lower rainfall, is dominated by pāhoehoe lava flows [rLW] and punalu'u soil series [rPYD] with pockets of a'a Lava flows [rLV]. The terrain is very rough and inhospitable. A'a lava flows with jagged and clinker rocks with very sharp edges make it dangerous to traverse. The biomass in this section is much less than the upper area. Very few scrubby ōhi'a trees, some cactus, noni, koa haole, fountain grass and few shrubs are found here. The lack of soil, the rough and un-even terrain and the low rainfall render this section unsuitable for any traditional farming.

Lower Area:

Rainfall tends to decrease moving down the slope and the a'a [rLV] and pāhoehoe [rLW] flows dominate the "soil" picture. In this section the rock formations are very rugged, jagged, and difficult to traverse. Rocky gulches and bare small rocky hills are common to this section. The diversity of plant species is extremely limited. This may be due to the insufficient rainfall as well as the absence of fine soil material and organic residue, which can store moisture, essential for sustaining plant growth. Most of this section is void of vegetation, but where it exists, fountain grass, few rattlebox, some scrubby koa haole and very few ōhi'a trees are found.

The summary for this section derives from the Lands of Kau – (North Kona) Soil Report, by Tamimi, (2003). The full report is contained in *Appendix H*.

According to the Land Study Bureau, the agricultural productivity rating of this parcel was designated as class E, which is a classification given to land with very poor productivity. According to the Agricultural Lands of Importance in the State of Hawai'i (ALISH) report, all of the land of Palamanui below the 1000-foot elevation is designated as having no agricultural importance.

Results of the investigation of the suitability (or lack of it) of the Palamanui lands for agricultural use revealed the following:

- There is no adequate soil in all of the area, and there is a complete absence of cultivable land in all portions of this parcel.
- Rainfall appears to be marginal at the upper area and very inadequate to sustain agriculture in the middle and lower sections.
- The dominantly rocky nature of this area makes it nearly impossible to develop into an economically viable agricultural land without huge investments to provide adequate and reliable water resources and a functional water distribution system as well as complete reshaping of the landmass, and establishment of suitable roads. The expected high cost of

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developing such amenities and the uncertainties of profitable returns on such investment may preclude such considerations.

- Since 1989, no agricultural activities were attempted, possibly due to the expected economic futility of such an effort.
- It is apparent that since this land parcel appears to have no economic agricultural production capabilities, removing it from its classification as Agricultural Land will have no effect on the agricultural industry in the State of Hawai'i.

4.9 SURFACE AND GROUNDWATER RESOURCES

Water resources at the project site have been studied by Waimea Water Services Inc. (2003) (*Appendix J*). The groundwater resources beneath the Palamanui site (between Māmalahoa Highway and Queen Ka'ahumanu Highway) consist of a basal lens. In theory, fresh water floats on salt water in a ratio of 1:40 where, for every one foot of fresh water head above sea level, there are 40 feet of fresh water below sea level. This ratio becomes highly modified where the recharge varies seasonally and there is a strong tidal influence.

Fresh water is found in the basal lens near Māmalahoa Highway at elevation 1800 feet (wells 4458-01,02), where the water level stands at + 7 feet. As evidenced by a well on State land (well # 4360-01) in map 1 near the Kona Palisades subdivision, the lens becomes brackish (total chlorides at 580 mg/l) at elevation 680 feet with a head of +3.2 feet.

At elevation 1800 feet above Māmalahoa Highway, well # 4358-01 struck a high level aquifer with the water level standing at elevation + 238 feet (above mean sea level). Pumping tests at the time of construction indicate a draw down of nearly 100 feet with a salinity of 10 mg/l. The well is presently in DWS service with a pumping rate of 300 gpm. See *Figure 3-8* of well locations and proposed brackish wells.

Although speculative, the high-level aquifers seem to be most likely to be related to a fault system rather than dikes found within the rift zone of Hualālai. The high level aquifers along Māmalahoa to the south are all closely associated with coastal slumping (Moore, et al , 1989-*Prodigious Submarine Landslides on the Hawaiian Ridge*).

There is no information to suggest that high-level water will occur within Palamanui.

Groundwater resources analysis estimates groundwater recharge in the North Hualālai areas above elevation 900 feet is about 4 mgd of groundwater flow. The study also estimated the groundwater based on other groundwater sustainable yield information. The sustainable yield is the amount of groundwater that can be pumped on a sustained basis. The available data provides a fairly wide range of possible sustainable yield values. The range extends from 4.2 mgd to 8 mgd. The Keauhou aquifer section data which covers an area from Kua Bay (at Kūki'o) to the north of Palamanui to Keauhou at the south end covered 38 miles of Kona shoreline area and the data would yield an average 2 mgd for the entire 38 miles. However, the study also compared the sub-areas and decided that the sub-area in which Palamanui is located receives much less rainfall than sub-areas at the southern end of the study area. Using the most conservative (lowest) estimate of sustainable yield for the sub-area in which Palamanui is located to conduct its analysis, a value of 1 mgd per mile which would produce a sustainable yield of 4 mgd for the sub-area was estimated.

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The general solution to local drainage in Hawai'i County has been to construct dry wells, which redirect any man-made runoff into the ground. The sporadic nature of the rainfall rarely, if ever, results in long-term pollution. There are no streams or drainage ways in the area and any man-made runoff should be directed underground as it is presently part of the existing recharge and should not be lost to the system. There are no bodies of water in the vicinity of Kau project which might be negatively influenced by the project which might be negatively influenced by the project including the underlying brackish lens.

The dry wells and retention basins will be designed to filter pollutants and silt through sand and gravel layers. Vegetated retention basins will also provide some biological uptake of nutrients in stormwater. In addition, stormwater entering the groundwater from the project site will be filtered through soil and lava layers ranging from approximately 140 to over 900 feet thick, based on site elevations ranging from approximately 150 to 920 feet above sea level. Percolation through such thick soil and lava layers will effectively remove most pollutants from the stormwater before it reaches groundwater.

Runoff that enters drywells from hardscape areas would not be subject to biological uptake, but the deep lava filtration effectively removes many pollutants, except for some dissolved nutrients and persistent pesticides. Pesticides available these days are generally not persistent, as they break down rather quickly in the environment. The golf course and landscape management plans will be responsible for minimizing the discharge of fertilizers and pesticides, and selecting appropriate products to minimize storm water pollution.

4.10 DRAINAGE, FLOOD, AND TSUNAMI HAZARDS

Flood:

The project site is located within a characteristically dry and arid environment where the risks from flooding are virtually nonexistent. The soils have high permeability and ponding naturally occurs. There is some minor scouring during downpours but this is rare. The risks with respect to the flood hazard are therefore slight.

The property lies in an area that spans across four Federal Emergency Management Agency's Flood Rate Insurance Maps (maps 155166 0469 C, 155166 0488C, 155166 0682C, and 155166 0701C *which are not published*). Each of these maps indicates that the property is within Zone X, which represents areas determined to be outside the 500-year floodplain. There are no flood hazard designations at this site.

Tsunamis:

The Federal Emergency Management Agency Flood Insurance Rate Map indicates no areas of potential tsunami inundation on the property.

Tsunamis occur as a series of waves that strike a coastline, and the waves decrease in height over time. Tsunamis can cause serious damage to coastal areas. The degree of tsunami damage is dependent upon several factors including the topography of the affected area, wave origin, and wave intensity. Along the Kona Coast, the tsunami inundation lines are generally concentrated within short distances of the shoreline. The project is located approximately 3 miles from the coastline of West Hawai'i and has a low probability of impact by tsunamis.

Locally generated tsunamis, such as those of 1868 and 1975, are potentially the most hazardous type, because the time between their origin and the arrival of the wave at the shoreline may be

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too brief to warn and evacuate people. In 1975, the first wave reached Punalu'u immediately after the earthquake; it arrived at Hilo in 20 minutes. Any earthquake strong enough to cause difficulty in standing or walking should be regarded as a tsunami warning by people in coastal areas, who should immediately head for higher ground.

Lava Flows: Hazard zones from lava flows are based chiefly on the location and frequency of both historic and prehistoric eruptions. "Historic eruptions" include those for which there are written records, beginning in the early 1800's, and those that are known from the oral traditions of the Hawaiian people. Our knowledge of prehistoric eruptions is based on geologic mapping and dating of the old flows of each volcano. The island of Hawai'i is divided into nine hazard zones according to the level and degree of potential hazards related to lava flows. An area designated as Zone 1 is considered to be an area of greatest potential hazard. These designated zones are determined primarily from the location and frequency of past eruptions.

The Kailua-Kona area is within Zone 4, indicating a moderate hazard. Zone 4 includes all of Hualālai, where the frequency of eruptions is lower than on Kilauea and Mauna Loa. Flows typically cover large areas. The dormant Hualālai last erupted in 1801 (Stearns and McDonald, 1946). Since 1800, five percent of the Hualālai area has been covered by lava. In the last 750 years, 15% has been covered. See *Figure 4-5, USGS Lava Flow Hazard Zone Map*.

Earthquakes: The entire island of Hawai'i is susceptible to earthquakes originating in fault zones under and adjacent to the island. Two fault zones have been identified within the Kona region: the Kealakekua and the Kaloko faults, both located in South Kona and well away from the Property. According to previously established procedures, the United States Geological Survey conducted a probabilistic seismic-hazards assessment in 1997. From this assessment, seismic zones were re-assigned for each county. Due to the island's active volcanic activity, the entire county of Hawai'i lies in a seismic zone designated as Zone 4, the highest zoning designation. The classification system is based on a scale of 0 to 4, increasing in level of risk due to seismic occurrence and danger.

Under the uniform building code seismic provisions, a Zone 4 area could experience severe seismic activity between .30 and .40 of the earth's gravitational acceleration (g-forces) causing major damage to poorly designed or built structures. The potential of damage incurred by strong earthquakes is a prevalent concern for the entire county of Hawai'i. As such, the proposed projects will be in compliance with the Uniform Building Code and County of Hawai'i structural design standards, including earthquake design provisions.

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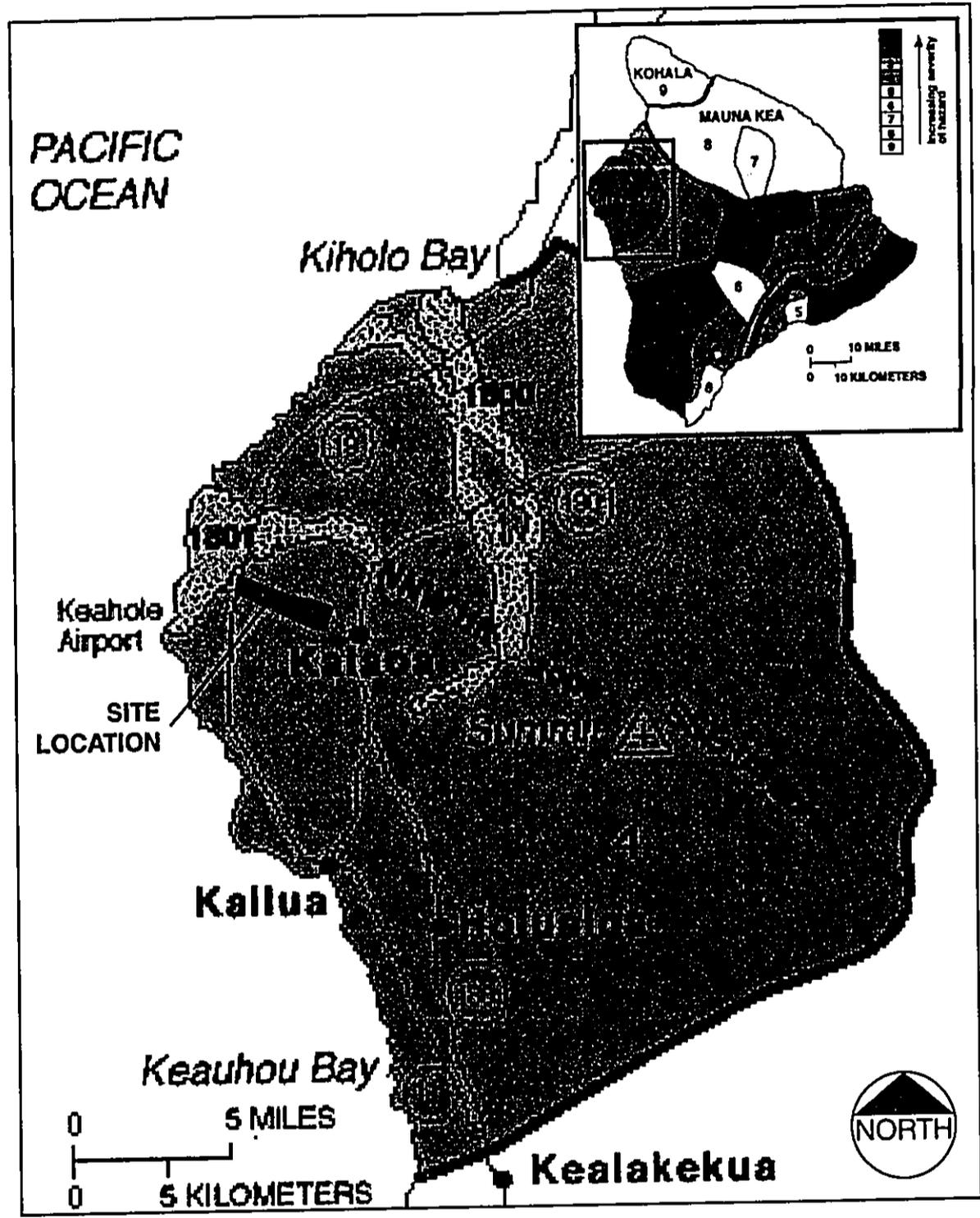


Figure 4-5
USGS Lava Flow Hazard Zone Map

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4.11 FLORA

A botanical reconnaissance for Palamanui was conducted by Patrick Hart, Ph.D in May and June 2003 (*Appendix B*). The objectives of the survey were to 1) identify and take Global Positioning System (GPS) coordinates for all threatened and endangered plant species; 2) list all plant and bird species encountered; and 3) describe the vegetation. The survey focused on identifying and assessing the value of any relict native forests or shrublands.

Current Vegetation and Flora of the Area

Twenty-seven native (including three federally listed Endangered Species and two Species of Concern) and 35 introduced plant taxa were detected (*Table 4-1*). Three general plant communities exist on the project site and are discussed below.

Listed endangered are: aiea, halapepe and uhiuhi.

Scientific Name	Family	Common Name	Life Form	Status
<i>Abutilon grandifolium</i>	<i>Malvaceae</i>	Hairy abutilon	Shrub	A
<i>Aleurites moluccana</i>	<i>Euphorbiaceae</i>	Kukui	Tree	A
<i>Antigonon leptopus</i>	<i>Polygonaceae</i>	Mexican creeper	Vine	A
<i>Argemone glauca</i>	<i>Papaveraceae</i>	Pua kala	Herb	E
<i>Boerhavia coccinea</i>	<i>Nyctaginaceae</i>	Boerhavia	Herb	A
<i>Caesalpinia kavaiensis</i>	<i>Fabaceae</i>	Uhiuhi	Tree	E
<i>Capparis sandwichiana</i>	<i>Capparaceae</i>	Maiapilo	Shrub	E
<i>Carica papaya</i>	<i>Caricaceae</i>	Papaya	Tree	A
<i>Catharanthus roseus</i>	<i>Apocynaceae</i>	Madagascar periwinkle	Shrub	A
<i>Chamaecrista nictitans</i>	<i>Fabaceae</i>	Partridge pea	Herb	A
<i>Chamaesyce multiformis</i>	<i>Euphorbiaceae</i>	'Akoko	Tree	E
<i>Chloris barbata</i>	<i>Poaceae</i>	Swollen finger grass	Grass	A
<i>Cocculus triloba</i>	<i>Menispermaceae</i>	Huehue	Vine	I
<i>Crotalaria incana</i>	<i>Fabaceae</i>	Fuzzy rattlepod	Herb	A
<i>Desmodium incanum</i>	<i>Fabaceae</i>	Spanish Clover	Herb	A
<i>Diospyros sandwicensis</i>	<i>Ebenaceae</i>	Lama	Tree	E
<i>Dodonea viscosa</i>	<i>Sapindaceae</i>	A'ali'i	Shrub	I
<i>Eleusine indica</i>	<i>Poaceae</i>	Wire grass	Grass	A
<i>Erythrina sandwicensis</i>	<i>Fabaceae</i>	Wiliwili	Tree	E
<i>Grevillea robusta</i>	<i>Proteaceae</i>	Silk oak	Tree	A
<i>Hyptis pectinata</i>	<i>Lamiaceae</i>	Comb hyptis	Shrub	A

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<i>Indigofera suffruticosa</i>	<i>Fabaceae</i>	Indigo	Shrub	A
<i>Ipomoea indica</i>	<i>Convolvulaceae</i>	Koali 'awa	Vine	I
<i>Jacaranda mimosifolia</i>	<i>Bignoniaceae</i>	Jacaranda	Tree	A
<i>Kalanchoe pinnata</i>	<i>Crassulaceae</i>	Air plant	Herb	A
<i>Lantana camara</i>	<i>Verbenaceae</i>	Lantana	Shrub	A
<i>Leucaena leucocephala</i>	<i>Fabaceae</i>	Haole koa	Tree	A
<i>Malvastrum coromandelianum</i>	<i>Malvaceae</i>	False mallow	Herb	A
<i>Metrosideros polymorpha</i>	<i>Myrsinaceae</i>	'Ohi'a	Tree	E
<i>Myoporum sandwicense</i>	<i>Myoporaceae</i>	Naio	Tree	I
<i>Nothocestrum breviflorum</i>	<i>Solanaceae</i>	'Aiea	Tree	E
<i>Nototrichium sandwicense</i>	<i>Amaranthaceae</i>	Kulu'i	Shrub	E
<i>Opuntia ficus-indica</i>	<i>Cactaceae</i>	Pānini	Shrub	A
<i>Osteomeles anthyllidifolia</i>	<i>Rosaceae</i>	'Ulei	Shrub	I
<i>Panicum maximum</i>	<i>Poaceae</i>	Guinea grass	Grass	A
<i>Passiflora foetida</i>	<i>Passifloraceae</i>	Love-in-a-mist	Vine	A
<i>Pennisetum setaceum</i>	<i>Poaceae</i>	Fountain grass	Grass	A
<i>Peperomia leptostachya</i>	<i>Piperaceae</i>	'Ala 'ala wai nui	Herb	I
<i>Phlebodium aureum</i>	<i>Polypodiaceae</i>	Hare's foot fern	Fern	A
<i>Pleomele Hawai'iensis</i>	<i>Agavaceae</i>	Halapepe	Tree	E
<i>Pluchea symphytifolia</i>	<i>Asteraceae</i>	Sourbush	Shrub	A
<i>Plumbago zeylanica</i>	<i>Plumbaginaceae</i>	'Ilie'e	Herb	I
<i>Portulaca oleracea</i>	<i>Portulacaceae</i>	Pig weed	Herb	A
<i>Portulaca pilosa</i>	<i>Portulacaceae</i>	'Akulikuli	Herb	A
<i>Psidium cattleianum</i>	<i>Myrtaceae</i>	Strawberry guava	Tree	A
<i>Psidium guajava</i>	<i>Myrtaceae</i>	Common guava	Tree	A
<i>Psilotum nudum</i>	<i>Psilotaceae</i>	Moa	Fern	I
<i>Psydrax odoratum</i>	<i>Rubiaceae</i>	Alahe'e	Tree	I
<i>Reynoldsia sandwicensis</i>	<i>Araliaceae</i>	'Ohe makai	Tree	E
<i>Rhynchelytrum repens</i>	<i>Poaceae</i>	Natal redtop	Grass	A
<i>Rivina humilis</i>	<i>Phytolaccaceae</i>	Coral berry	Shrub	A
<i>Santalum paniculatum</i>	<i>Santalaceae</i>	Sandalwood	Tree	E
<i>Schinus terebinthifolius</i>	<i>Anacardiaceae</i>	Christmasberry	Tree	A
<i>Senna gaudichaudii</i>	<i>Fabaceae</i>	Kolomona	Tree	I

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<i>Senna occidentalis</i>	<i>Fabaceae</i>	Coffee senna	Shrub	A
<i>Sida fallax</i>	<i>Malvaceae</i>	'Ilima	Shrub	I
<i>Sophora chrysophylla</i>	<i>Fabaceae</i>	Māmane	Tree	E
<i>Stachytarpheta jamaicensis</i>	<i>Verbenaceae</i>	Jamaica vervain	Shrub	A
<i>Verbena littoralis</i>	<i>Verbenaceae</i>	Owī	Herb	A
<i>Waltheria indica</i>	<i>Sterculiaceae</i>	'Uhaloa	Herb	I
<i>Wikstroemia sandwicensis</i>	<i>Thymeliaceae</i>	'Akia	Shrub	E
<i>Xylosma Hawai'iense</i>	<i>Flacourtiaceae</i>	Maua	Tree	E

Table 4-1. Inventoried Plant Species in Lands of Kau

List of Alien (A), Indigenous (I), and Endemic (E) plant species found during the course of the study. Bold lettering indicates a federally listed endangered species.

Pennisetum grasslands

Much of the makai portion of the property below about 500 feet elevation consists of nearly barren lava flows, grasslands of introduced fountain grass (*Pennisetum setaceum*), and scattered native and introduced shrubs and trees. The rather sparse herb layer in these grasslands primarily consists of the indigenous 'uhaloa (*Waltheria indica*), and the introduced partridge pea (*Chamaecrista nictitans*). Other introduced plants include haole koa (*Leucaena leucocephala*), indigo (*Indigofera suffruticosa*), and *Pluchea symphytifolia*, which are present as low growing shrubs, and silk oak (*Grevillea robusta*), which is present as trees up to 25 feet tall. Native shrubs include the locally common maiapilo (*Capparis sandwichiana*), a federally-listed Species of Concern (SOC), and a'āli'i (*Dodonea viscosa*). Native trees such as 'ōhi'a (*Metrosideros polymorpha*), lama (*Diospyros sandwicensis*), naio (*Myoporum sandwicense*), alahe'e (*Psydrax odoratum*), and maua (*Xylosma Hawai'iense*) are scattered in very low densities throughout this area. Most significantly, three individuals of the state and federally endangered uhi-uhi tree (*Caesalpinia kavaiensis*), and two individuals of the state and federally endangered 'aiea tree (*Nothocestrum breviflorum*) were encountered. However, one of the 'aiea trees may be growing just a few feet outside the property boundary. All of the native trees are growing in areas of otherwise barren a'ā lava.

Pennisetum Scrub

From approximately 500 to 650 feet in elevation, shrubs become co-dominant with fountain grass. The indigenous a'āli'i is abundant, forming dense thickets in some areas. Also present are the introduced haole koa and christmasberry (*Schinus terebinthifolius*). Interestingly, the shrubland to the north of the jeep road is dominated by a'āli'i, whereas much of the land to the south of the road is dominated by the introduced species. Native trees such as lama, alahe'e, mamane (*Sophora chrysophylla*), and iliahi (aka. sandalwood, (*Santalum ellipticum*)) occasionally emerge above these shrubs. The most remarkable component of this vegetation zone is the numerous stands of giant wiliwili trees that are scattered throughout the area (*Figure 4-2*). These trees are likely the last remnants of the dry forest that once existed there.

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Diospyros-Psydrax-Santalum Dry Forest

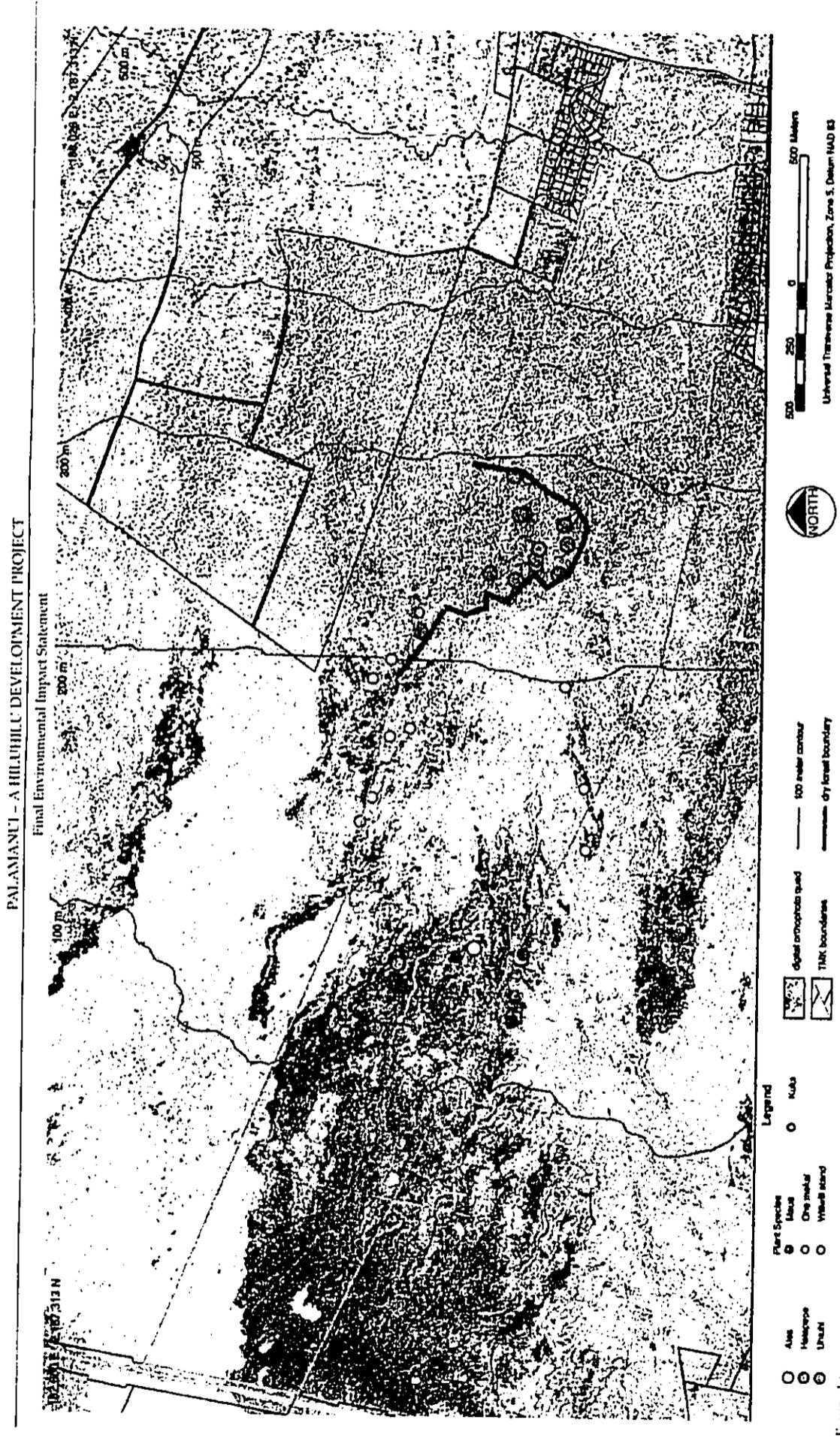
A Lowland Dry Forest (Gagne and Cuddihy, 1990) that is dominated by lama, alahe'e, and sandalwood forms a relatively sharp but irregular boundary with the Pennisetum scrub at approximately 650 feet elevation, and continues to the mauka boundary of the property. The forest to the south of the jeep road has numerous large lama and alahe'e trees, but is relatively disturbed and is dominated by alien trees and shrubs such as silk oak, christmas berry, and haole koa. The dry forest to the north of the jeep road has apparently never experienced a major disturbance, and a 65-75 acre portion of this area may rank among the most intact Lowland Dry Forest fragments remaining on the island. This community consists of a closed canopy of lama and sandalwood trees up to 25 feet tall, with a sub-canopy primarily of alahe'e, interspersed with wiliwili, kolomona (*Senna gaudichaudii*), 'akia (*Wikstroemia sandwicensis*), mamane, 'ulei (*Osteomeles anthyllidifolia*), akoko (*Chamaesyce multiformis*), and a'ali'i. A few large ohi'a and silk oak form a scattered emergent layer. At least 13 individuals of the federally endangered halapepe (*Pleomele Hawai'iensis*) were encountered within this area, and one ohe makai (*Reynoldsia sandwicensis*), a Species of Concern (SOC). With the exception of a few small, disturbed patches (and one old bulldozer cut) that contain fountain grass, christmas berry, and haole koa, much of the understory of this forest is composed of native tree seedlings and saplings, especially lama, alahe'e, and some sandalwood. Native vines include huehue (*Cocculus triloba*) and koali (*Ipomoea indica*). The abundance of kolomona and sandalwood trees is particularly striking in this forest, as are the numerous large individuals of *Chamaesyce multiformis*, many of which reach diameters larger than have ever been reported for this species.

The dry forest fragment is ecologically and culturally valuable because over 95% of the State's dry forests haven been destroyed and the rest are severely degraded.

Rare, Threatened, and Endangered Species

Thirteen individuals of the federally endangered Halapepe were encountered. All of these are growing in the Lowland Dry Forest fragment in the upper portion of the property. Three individuals of the federally listed uhiuhi, two individuals of aiea were also detected, however, it is likely that one of the 'aiea individuals is located just outside the southern property boundary. In addition, maiapilo, a federally listed SOC was common in the makai half of the property. A single individual of ohe makai, another SOC, was located in the dry forest near the mauka boundary of the property. *Figure 4-6* illustrates the vegetation reconnaissance results.

RECEIVED AS FOLLOWS



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4.12 FAUNA

Birds

Three species of native birds (including one federally listed endangered species and one Species of Concern (SOC)), and 11 species of introduced birds were detected (Table 4-2). Hawai'i 'amakihi were abundant in the mauka forested areas of the project site, with a mean density of approximately 4.5 birds per acre.

Rare, Threatened, and Endangered Species

The federally endangered Hawaiian Hawk ('Io) *Buteo solitarius*, was regularly seen in the forested sections in the mauka portion of the property. The Hawaiian short-eared owl (Pueo), *Asio flammeus sandwichensis*, is a federally listed SOC, and was seen on one occasion foraging in a'ali'i shrublands at approximately 500 feet elevation.

Scientific Name	Common Name
<i>Acridotheres tristis</i>	Common Myna
<i>Asio flammeus sandwichensis</i>	*Hawaiian Short-eared Owl (Pueo)
<i>Buteo solitarius</i>	*'Io (Hawaiian Hawk)
<i>Cardinalis cardinalis</i>	Northern Cardinal
<i>Carpodacus mexicanus</i>	House Finch
<i>Francolinus francolinus</i>	Black Francolin
<i>Geopelia striata</i>	Zebra Dove
<i>Hemignathus virens virens</i>	*Hawai'i 'Amakihi
<i>Lonchura malabarica</i>	Warbling silverbill
Nutmeg mannikin	<i>Lonchura punctulata</i>
<i>Serinus mozambicus</i>	Yellow-fronted canary
<i>Streptopelia chinensis</i>	Spotted Dove
<i>Zenaida macroura</i>	Mourning dove
<i>Zosterops japonicus</i>	Japanese White-eye

* indicates native endemic species or sub-species. Bold lettering indicates Threatened or Endangered status.

Table 4-2

Inventoried Bird Species in Lands of Kau

One introduced but unusual mammal in Kona is the feral donkey (*Equus asinus*).

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4.13 CAVE FAUNA

Lava tubes characteristically form in pāhoehoe lava, which cover over one-half of the surface of the project area. The lava flows are undated but are believed to be between 1,500 and 10,000 years old.

A biological reconnaissance of 23 caves (lava tubes) throughout the project area was conducted by Hawai'i Biological Survey in September 2003 to identify the biologically significant caves and invertebrate species found in the caves. *Appendix O* contains the full biological assessment of the lava tubes within the Palamanui project.

The 23 lava tube segments investigated are grouped into six lava tube systems and 3 isolated caves. Five cave segments in four systems entered the deep cave zone environment (i.e., perpetually dark, moist passage with a stable air mass saturated with water vapor) and supported obligate cave-inhabiting species.

The biologically significant caves found are: 1) Cave 14338 near the northeast boundary; 2) Cave 14368C along the middle of the of the northern boundary; 3) Cave 14375B south of the main access road near the middle of the southern boundary; and 4) and 5) two segments within Cave 14350 lava tube system. The latter trends about 600 m downslope from near the middle of the eastern boundary. *Figure 4-7* illustrates location of caves throughout Palamanui.

Eighteen species of arthropods were found, of which five (28%) are native to Hawai'i. Three are obligate cave-adapted species: a springtail (*Sinella* cf. *yosii*); an undescribed moth (*Schrankia* species); and an undescribed sowbug (*Littorophiloscia* species). These obligate cave species probably have a limited distribution within the lowland western slopes of Hualālai. No officially recognized rare species were found. However, the presence of suitable habitat, supporting native plant roots and obligate cave-inhabiting species indicate that a cave ecosystem occurs within the project area. Additional native cave species very likely live in the cave-like voids in the young lava flows.

Early Hawaiians intensively used four of these cave segments for water catchment. The exploitation of water resources in caves was paramount in allowing Hawaiian communities to live in dry, harsh environments, such as at Kau.

4.14 EXISTING USES AND ACTIVITIES

The existing use on the project site is vacant with State land use designations of conservation and agriculture. Mākālei Estates, located to the east of the project site is composed of 80, 3-acre lots with housing construction underway. Adjacent uses to the north and south are vacant. *Figure 4-8* is an aerial photo of the property.

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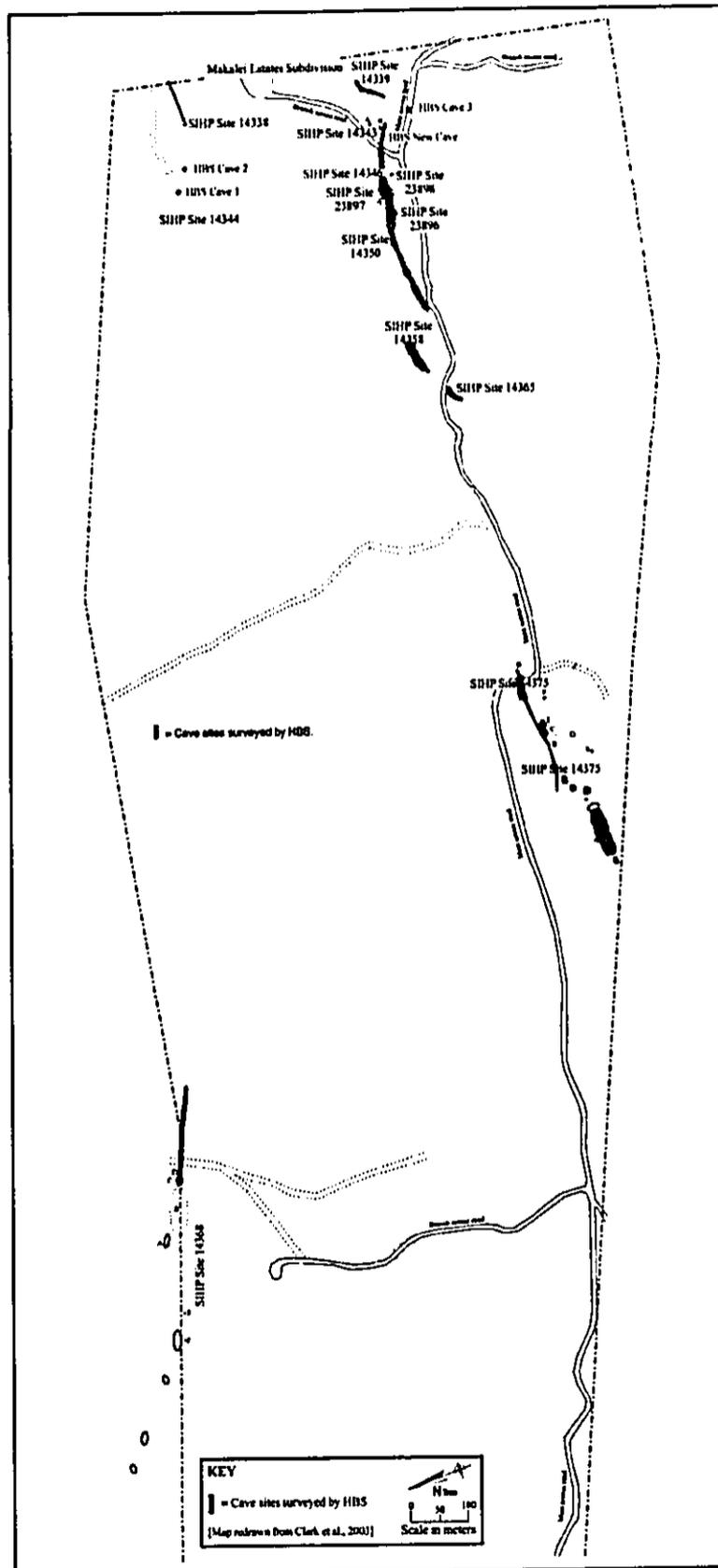


Figure 4-7
Cave Map

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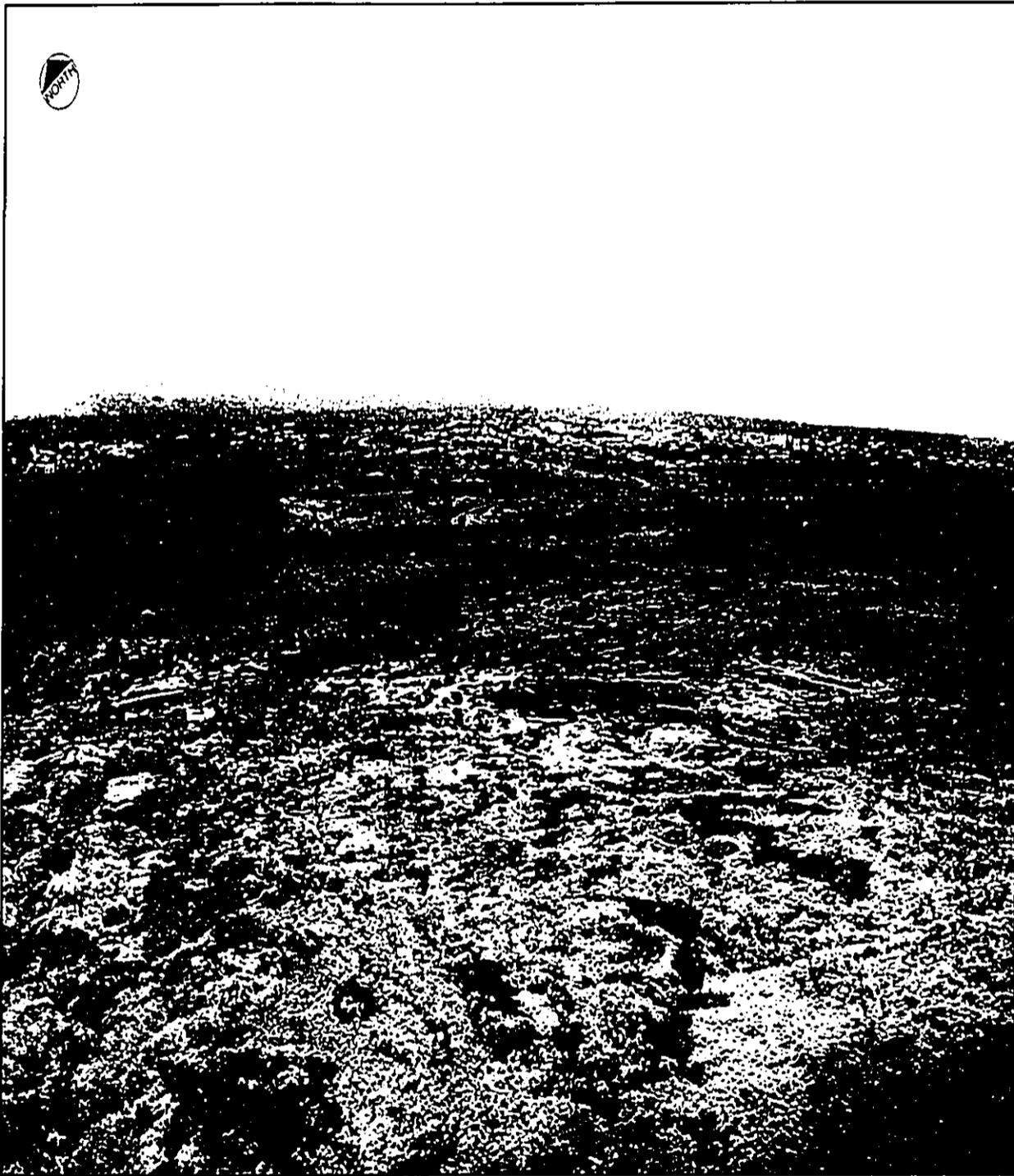


Figure 4-8

Aerial Photo of Project Area

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4.15 ROADWAYS AND TRAFFIC

There are no existing public roadways on the Hiluhilu parcel. However, the parcel is bounded by Queen Ka'ahumanu Highway on the western end and the Mākālei Estates on the eastern end. The Mākālei Estates subdivision has existing roadways, including a substandard collector road that ends just east of the Hiluhilu parcel. A private jeep trail traverses the Hiluhilu parcel in an east-west direction.

The property immediately south of the project site is currently undeveloped. Ka'iminani Drive runs approximately parallel to the southern property line between Queen Ka'ahumanu and Māmalahoa Highways about 1.25 miles south of the project site. Side streets and parallel streets with residential subdivisions exist along most of Ka'iminani Drive. Kalaoa 1, 2, and 3 subdivisions exist approximately 3,000 to 4,000 feet south and southeast of the southeast corner of the project site, between Mākālei Estates and Ka'iminani Drive. They are accessed by branch roads from Māmalahoa Highway. Details regarding existing roads and traffic conditions are provided in the Traffic Impact Assessment Report, as *Appendix E*.

Queen Ka'ahumanu Highway is a two-way, two-lane, State arterial highway that is oriented in the north-south direction, and provides regional access between Kawaihae and Kona. Queen Ka'ahumanu Highway forms a "Tee" intersection with Kawaihae Road on its northerly terminus and terminates to the south at its intersection with Kuakini Highway. The posted speed limit on Queen Ka'ahumanu Highway is generally 55 miles per hour (mph), decreasing to 35 mph near Kailua-Kona.

Māmalahoa Highway in the vicinity of the Project is a two-way, two-lane, major state collector roadway that is oriented in the north-south direction from Waimea to Kailua-Kona, as a portion of the Hawai'i Belt Road. At the Palani Junction in Honokōhau, the major vehicle movement is from the northern portion of Māmalahoa Highway to Palani Road. The southern portion of Māmalahoa Highway at the Palani Junction is the stop sign-controlled stem of a "Tee" intersection. The southern portion of Māmalahoa Highway becomes a two-way, two-lane, County collector roadway that is oriented in the north-south direction bypassing Kailua-Kona and provides access to the agricultural and residential areas on the slopes above Kailua-Kona. The posted speed limit on Māmalahoa Highway north of Palani Junction is generally 55 mph. The posted speed limit on Māmalahoa south of Palani Junction is generally 55 mph and drops to 35 mph through portions that are narrow with sharp vertical and horizontal curves and relatively short sight distances.

Keāhole Airport Road is a two-way, two-lane, State collector roadway that is oriented in the east-west direction and is the primary access to the Kona International Airport at Keāhole from Queen Ka'ahumanu Highway. On its eastern end, Keāhole Airport Road terminates as the stem of the "Tee" intersection with Queen Ka'ahumanu Highway.

Ka'iminani Drive is a two-way, two-lane, County collector roadway that is oriented in the east-west direction providing access between Māmalahoa Highway and Queen Ka'ahumanu Highway in the Keāhole region. Ka'iminani Drive is the primary access to the Keāhole View, Keāhole Heights, and Kona Palisades Estates subdivisions. Ka'iminani Drive is the stem of the "Tee" intersections with Māmalahoa Highway on its eastern end and Queen Ka'ahumanu Highway on its western end.

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Palani Drive is a two-way, two-lane, County collector roadway between Māmalahoa Highway and Queen Ka'ahumanu Highway. Māmalahoa Highway and Palani Road form major vehicle movement at the "Tee" intersection (Palani Junction), with the southern portion of Māmalahoa Highway being the stop sign-controlled stem. Palani Road provides access to downtown Kailua-Kona on a northeast to southwest alignment. Between Queen Ka'ahumanu Highway and Kuakini Highway, Palani Road widens to a four-lane divided roadway and narrows down to a two-lane roadway between Kuakini Highway and its southern terminus with Ali'i Drive at the Kailua-Kona wharf. Large commercial shopping centers adjoin both sides of Palani Road between Queen Ka'ahumanu Highway and Kuakini Highway.

"Mākālei Access Road" is a two-way, two-lane, future county roadway that is oriented in the east-west direction and is the only access to the Mākālei Estates Subdivision. On its eastern end "Mākālei Access Road" terminates at its intersection with Māmalahoa Highway, forming the stop sign-controlled stem of a "Tee" intersection. On its western end "Mākālei Access Road" terminates at its border with the proposed Project. An official street/road name is not documented in published sources for this access road segment and therefore, for purposes of this report, will be referred to as "Mākālei Access Road".

See *Figure 4-9* for roadway locations.

Major road intersections surrounding the project involve the following:

Māmalahoa Highway/"Mākālei Access Road". "Mākālei Access Road" forms the stem of a stop sign-controlled "Tee" intersection with Māmalahoa Highway. The Māmalahoa Highway northbound approach provides an exclusive left-turn lane and a through lane, and its southbound approach provides for a shared right-turn/through. The "Mākālei Access Road" eastbound approach provides a single-lane, which operates as a shared right/left-turn lane.

Māmalahoa Highway/Ka'iminani Drive. Ka'iminani Drive forms the stem of a stop sign-controlled "Tee" intersection with Māmalahoa Highway. The Māmalahoa Highway northbound approach provides an exclusive left-turn lane and a through lane, and its southbound approach provides a shared right-turn/through lane. The Ka'iminani Drive eastbound approach is striped as a single lane approach; however, the eastbound approach was observed to operate as a separate left-turn lane and a separate right-turn lane, with a two to three storage lane for the right-turn traffic.

Queen Ka'ahumanu Highway/Palani Road. Palani Road forms a traffic signal controlled "cross"-intersection with Queen Ka'ahumanu Highway. The Queen Ka'ahumanu Highway northbound approach provides an exclusive left-turn lane, a through lane, and an exclusive right-turn lane. The Queen Ka'ahumanu Highway southbound approach provide an exclusive left-turn lane, a through lane, and an exclusive right-turn lane that connects to an exclusive westbound lane on Palani Road forming a "free" right-turn. The Palani Road westbound and eastbound approaches provide an exclusive left-turn lane, a through lane, and right-turn lanes that connect to exclusive southbound and northbound acceleration lanes on Queen Ka'ahumanu Highway, forming "free" right-turn lanes.

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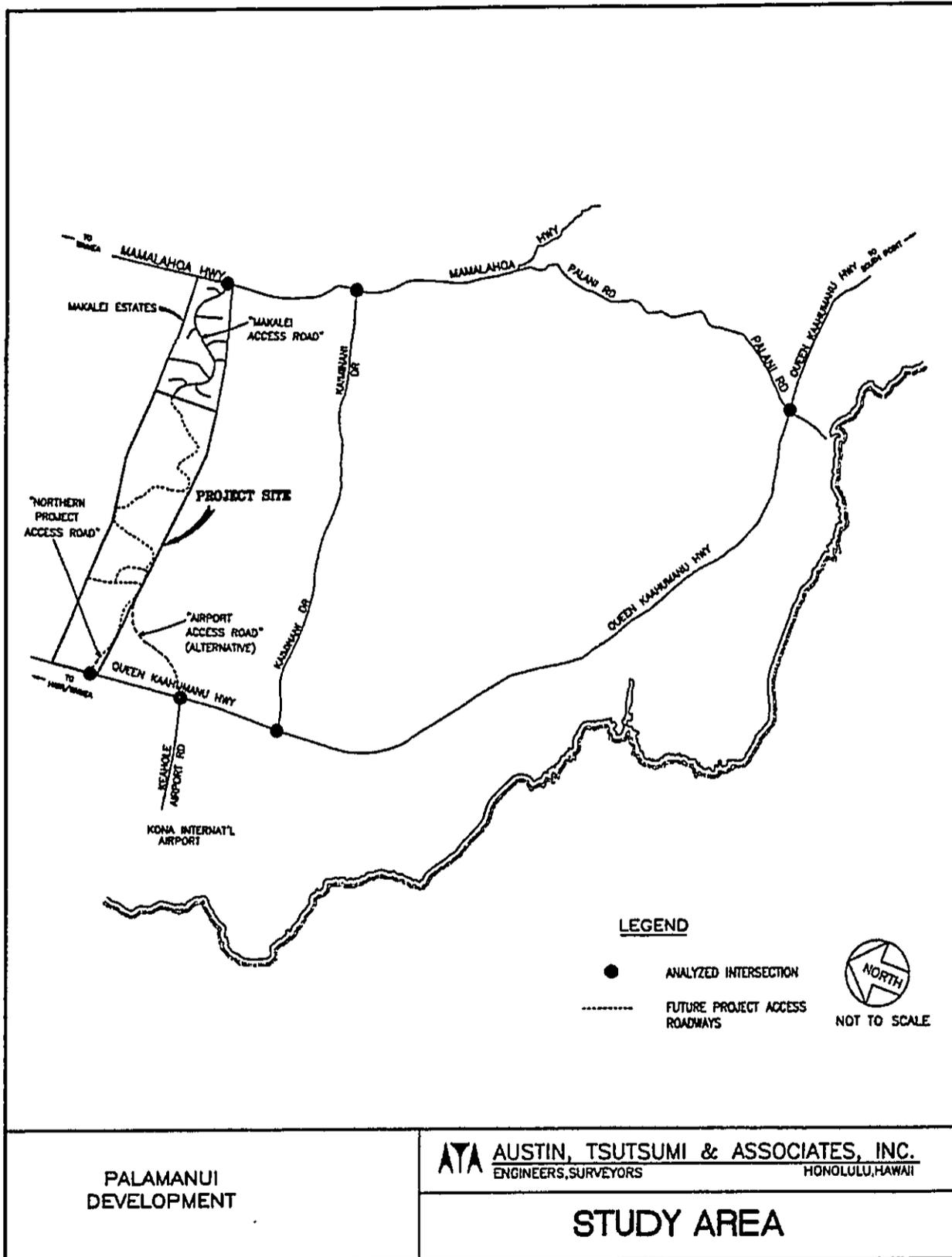


Figure 4-9
Roadway locations

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Queen Ka'ahumanu Highway/Ka'iminani Drive. Ka'iminani Drive forms the stem of a traffic signal controlled "Tee" intersection with Queen Ka'ahumanu Highway. The Queen Ka'ahumanu Highway northbound approach provides an exclusive right-turn lane and a through lane. The Queen Ka'ahumanu southbound approach provides an exclusive left-turn lane and a through lane. The Ka'iminani Drive westbound approach provides an exclusive left-turn lane and a right-turn lane that connects to an exclusive northbound acceleration lane on Queen Ka'ahumanu Highway, forming a "free" right-turn.

Queen Ka'ahumanu Highway/Keāhole Airport Road. Keāhole Airport Road forms the stem of a traffic signal controlled "Tee" intersection with Queen Ka'ahumanu Highway. The Queen Ka'ahumanu Highway northbound approach provides a left-turn lane and a through lane. The Queen Ka'ahumanu Highway southbound approach provides an exclusive right-turn lane and a through lane. The Keāhole Airport Road eastbound approach provides an exclusive left-turn lane and a right-turn lane that connects to an exclusive southbound acceleration lane on Queen Ka'ahumanu Highway, forming a "free" right-turn.

Peak hour traffic volumes at the study intersections were analyzed using procedures for unsignalized and signalized intersection analysis outlined in the Highway Capacity Manual – HCM 2000. Level of Service (LOS) is a qualitative measure used to describe the conditions of traffic flow ranging from free-flowing conditions, LOS A, to congested conditions, LOS F. It should be noted that overall unsignalized intersection LOS is no longer calculated in the HCM 2000 procedure; LOS is only calculated for the stop-controlled (minor) approaches and for left turns from the major roadway. *Figure 4-10* shows existing and peak hour traffic volumes. *Table 4-3* summarizes existing level of service (LOS) conditions.

A traffic impact analysis report (TIAR) in *Appendix E* provides detail descriptions of existing trip counts and level of service relating to these intersections.

It is generally understood that traffic congestion in North Kona is heavy and is expected to increase as the area develops. Long delays occur during peak periods on Māmalahoa Highway, Queen Ka'ahumanu Highway and Palani Road. These problems are especially severe at certain intersection points such as Ka'iminani Drive and Queen Ka'ahumanu Highway and the Palani Road intersection with Queen Ka'ahumanu. Certain movements at these intersections are already at level of service E. The development growth and subsequent traffic increases along this corridor is a growing concern of area residents and State and County agencies.

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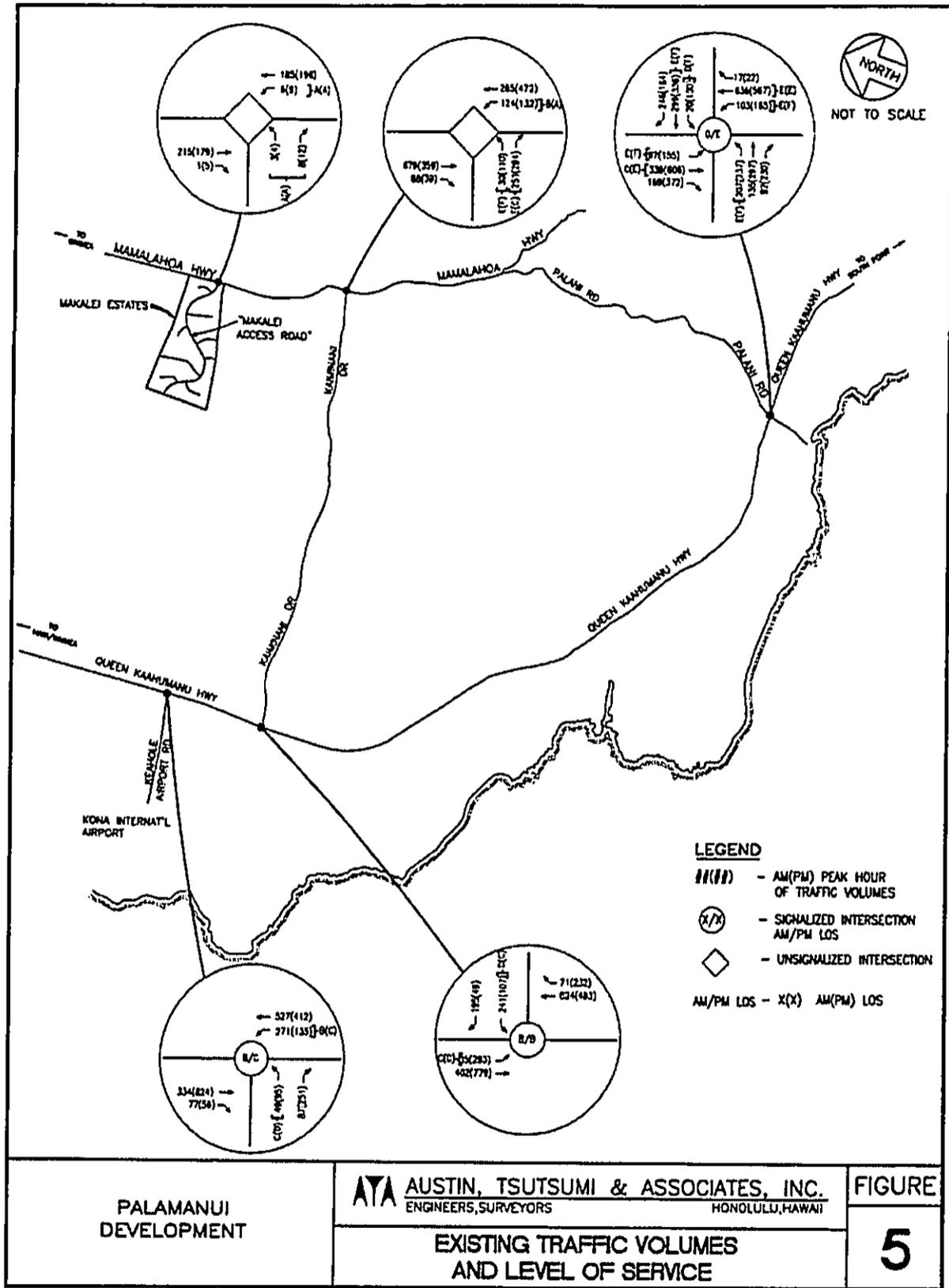


Figure 4-10
Existing Traffic Volumes and Level of Service

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	Existing Year 2003			
	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
"Makalei Access Road"/Mamalahoa Highway				
NB LT	A	7.7	A	7.7
EB LT/RT	A	9.8	A	9.9
Kalminani Drive/Mamalahoa Highway				
NB LT	B	10.6	A	8.7
NB TH	--	--	--	--
SB RT/TH	--	--	--	--
EB LT	E	42.8	F	69.2
EB RT	E	36.1	C	16.3
<i>Overall</i>	--	--	--	--
Palani Road/Queen Kaahumanu Highway				
NB LT	E	73.8	F	117.9
NB TH	E	59.2	E	57.2
NB RT	B	15.0	C	22.1
SB LT	E	68.1	F	105.5
SB TH	C	26.2	E	65.2
SB RT	free right-turn			
EB LT	E	76.5	F	107.6
EB TH	C	29.6	D	51.2
EB RT	free right-turn			
WB LT	D	52.6	F	126.5
WB TH	E	65.1	F	91.2
WB RT	free right-turn			
<i>Overall</i>	D	54.7	E	77.4
Kalminani Drive/Queen Kaahumanu Highway				
NB TH	C	21.3	C	21.2
NB RT	A	2.3	A	6.4
SB LT	C	25.5	C	27.1
SB TH	A	5.5	A	5.6
WB LT	C	31.7	C	29.1
WB RT	free right-turn			
<i>Overall</i>	B	17.6	B	14.4
Keahole Airport Road/Queen Kaahumanu Highway				
NB LT	B	19.1	C	30.2
NB TH	A	3.7	A	2.6
SB TH	B	18.2	C	26.5
SB RT	A	7.0	A	2.8
EB LT	C	24.8	D	42.7
EB RT	free right-turn			
<i>Overall</i>	B	11.9	C	20.5

Table 4-3

Existing Conditions – Level of Service Summary

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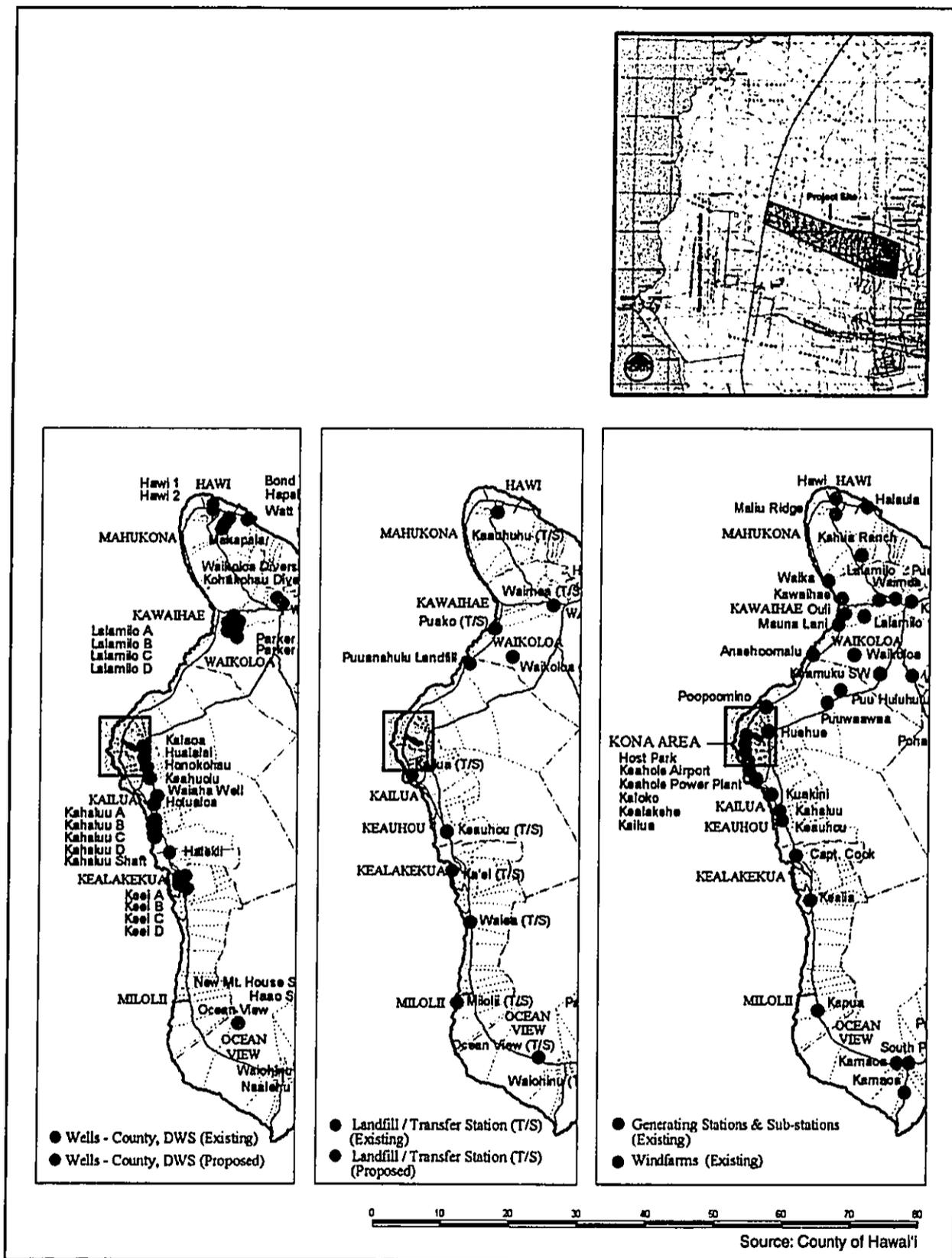


Figure 4-11

Regional Public Utilities – Wells, Landfill/Transfer Stations and Electricity Generating Stations

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4.16 INFRASTRUCTURE

The Palamanui site has no existing drainage, water, or sewerage facilities on site. The Mākālei Estates subdivision, adjacent to the eastern end of the parcel, has existing on-site drainage facilities and an existing County water distribution system. Sewerage at the Mākālei Estates subdivision is provided by individual wastewater systems.

The other existing subdivisions in the vicinity of the Palamanui site are served by the County water system. They also have internal storm drainage systems that use drywells for disposal, and use individual wastewater systems for sewage disposal. Regional resources for water, landfills and electricity are shown in *Figure 4-11*.

4.16.1 Drainage Facilities

The topography of the existing undeveloped site shows no natural drainage channels, suggesting that despite the approximate 5 percent slope from east to west, the ground surface is very permeable and any runoff that occurs during large rainstorms percolates into the ground before it forms permanent channels. The drainage system in the Mākālei Estates subdivision, adjacent to the eastern end of the parcel, consists of conveyance structures and drywells.

The general solution to local drainage in Hawai'i County has been to construct dry wells, which redirect any man-made runoff into the ground. The sporadic nature of the rainfall rarely, if ever, results in long-term pollution. There are no streams or drainage ways in the area and any man-made runoff should be directed underground as it is presently part of the existing recharge and should not be lost to the system. There are no bodies of water in the vicinity of Kau project which might be negatively influenced by the project which might be negatively influenced by the project including the underlying brackish lens.

Stormwater runoff from impervious areas will be collected through a system of swales, catch basins, and pipes and transported to stormwater drywells or infiltration areas for disposal. The permeability of the existing soils is evident by the absence of any natural stormwater channels or gullies in the vicinity of the site. Infiltration areas will be located in the golf course and other open spaces, where practical. Drywells will be located within roadway rights-of-way and within individual parcels, as needed. The drywells will be designed as shallow infiltration basins that will not meet the Department of Health's definition of a "well." Thus, the drywells will not be subject to Underground Injection Control permitting requirements. Planning for stormwater runoff will include review of potential non-point source pollution, and implementation of appropriate construction and permanent best management practices (BMPs). Permanent structural BMPs will be included during project design, and will primarily target nutrients and pesticides from both golf course and residential activities. Permanent non-structural BMPs would be included in the project's overall storm water operation and maintenance program and in the golf course operation and maintenance program. The storm drainage system will be constructed in conjunction with the development of roads, the golf course, and specific sites within the project. *Appendix A* provides information regarding civil infrastructure for the project.

The drywells and retention basins will be designed to filter pollutants and silt through sand and gravel layers. Vegetated retention basins will also provide some biological uptake of nutrients

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in stormwater. In addition, stormwater entering the groundwater from the project site will be filtered through soil and lava layers ranging from approximately 140 to over 900 feet thick, based on site elevations ranging from approximately 150 to 920 feet above sea level. Percolation through such thick soil and lava layers will effectively remove most pollutants from the stormwater before it reaches groundwater.

Runoff that enters drywells from hardscape areas would not be subject to biological uptake, but the deep lava filtration effectively removes most pollutants, except for some dissolved nutrients and persistent pesticides. Pesticides available these days are generally not persistent, as they break down rather quickly in the environment. The golf course and landscape management plans will be responsible for minimizing the discharge of fertilizers and pesticides, and selecting appropriate products to minimize storm water pollution.

4.16.2 Water Supply

There is no existing potable water system on the property. A 12-inch water line in the main road of the Mākālei Estates subdivision, which is part of the County water distribution system, ends just east of the eastern end of the property. The 12-inch main through Mākālei Estates connects to the existing 12-inch main in Māmalahoa Highway at the mauka end of Mākālei Estates. There are two 0.05 million gallon (MG) reservoirs within Mākālei Estates and a 0.30 MG reservoir approximately 1,800 feet mauka of Māmalahoa Highway across from Mākālei Estates. *Appendix A* provides information regarding civil infrastructure for the project.

Two potable wells have been developed at the north and south mauka corners of the Mākālei Estates subdivision. Each well has a production capacity of 750,000 gallons per day (gpd). Outfitting of the southern well is in the final stages of construction. After completion, the well will provide water to the County Department of Water Supply system. The northern well has been capped and will need to be outfitted to be activated as a source.

The location, capacities and status of the potable water wells in the area are described in section 3.2.7.4 of this Draft EIS. These include Kau Wells 1 and 2 which are in the Mākālei Estates subdivision located at the mauka end of the Palamanui site. Those wells are expected to be the main source for the potable water for Palamanui. *Figure 3-8* illustrates the well locations and proposed brackish wells for this project. Water transmission lines run along Māmalahoa Highway.

The Water Resources Assessment study which evaluated the sufficiency of groundwater resources for potable water for Palamanui is *Appendix J* to this report. The results of that study were discussed in detail in Chapter 3 of this report.

The demand for irrigation water and the adequacy of brackish water to meet that demand was addressed in Section 3.2.7.4 of this report. As presented in more detail in that section, the irrigation water for the proposed golf course will come from brackish wells which will be drilled on the Palamanui site. New permits will be needed. Treated wastewater will be used to supplement golf course irrigation and landscaping.

In addition to reducing the amount of brackish water that must be pumped for irrigation uses, the application of nutrients in that effluent water to the golf course will allow those nutrients to be consumed. In particular, phosphorus, which is notably absent in Hawaiian soils, will largely be consumed by the turf grass, along with nitrogen. As such, there will be a reduction in the

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need for the application of supplemental fertilizers and the reduction of those elements from the treated wastewater.

Nonpotable Irrigation Water. Based on the experience of the Hualālai Golf course, it is estimated that about 1 mgd of irrigation water will be required for the golf course during grow in. If the soil is adequately prepared, the golf course should not require more than 0.8 mgd once the grass is established, assuming that about 100 acres are under irrigation. The irrigation water will be provided by a system with two supply sources. The primary supply will be "R-1" recycled water produced by the on-site wastewater treatment plant in compliance with Department of Health requirements for golf course irrigation. The secondary source will be on-site non-potable brackish wells that will be located at the mauka end of the project site. The golf course irrigation system will be designed to use all recycled water to the extent feasible. However, even at full buildout, the recycled water will not completely satisfy the irrigation demand of the golf course. Because the golf course will be constructed in Phase 1 of the project, when wastewater flows are relatively low, non-potable would initially be relied upon for the majority of golf course irrigation. As project development progresses and wastewater flows increase, recycled water would provide a greater proportion of the golf course irrigation requirement. Approximately 0.3, 0.6 and 0.8 mgd of recycled R-1 water for golf course irrigation will be generated respectively by Phases 1, 2 and 3 of Palamanui. See *Appendix A* for more details regarding wastewater flow projections.

4.16.3 Wastewater Collection, Treatment and Disposal

There is no existing sewer system on the Hiluhilu parcel. The Mākālei Estates subdivision, immediately east of the parcel uses individual wastewater systems for treatment and disposal of sewage, as do other subdivisions in the vicinity. The nearest wastewater collection and treatment system is the DOT Airports system serving Kona International Airport at Keāhole, approximately one mile to the west of the project. The nearest public wastewater collection system is the Kailua-Kona municipal system, approximately six miles to the south. *Appendix A* provides information regarding civil infrastructure for the project.

Again, "R-1" recycled water will be produced by the on-site wastewater treatment plant in compliance with Department of Health requirement for golf course irrigation. The secondary source will be on-site non-potable brackish wells that will be located at the mauka end of the project site. The golf course irrigation system will be designed to use all recycled water to the extent feasible. However, even at full buildout, the recycled water will not completely satisfy the irrigation demand of the golf course. Because the golf course will be constructed in Phase 1 of the project, when wastewater flows are relatively low, non-potable would initially be relied upon for the majority of golf course irrigation. As project development progresses and wastewater flows increase, recycled water would provide a greater proportion of the golf course irrigation requirement. Approximately 0.3, 0.6 and 0.8 mgd of recycled R-1 water for golf course irrigation will be generated respectively by Phases 1, 2 and 3 of Palamanui. See *Appendix A* for more details regarding wastewater flow projections.

4.16.4 Underground Injection Control

The Underground Injection Control (UIC) line follows Queen Ka'ahumanu Highway along the makai boundary of the Palamanui property and angles in a southeast direction at the southwest corner of the property. All injection wells will be operated in compliance with Hawai'i Administrative Rules, Title 11, Chapter 23, Underground Injection Control (UIC). Department

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of Health, State of Hawai'i, approval and permitting will be sought and received prior to any injection well construction and operation.

The only injection wells planned for the project are for backup disposal of wastewater effluent that cannot be used for irrigation in the event of excessive rainfall. These injection wells, which will need a UIC permit, will need to be located off site at a location below the UIC line that is yet to be determined because the entire Palamanui site is above the UIC line.

4.16.5 Power and Communications

The project site receives no electrical power and no communications services because its undeveloped state requires neither service. HELCO currently has an overhead 69 kV transmission line running through the utility easement. The existing electrical transmission line runs parallel to the Queen Ka'ahumanu Highway across the subject property. This line is a portion of the line connecting HELCO's Po'opo'omino and Keāhole switching stations.

The Keāhole Power Plant located makai of the subject property consists of 30 megawatt that is operational, a transformation station, and 56 additional mw that is 85% complete. This power plant is located in land designated as State Conservation District. HELCO's total system generating capacity is 233,700 kW and the system peak load was 177,900 kW, which occurred on December 30, 2002. The current generation reserve margin of 31.4% is adequate to serve the proposed project. An additional 40,000 kW generating capacity is planned to be installed at Keāhole Power Plant in the near future. See *Figure 4-11* for location of regional electricity resources.

4.17 SOCIO-ECONOMIC CONDITIONS

The Palamanui project site is located in a fast growing region of the State. Between 1990 and 2000, North Kona had a 28.1 percent increase in population. South Kohala showed a population increase of 43.7 percent growth over the same period. Overall, Hawai'i County has grown faster than the State as a whole in the last decade. The 2000 State Data Book reports that the population of Hawai'i County increased 23.6 percent from 1990 to 2000 compared with 9.3 percent increase for the State.

The expanding population of North Kona District is largely attributed to growth in visitor industry which is expected to continue its expansion. It is also important to note that visitors account for about 12% of the State's de facto population in 1997. Agriculture in the region includes coffee production, cattle ranching, fruit production, macadamia nuts, and vegetable cultivation. Smaller industries include timber, fishing, quarrying operations, construction and printing.

Population predictions for the West Hawai'i region indicate sufficient population to justify the construction of a higher education center serving 1,200 to 1,600 students by year 2010. Completion of the University Center at the project site in Kau would be a great benefit to the region by providing a permanent presence for higher education. This site is logical because the parcel is in close proximity to Kona International Airport at Keāhole, high technology developments (i.e. the Natural Energy Laboratory of Hawai'i, etc.), residential communities, and an array of employment centers in Kailua-Kona and West Hawai'i resorts.

4.18 PUBLIC AND SOCIAL SERVICES AND FACILITIES

Figure 4-12 illustrates location of existing regional public facilities for schools, fire, police and hospitals.

4.18.1 Schools

The Kona public school system consists of the Konawaena School complex, Ho'okena Elementary/Intermediate, Kahakai complex, and Kealakehe complex. Private schools also serve students in the region. See *Figure 4-12*.

4.18.2 Libraries

The North Kona region is currently served by three public libraries.

4.18.3 Police

The Hawai'i County Police Department provides police protection for the region. See *Figure 4-12*.

4.18.4 Fire

The Hawai'i County Fire Department provides fire protection services to the region out of the Kailua-Kona Station. This station is located on Palani Road above Queen Ka'ahumanu intersection. The State Airports Division maintains a crash/rescue unit at Kona International Airport at Keāhole; however, the equipment and personnel are restricted to airport emergencies. See *Figure 4-12*.

4.18.5 Health Care Services

The State Department of Health provides emergency ambulance service. Advanced life support ambulance units are located at the Lucy-Henriques Medical Center in Waimea, the Kailua-Kona Fire Station, the South Kohala Fire Station in Waimea, and the Captain Cook Fire Station. The Kona Hospital, operated by the State Department of Health, and the nearest to the project site, has 61 licensed beds, 44 of which are for acute care. The hospital also houses a basic life support ambulance unit. See *Figure 4-12*.

4.18.6 Postal Services

A total of 33 post offices and stations are located around the island of Hawai'i. The federal post office nearest to the project is located in Kailua-Kona.

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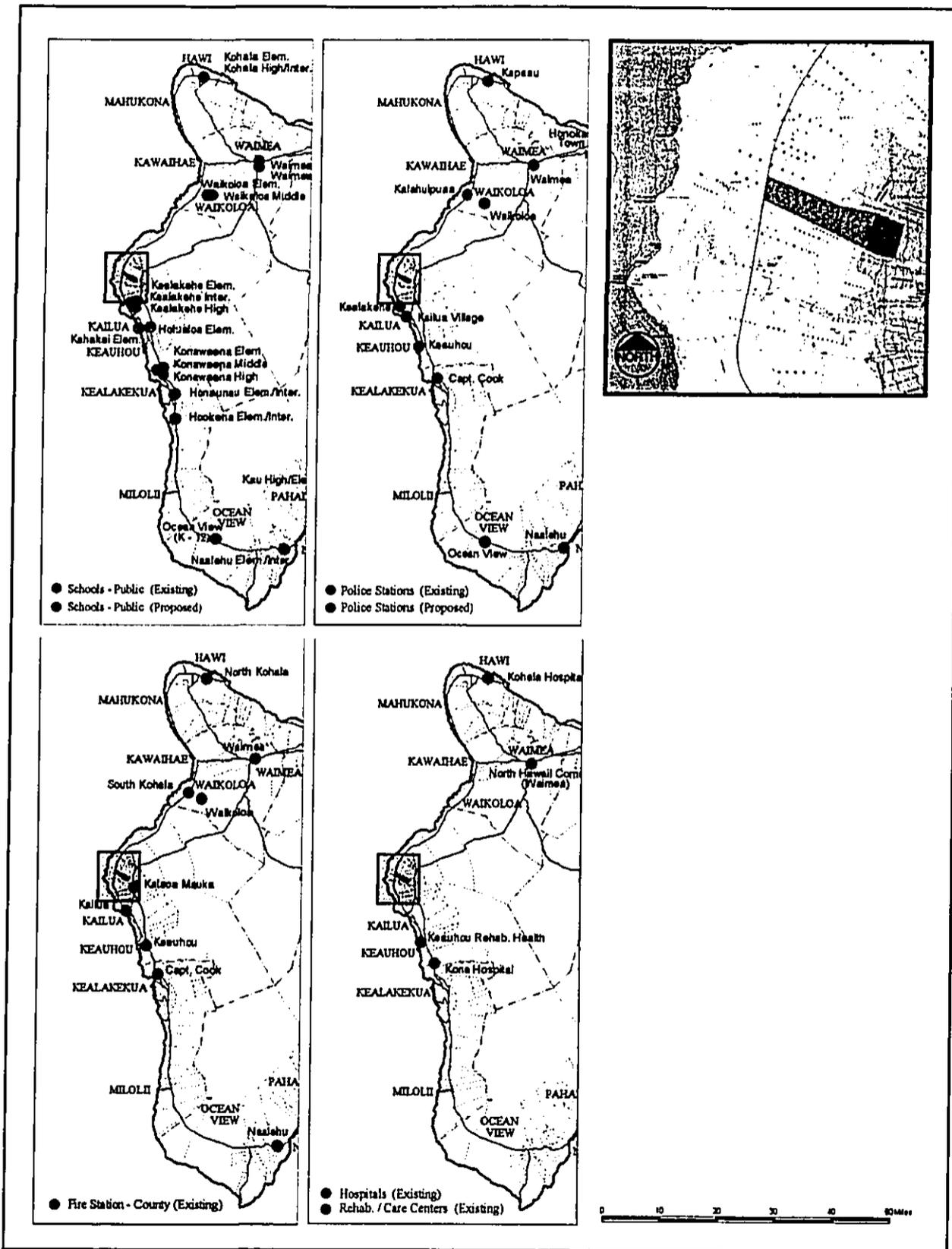


Figure 4-12

Regional Public Facilities – Schools, Police Stations, Fire Stations and Medical Facilities

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4.19 CULTURAL RESOURCES

A Cultural Impact Assessment (CIA) was completed for this project by Maria Orr (2003) to comply with Act 50 SLH 2000 and the State of Hawai'i Office of Environmental Quality Control (OEQC) Guidelines for Environmental Impact Statement law (Chapter 343, HRS) which includes an ethnographic survey. *Appendix D* includes the complete report.

The important cultural places and practices present at Palamanui include:

1. Certain habitation and agricultural features on the site.
2. Petroglyphs and trail segments.
3. Lava tube cave habitation features and caves with evidence of water collection practices in them.
4. Botanical resources important to Hawaiian practitioners including a significant regenerating luma forest containing important native trees and plants.
5. Land forms and view planes of geographic features important in this portion of the Kekaha region.

The project site was a part of Hu'ehu'e Ranch for many years. The area that will be affected by this project has been a working ranch for over one hundred years; and the project site has been impacted by ranching activities and feral animals such as goats, pigs, and donkeys. There are people currently living in the vicinity (Kekaha lands) who are fourth and fifth generation descendants of the original owners of Hu'ehu'e Ranch. There are also people currently living who worked on the ranch for a number of years. While the project site appears to be devoid of cultural remains due to the preponderances of lava from several ancient flows, a closer study reveals numerous sites and cultural resource features that attest to the ancient use of the area.

Despite the absence of references to Kau in the archival material, a field inspection reveals an abundance of cultural resources distributed throughout the landscape, in the form of ancient cave shelters, water collection caves, trails, ceremonial features and agricultural features. Kau also has a diverse range of endemic and indigenous flora, both in species and in habitat zones.

Significant Events. One of the most significant historic events in Kau is the 1801 lava flow which overran the makai lands of Kau. It is not known if anyone was living in the coastal area at that time. What is known is that the Great Fishpond of Kamehameha, the Pa'aiea Fishpond, was flourishing. People associated with the fishpond would most likely have lived nearby and farmed in the uplands. There is archaeological evidence of upland shelters and permanent habitation sites that were used through various periods of time. There was also evidence of fresh water collection places. It is therefore highly likely that the 1801 lava flow changed the lives of the people of Kau.

Summary of Land Resources and Use. The physical evidence of land use is in the form of stone ruins that have been preserved relatively intact, cultural remains such as artifacts, midden and charcoal recovered from surface and sub-surface studies. Clues regarding function and use of cultural remains can be extrapolated from the stories, songs, chants and ethno-historical observations that have survived. Several of these stone cultural remains were recorded during studies of Kau lands and also mentioned by the consultants (i.e. caves, platforms, mounds,

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walls, and enclosures). These are all evidence of both permanent and temporary use of the land and its diverse natural resources.

Ancient Land Use. While the traditional literature is largely silent on the subject of Kau, the cultural resources found on the site speak volumes. The permanent and temporary shelters, the midden at those sites and in the caves, the extended use of the lava tube systems, the habitation and agricultural complexes tell a story of ancient use of the land. People cultivated diverse natural resources (endemic/indigenous plants, bountiful marine resources, bountiful aquaculture), nearby on the coast as well as their own Polynesian-introduced cultigens; their staples and their medicine and ritual plants. In spite of current appearances, Kau and Kekaha was not barren. Neighbors to the north and south had extensive field systems (Lapakahi, Kalaoa, Kona Field Systems); and trade was always possible, even during times of war.

Historic Land Resources and Use (Post 1801). Although the Pa'aiea Fishpond was destroyed, the marine resources have survived. Families of Kekaha still take advantage of the entire coastline. The diverse botanical resources of Kau are still apparent today. There was an abundance of hala until recently; there still is an abundance of other medicine, craft and specialty lumber plants. There was a time, even in recent history, when people were allowed to share the bounty of the land, all they did as a courtesy was to let the konohiki, or the kahu of the land know that they were going to go gather or go fishing. That tradition is still a way of life in many communities. If one's mango tree is laden with fruit all you have to do is ask and the owner will gladly share with you. Neighbor still trades with neighbor for fruits, vegetables, hula plants, wood and fish. Therefore access to resources is a traditional way of life, a cultural practice.

Summary of Water Resources and Use. Although there are no streams, springs, or wells on Kau, there is evidence of fresh water resources using ancient water-collection methods of placing a gourd under drips in caves. Several of these cave resources were discovered during archaeological and cave fauna surveys. During recent site visits, some moisture was detected in caves.

The lands of Kau were once part of an ancient Hawaiian life system. Archaeological remains such as the enclosures, house platforms, petroglyphs, walls and mounds and numerous cave/sinkhole and lava tube systems show evidence of multiple uses of this land. Cultural resources still evident are the diverse collection of endemic ethno-botanical plants. Many of these are medicinal plants are still used today by lā'au lapa'au; plants used as dyes by crafters of kapa; and various species used for hula and lua practices and specialized woodcrafters.

Some means of providing access to rare medicinal plants or other plants used by qualified lā'au lapa'au practitioners and their students should be considered. The project area not only has diverse collections of endemic and indigenous plants, some endangered (halapepe, uhiuhi and aiea), it also has a range of traditional sites that were used in antiquity and in some cases, use until historic times. Consultants (Native Hawaiian kūpuna from this region) expressed concern that certain sites be protected and preserved. Given the botanical resources and the traditional sites, a plan to protect, manage and continue the study of valuable cultural resources and places on this land is necessary. The kūpuna should be involved in this planning process along with other interested persons and the projects' expert consultation team.

The interpretive program from these lands should recognize the connection between Hewahewa and these lands. It would be pono to ask the Hewahewa and Mahi families to participate in further interpretive planning for these lands; just as it would be apropos to

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include the consultants in discussions regarding the future of endemic/indigenous ethnobotanical plants on the land.

While no burials were found in the project area to date, the developer will follow proper protocols as required by the Hawai'i State Historic Preservation Division (SHPD) Burial Sites Program if any burial sites are discovered during the preparation and construction phases of the project.

As Hiluhilu project development planning continues, the owner has committed to support further cultural research including additional interviews, transcription of Kūpuna Site Visit, summarizing Kūpuna Site Visit, Hewahewa-Mahi research, Grantor-Grantee Index Research, Kekaulahao Research, and participation in formulation of an integrated natural cultural resource management plan for the project and project area.

The INCRMP will include the following elements regarding the preservation of the cultural resources:

- Active participation by the developer and representative from native Hawaiian kūpuna from the Kekaha region.
- Consultation with members of the Hewahewa and Mahi families and the University of Hawai'i on interpretive programs.
- Use of Maria Orr's study and other EIS studies conducted for this project to coordinate cultural management planning with Dry Forest preservation and preservation of endangered species.
- Allowance for amendments to the plan to incorporate new information as it is received by the developer or kūpuna.
- Use of the INCRMP to guide landscaping design for the project.

4.20 ARCHAEOLOGICAL RESOURCES

An archaeological inventory study was completed to identify the locations of the archaeological sites throughout the project site. Rechtman Consulting, LLC conducted archaeological inventory fieldwork from August 28 through November 12, 2002. The study area is a portion of a larger (1000-acre) property that was subject to previous archaeological inventory surveys. Rechtman's report presents the results of the additional fieldwork, and should be considered an addendum to the original archaeological inventory survey. Background information is found in the original study (Schilz et al. 1990), and to a recent Cultural Impact Assessment (Orr 2003) prepared for the current project.

A total of 83 archaeological sites were recorded during the archaeological inventory study for the Palamanui project. These sites include sites recorded by earlier archaeological studies. Site locations are shown on *Figure 4-13*. *Table 4-4* presents a listing of the sites, correlated with the earlier studies where possible.

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The most frequent type of archaeological site is Precontact temporary habitation. Of these, twelve are enclosures, ten are lava tubes, six are multi-feature complexes, four are terraces, four are modified outcrops, four are platforms, and two are pavements. Six sites were interpreted as Precontact permanent habitations; three of these are platforms, one is a terrace, and two are multi-feature complexes. One of these may have been associated with the large fishpond (Pa'aiea) reported to have existed along this section of coastline prior to being destroyed by the 1801 lava flow. There are fourteen trails and trail segments recorded, three cairn sites, three pāhoehoe excavations, two isolated finds in lava tubes, and one ceremonial site. Two groupings of petroglyphs were found, one associated with a trail and temporary habitation, and one with a permanent habitation complex. Nine Historic Period sites were identified: two animal enclosures; two boundary markers, a wall, a hunting blind, a road, and two habitation sites. These sites date from the late nineteenth and early twentieth centuries and appear to have been associated with Hu'ehu'e' ranch activities.

Archaeological studies found that the Palamanui project site once provided temporary and permanent habitation activities prior to Western contact (Precontact). Evidence of these activities are supported by the findings of c-shaped enclosures, lava tubes, multi-feature complexes, terraces, modified outcrops, platforms, and pavements scattered throughout the project site. In addition, trails, trail segments, cairn, and petroglyphs are also present within the project area. Agricultural activities were also sustained at the project site.

Historic period activities include animal enclosures, boundary markers, walls, hunting blind, a road and two habitation sites. These sites are associated with the Hu'ehu'e' ranch activities. A complete report of the findings is provided in *Appendix C*.

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<i>SIHP Site #</i>	<i>Site Description</i>	<i>Significance</i>	<i>Treatment Recommendation</i>
14338	Isolated find in lava tube	D	No further work
14339	Precontact temporary habitation lava tube	D	Data recovery
14340	Animal pen	D	No further work
14341	Precontact permanent habitation platform	D	Data recovery
14342	Precontact agricultural complex	D	Data recovery
14343	Precontact temporary habitation terrace	D	Data recovery
14344	Precontact temporary habitation enclosure	D	Data recovery
14345	Precontact temporary habitation C-shape	D	Data recovery
14346	Precontact temporary habitation lava tube	D	Data recovery
14347	Precontact temporary habitation enclosure	D	Data recovery
14348	Alignment	D	No further work
14349	Mound	D	No further work
14350	Precontact temporary habitation lava tube	D	Data Recovery
14351	Precontact temporary habitation complex	D	Data Recovery/Preservation
14354	Precontact permanent habitation terrace	D	Data recovery
14357	Trail	D	Data recovery
14358	Isolated find in lava tube	D	No further work
14359	Cattle enclosure	D	No further work
14360	<i>Heiau</i>	D, E	Preservation
14362	Trail	D	Preservation /NFW
14365	Precontact temporary habitation lava tube	D	Data recovery
14366	Precontact temporary habitation platform	D	Preservation
14367	Precontact temporary habitation lava tube	D, E	Preservation
14368	Precontact permanent habitation complex	D	Preservation
14369	"Hunting blind"	Not Significant	No further work
14371	Precontact permanent habitation platform	D	Data recovery
14372	Precontact temporary habitation platform	D	Data recovery
14373	Precontact temporary habitation lava tube	D	Data recovery
14374	Precontact temporary habitation complex	D	No further work

Table 4-4

Site Significance and Recommended Treatments

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<i>SIHP Site #</i>	<i>Site Description</i>	<i>Significance</i>	<i>Treatment Recommendation</i>
14375	Precontact lava tube habitation complex	D	Data recovery
14376	Trail	D	No further work
14377	Wall	D	No further work
14378	Cairns	D	No further work
14404	Trail	D	No further work
23862	Precontact permanent habitation complex	D, E	Preservation
23863	Cairn	D	No further work
23864	Precontact temporary habitation	D, E	Preservation
23865	Historic road bed	D	Preservation/NFW
23866	Precontact temporary habitation pavement	D	Data recovery
23867	Precontact temporary habitation C-shape	D	No further work
23868	Trail	D	No further work
23869	Historic boundary marker	D	No further work
23870	Precontact temporary habitation complex	D	Preservation
23871	Historic fence line	Not Significant	No further work
23872	<i>Pāhoehoe</i> evcavation	D	No further work
23873	Trail	D	No further work
23874	<i>Pāhoehoe</i> excavation	D	No further work
23875	Trail	D	Preservation
23876	Precontact temporary habitation modified outcrop	D	No further work
23877	Trail	D	No further work
23878	Trail	D	No further work
23879	<i>Pāhoehoe</i> excavation	D	No further work
23880	Precontact temporary habitation platform	D	No further work
23881	Precontact temporary habitation C-shape	D	No further work
23882	Trail	D	No further work
23883	Trail	D	No further work
23884	Trail	D	No further work
23885	Precontact temporary habitation complex	D	Data recovery
23886	Precontact temporary habitation enclosure	D	No further work
23887	Precontact temporary habitation pavement	D	Data recovery

Table 4-4 (Continued)

Site Significance and Recommended Treatments

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<i>SIHP Site #</i>	<i>Site Description</i>	<i>Significance</i>	<i>Treatment Recommendation</i>
23888	Precontact temporary habitation modified outcrop	D	No further work
23889	Trail	D	No further work
23890	Trail	D	No further work
23891	Precontact temporary habitation terrace	D	No further work
23892	Precontact temporary habitation enclosure	D	No further work
23893	Precontact temporary habitation lava tube	D	No further work
23894	Precontact temporary habitation complex	D	Data recovery
23895	Precontact temporary habitation modified outcrop	D	Data recovery
23896	Precontact temporary habitation enclosure	D	Data recovery
23897	Precontact temporary habitation complex	D	Data recovery
23898	Historic habitation enclosure	D	No further work
23899	Precontact temporary habitation enclosure	D	Data recovery
23900	Precontact temporary habitation terrace	D	No further work
23901	Cairn	D	No further work
23902	Precontact temporary habitation terrace	D	Data recovery
23903	Precontact temporary habitation complex	D	Data recovery
23904	Precontact temporary habitation modified outcrop	D	Data recovery
23905	Precontact temporary habitation enclosure	D	Data recovery

Table 4-4 (Continued)

Site Significance and Recommended Treatments

Section 5.0
Relationships of the Proposed Project to
Existing Plans and Policies

5.0 RELATIONSHIPS OF THE PROPOSED PROJECT TO EXISTING PLANS AND POLICIES

5.1 OVERVIEW

An important consideration in evaluating the potential impacts of a proposed action on the environment is how it may conform or conflict with approved or proposed land use plans, policies, and controls for the affected area. In addition to State of Hawai'i policies and controls, the EIS addresses applicable Federal regulations regarding endangered species and equal accessibility. This section will discuss the consistency of the proposed Palamanui (Hiluhilu Development) project with respect to the County of Hawai'i General Plan, County of Hawai'i Zoning, West Hawai'i Regional Plan, Master Plan for Kailua-Kona, and the Keāhole to Kailua ("K to K") Development Plan.

5.2 U.S GOVERNMENT PLANS AND CONTROLS

5.2.1 Endangered Species Act

The Endangered Species Act of 1973 provides a legal means by which identified ecosystems that are determined to be essential to the sustainability of an endangered or threatened species can be conserved. Under this Act, the U.S. Fish and Wildlife Service in the Department of the Interior is responsible for all terrestrial and freshwater species, as well as migratory birds.

Discussion: Fifteen threatened or endangered plant species were identified and will be preserved and protected on the project site. Further, while no endangered animal species were noted during the field investigations, various migratory birds and avian species that are known to frequent the coastal areas in North Kona may utilize the site between the months of September and May. Small numbers of the endangered endemic Hawaiian subspecies of the Dark-rumped Petrel (*Pterodroma phaeopygia sanwicensis*) or Ua'u (a pelagic seabird) may also over-fly the project site between the months of May and October (Banko, 1980 and Harrison, 1990). The project site contains no suitable nesting habitat for this species.

5.2.2 American with Disabilities Act of 1991

In 1991, the Federal government enacted the American with Disabilities Act to provide equal accessibility for persons with disabilities. Part of this statute is having building designs consider the needs of persons with disabilities. Chapter 103-50 of the Hawai'i Revised Statutes (HRS) states, "... all plans and specifications for the construction of public buildings, facilities, and sites shall be prepared so that the buildings, facilities, and sites are accessible to and usable by persons with disabilities." The Disability and Communication Access Board shall adopt rules for the design of buildings, facilities, and sites, by or on behalf of the state and counties.

Discussion: The Hiluhilu Development project will be cognizant of the design of buildings and facilities being accessible to persons with disabilities. This project will provide accessible designs of buildings, facilities, and sites in compliance with the policies set forth by the Disability and Communication Access Board. Facilities and structures shall comply with the requirements of the Americans with Disabilities Act.

Facilities will be designed to meet the requirements of the Americans with Disabilities Act, the Fair Housing Act, and the requirements of Hawai'i Revised Statutes (HRS) Section 103-50. Parking for facilities will be designed to comply with Hawai'i Administrative Rules (HAR),

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Title 11, Chapter 219, Parking for Persons with Disabilities, Section 11-219-14. Buildings, facilities and sites will also incorporate the best design practices as recommended by the U.S. Department of Transportation for designing sidewalks and trails and the U.S. Access Board for designing outdoor developed areas, recreation areas, or other current documents providing for accessibility.

Elements of the project planned to be dedicated to the County or State of Hawai'i may be subject to a review process by the Disability and Communication Access Board.

Hiluhilu Development will refer to Title III of the ADA which covers privately owned places of public accommodation and commercial facilities for the proposed private infrastructure systems and amenities for commercial and public use within Palamanui. This includes, but is not limited to, elements such as the semi-public 18-hole golf course, research laboratories, commercial retail spaces, commercial residential spaces, and public walking surfaces. Guidelines provided by the Disability and Communication Access Board including the U.S. Architectural and Transportation Barriers Compliance Board documents will be reviewed.

Where parking is provided, Hiluhilu Development will comply with Hawai'i's Administrative Rules Title 11, Chapter 219, "Parking for Persons with Disabilities" which became effective January 23, 2003.

5.3 STATE OF HAWAII PLANS AND CONTROLS

5.3.1 State Land Use Law, Chapter 205, Hawai'i Revised Statutes

The project site is currently designated Conservation on its makai end (274.9 acres) and Agricultural on its mauka end (450.3 acres) as shown on the State Land Use Boundary Map. (Figure 5-1). The project requires a boundary change by the State Land Use Commission to redesignate the project site for urban use.

Section 205-17, Hawai'i Revised Statutes (HRS) requires that the State Land Use Commission consider the following in any petition for reclassification of district boundaries:

205-17(1), H.R.S. *The extent to which the proposed reclassification conforms to the applicable goals, objectives, and policies of the Hawai'i state plan and relates to the applicable priority guidelines of the Hawai'i state plan and the adopted functional plans;*

205-17(2), H.R.S. *The extent to which the proposed reclassification conforms to the applicable district standards.*

Land Use Commission (LUC) Rule 15-15-18 provides the following standards for determining "U" urban district boundaries:

(1) *It shall include lands characterized by "city-like" concentrations of people, structures, streets, urban level of services and other related land uses;*

(2) *It shall take into consideration the following specific factors;*

(A) *Proximity to centers of trading and employment except where the development would generate new centers of trading and employment;*

(B) *Availability of basic services such as schools, parks, wastewater systems, solid waste disposal, drainage, water, transportation systems, public utilities, and police and fire protection;*
and

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- (3) *It shall include lands with satisfactory topography, drainage, and reasonably free from the danger of any flood, tsunami, unstable soil condition, and other adverse environmental effects;*
- (4) *Land contiguous with existing urban areas shall be given more consideration than non-contiguous land, and particularly when indicated for future urban use on state or county general plans;*
- (5) *It shall include lands in appropriate locations for new urban concentrations and shall give consideration to areas of urban growth as shown on the state and county general plans;*
- (7) *It shall not include lands, the urbanization of which will contribute toward scattered spot urban development, necessitating unreasonable investment in public infrastructure or support services.*

Discussion:

LUC Rule 15-15-18(1) It shall include lands characterized by "city-like" concentrations of people, structures, streets, urban level of services and other related land uses

The development will create a master planned community with a mix of residential units, mixed commercial and office units and a University Village center providing an urban level of services to its residents and to the users of the neighboring University of Hawai'i Center at West Hawai'i (UHCWH).

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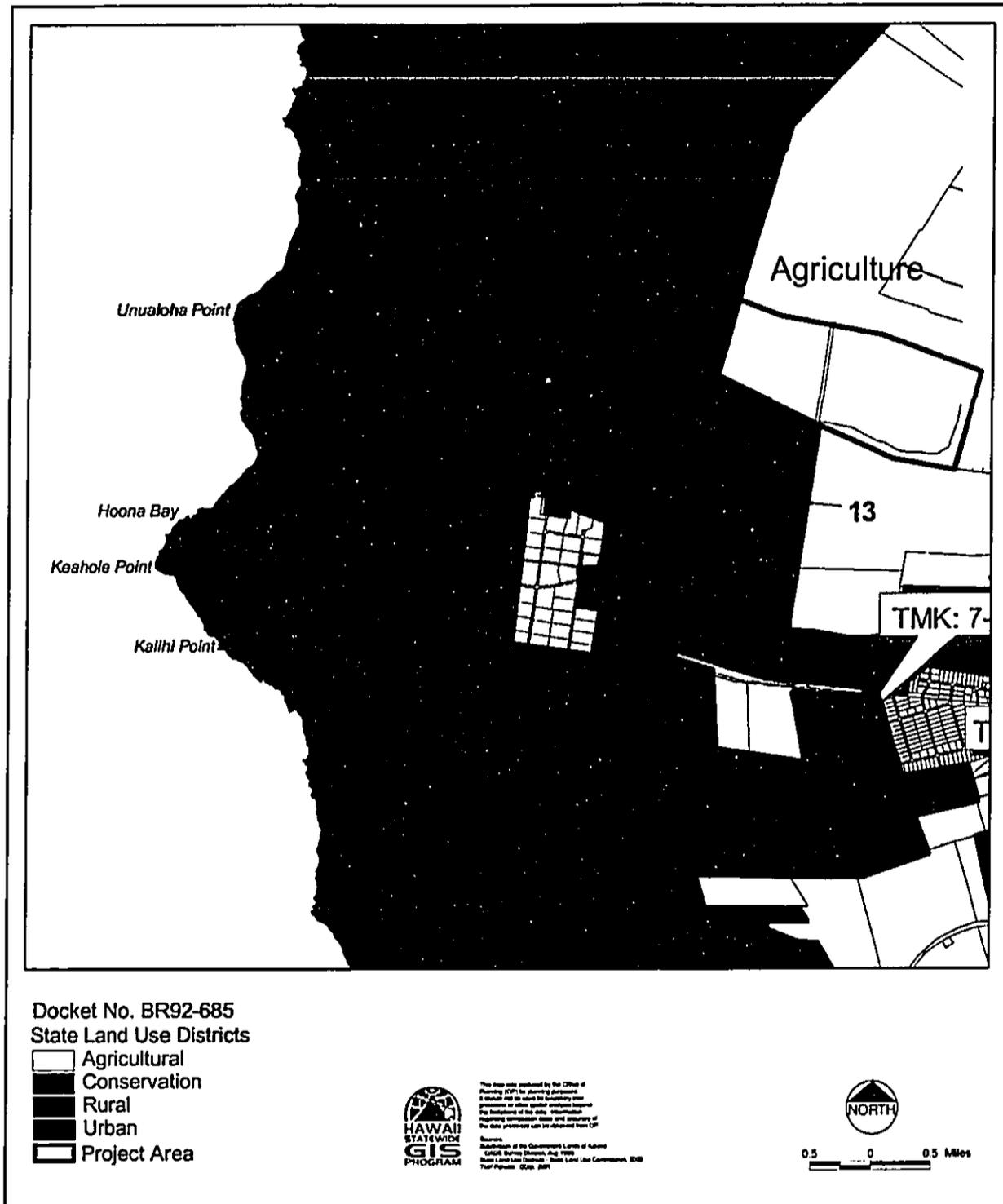


Figure 5-1
 State Land Use: Conservation and Agriculture

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LUC Rule 15-15-18(2)(A) Proximity to centers of trading and employment except where the development would generate new centers of trading and employment;

The commercial uses would support residents and the adjoining UHCWH offices which would support the UHCWH site, and provide new employment in medical and R&D activities. The project site is approximately one mile north of the Kona International Airport at Keāhole access. The industrial and some of the commercial areas servicing Kailua-Kona are located between the project site and Palani Road in Kailua-Kona.

LUC Rule 15-15-18(2)(B) Availability of basic services such as schools, parks, wastewater systems, solid waste disposal, drainage, water, transportation systems, public utilities, and police and fire protection

The project site is within the area served by schools, police and fire protection for Kailua-Kona. Hiluhilu Development will be consulting with the State Department of Education to determine its fair share contribution for impacts of this development on the public schools. Parks for the area include the Old Kona Airport site as well as the Kekaha Kai Site Park. The project will include a private wastewater treatment plant which will be designed to accommodate the UHCWH site as well as the project site. Treated wastewater will be used for golf course and other landscape irrigation to conserve use of groundwater. A solid waste disposal plan including composting green waste will be used to minimize impacts to the County landfill site, which will receive solid waste from the project (Petition) area. All surface water drainage will be retained within the project.

The Developer (Petitioner) is working with the County of Hawai'i Department of Water Supply, the Department of Land and Natural Resources and other affected landowners in the area to upgrade the Department of Water Supply's water distribution and storage systems to provide potable water to the project site and the UHCWH site. The Developer will be drilling wells on the project site for nonpotable irrigation water for the golf course and other landscaping areas on the project. The Developer will also be building public roads to connect the project site and the UHCWH site to the Queen Ka'ahumanu Highway. One road will connect to the existing road that runs through the Mākālei Estates Subdivision to the Māmalahoa Highway. The Developer will obtain electrical power from the Hawai'i Electric Light Company system and will be using energy efficient designs for the buildings in the project site.

LUC Rule 15-15-18(3) It shall include lands with satisfactory topography, drainage, and reasonably free from the danger of any flood, tsunami, unstable soil condition, and other adverse environmental effects.

The project site has appropriate topography suitable for urban development. The project site is on the southwestern slope of Mt. Hualālai, between the elevations of 150 feet above mean sea level (MSL) to 900 feet above MSL. The terrain slopes generally from northeast to southwest. Slopes vary from 5 to 10 percent on average, but approach 15% in isolated areas. Slopes are less pronounced in the area shown for the proposed University Village. The land is comprised of predominately rocky material typical of North Kona land. The project site is in Flood Zone X. There are no streams or surface water drainage from the project site. The project is mauka of the Queen Ka'ahumanu Highway and is not susceptible to tsunami or ocean storm hazards.

205-17(3) The impact of the proposed reclassification on the following areas of state concern:

- (A) *Preservation or maintenance of important natural systems or habitats;*
- (B) *Maintenance of valued cultural, historical, or natural resources;*

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(C) Maintenance of other natural resources relevant to Hawai'i's economy, including, but not limited to, agricultural resources;

(D) Commitment of state funds and resources;

(E) Provision for employment opportunities and economic development; and

(F) Provisions for housing opportunities for all income groups, particularly the low, low-moderate, and gap groups;

Discussion:

A) Preservation or maintenance of important natural systems or habitats

See discussion in Section 5.2 on Section 226-11, HRS.

B) Maintenance of valued cultural, historical, or natural resources

See discussion in 5.2 on Section 226-12, HRS.

(C) Maintenance of other natural resources relevant to Hawai'i's economy, including, but not limited to, agricultural resources

The soil classification for the project site is Land Study Bureau E. The project site has no cultivatable land. Rainfall in the upper area of the site is marginal and very inadequate for agriculture in the middle and lower areas of the site. The portion of the project below the 1,000-foot elevation level is not covered by the Agricultural Lands of Importance in the State of Hawai'i (ALISH) study. Any remaining area at the mauka end of the project site which could fall within the ALISH classification would comprise only a very small area. The soil study conducted by Yusuf Tamimi concluded that given the marginal productivity of the land and the cost of grading, providing access and providing irrigation water, the project site was not suitable for commercial agriculture. Reclassification of the project site to Urban classification would not remove any land suited for agriculture.

(D) Commitment of state funds and resources

Development of the project will result in the commitment of state funds and resources to provide supporting facilities and services. The financial impact analysis (*Appendix I*) shows that the anticipated costs to the State and County of Hawai'i will be more than offset by the revenues that will result from the development.

(E) Provision for employment opportunities and economic development

The project will provide employment of approximately 200 jobs per year during the construction phases of the infrastructure and buildings. It is projected that this project will provide approximately 1,000 permanent jobs by 2010. The UHCWH will provide additional employment for faculty and staff. The University programs will provide training opportunities for students.

(F) Provisions for housing opportunities for all income groups, particularly the low, low-moderate, and gap groups

The developer will develop a plan to provide affordable housing as required by the County Office of Housing and Community Development under its standards for residential and commercial development.

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That plan will involve construction of a minimum of 50 rental units and 50 units to be sold in fee to persons meeting median income and asset guidelines included under the plan. The units will be built within the project site.

5.3.2 State Land Use Boundary Amendment

Approximately 274.9 acres of the project site is located within the State Conservation District, and 450.3 acres of the project site is located within the Agricultural District. Hiluhilu Development LLC will be requesting the State Land Use Commission for reclassification of the entire project site from the Conservation District and Agricultural District to the State Urban District. See *Figure 5-1* for state land use boundaries.

5.3.3 Hawai'i State Plan

An assessment of compliance of the requested actions to the applicable goals, objectives, and policies of the Hawai'i State Plan, Chapter 226, Hawai'i Revised Statutes, and applicable priority guidelines will be covered under this section. Priority guidelines relating to the economy, housing, population growth, transportation, facility systems, and the physical environment (land based, shoreline, and marine resources; scenic, natural beauty, and historic resources; land, air, and water quality) will be discussed as they relate to the proposed Hiluhilu development.

It is the goal of the Hawai'i State Plan to achieve "a desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people." (Hawai'i State Plan, Chapter 226, Hawai'i Revised Statutes) Objectives and policies of the State Plan which are relevant to Hiluhilu Development include the following:

Section 226-5: Population

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

(b)(2) Encourage an increase in economic activities and employment opportunities on the Neighbor Islands consistent with community needs and desires.

Discussion: Buyers of homes in the proposed residential community who migrate from the mainland U.S. and foreign countries will directly increase the population of the area. Increased demand for labor caused by development of the project, and other development projects in the region, will indirectly contribute to local population growth as State of Hawai'i (as well as possibly some out-of-state) residents living outside of the county migrate to take advantage of increased employment opportunities. The mix of residential, golf course, University, medical and technical park land uses on the subject property will contribute long-term employment opportunities, government revenue generation, additional recreational resources, an increased housing stock, and a moderate population growth in the area. These increases in economic activity and employment opportunities are consistent with community needs and desires.

Section 226-10: Economy – potential growth activities

(b)(8) Develop, promote, and support research and education and training programs that will enhance Hawai'i's ability to attract and develop economic activities of benefit to Hawai'i.

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Discussion: The project will provide land for commercial activities, medical and research and development activities with appropriate supporting infrastructure. The project and the University Village will provide facilities that would assist the establishment of the University of Hawai'i Center at West Hawai'i. Palamanui will provide opportunities for the expansion of medical services and other related technology oriented businesses. It will work with other high technology research and development facilities and organizations such as UH West Hawai'i and the Natural Energy Laboratory of Hawai'i (NELH) to support growth in this sector.

Preservation of the dryland forest, archaeological sites and cultural stewardship will promote jobs in both cultural and ecological services and create new opportunities for economic choice and benefit to Hawai'i.

The proposed University of Hawai'i Center at West Hawai'i (UHCWH) will provide more opportunities for economic development benefits to Hawai'i. The UHCWH will become a magnet for more economic diversification for this region. Palamanui and UH West Hawai'i will work synergistically to promote education and economic benefits to Hawai'i.

Section 226-10.5: Economy – information industry

(b)(5) *Provide opportunities for Hawai'i's people to obtain job training and education that will allow for upward mobility within the information industry.*

Discussion: Palamanui is designed to attract high tech and international residents along with local residents from other parts of the islands. This will provide greater opportunities for upward mobility in the information industry since these sectors are part of the information industry. As part of the University Village, the community will be sophisticated and connected to the global information age. It will be a local community with ties to the international community which increases opportunities to participate in the information industry.

The proposed Technology Park will also provide job opportunities in the information industry field. The project will also assist in providing opportunities in job training and education by assisting the UHCWH in establishing itself at its permanent location.

Section 226-11: Physical Environment – Land-based, Shoreline, and Marine Resources

- (a) *Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:*
- (2) *Effective protection of Hawai'i's unique and fragile environmental resources.*
- (b) *To achieve the land, air, and water quality objectives, it shall be the policy of the State to:*
- (1) *Exercise an overall conservation ethic in the use of Hawai'i's natural resources.*
 - (3) *Take into account the physical attributes of areas when planning and designing activities.*
 - (4) *Manage natural resources and environs to encourage their beneficial and multiple uses without generating costly or irreparable environmental damage.*
 - (5) *Manage natural resources and environs to encourage their beneficial and multiple uses without generating costly or irreparable environmental damage.*
 - (6) *Encourage the protection of rare or endangered plant and animal species and habitats native to Hawai'i.*
 - (8) *Pursue compatible relationships among activities, facilities, and natural resources.*

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- (9) *Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.*

Discussion: The project site at Hiluhilu is characteristic of other North Kona/South Kohala land situated inland from the coastline. The project has been designed with consideration of the natural features on the site and, where possible, their preservation. An Integrated Natural Cultural Resource Management Plan will be developed which addresses preservation plans and mitigation strategies.

The project proposes to conserve the sites unique and natural resources. A unique dryland forest preserve is being created with approximately 65 acres. Significant archaeological sites and lava tube environments are also being protected. Smaller sites of native plants will be protected by exclosures. Endemic and indigenous species will be used and encouraged in the landscaping. Construction activity will work around sensitive nesting seasons of the 'io (Hawk). Portions of ancient trails are being preserved. Hiluhilu Development is working with local conservation groups and area kūpuna in developing management and stewardship programs to protect these resources. Specifically, a plan for preservation of the dry forest preserve is being undertaken in conjunction with the North Kona Dry Forest Working Group. Exceptional trees outside the dry forest preserve area that were noted on the site will be preserved to the extent possible. Work is also underway on plans for preservation of archaeological features to be reviewed and approved by the State Historic Preservation Division. A cave fauna study has been conducted and appropriate preservation and mitigation strategies based on the recommendations of that study will be addressed in the Integrated Natural Cultural Resource Management Plan.

The compatible mixture of uses and activities at the project will provide ample opportunity for the residents and public to enjoy and learn about the natural resources of this area.

One of the purposes of the development is to offer golf and other recreational activities which involve the natural environment. The compatible mixture of uses and activities will provide ample opportunity for both the residents and public to enjoy and learn of the Hiluhilu Development area. The Hiluhilu Development will also promote more recreational and educational opportunities through the uses of the golf course, project park space and UHCWH.

Section 226-12: Physical Environment – Scenic, Natural Beauty, and Historic Resources

- (a) *Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawai'i's scenic assets, natural beauty, and multi-cultural/historical resources.*
- (b) *To achieve the scenic, natural beauty, and historic resources objective, it shall be the polity of this State to:*
- (1) *Promote the preservation and restoration of significant natural and historical resources.*
 - (2) *Provide incentives to maintain and enhance historic, cultural, and scenic amenities.*
 - (3) *Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean scenic landscapes, and other natural features.*
 - (4) *Protect those special area, structures, and elements that are an integral and functional part of Hawai'i's ethnic and cultural heritage.*

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- (5) *Encourage the design of developments and activities that complement the natural beauty of the islands.*

Discussion: The project archaeologist, Robert Rechtman, recorded and inventoried 83 archaeological sites and made recommendations for treatment of 12 of those archaeological sites under a preservation plan to be approved by the State Historic Preservation Division.

The project botanist, Patrick Hart, surveyed the project site and made recommendations concerning the preservation of a Dry Forest area and certain trees found in other parts of the project. Those recommendations will be used in the preparation of the Integrated Natural Cultural Resource Management Plan. The management plan will include a long-term plan for management for endangered plants with monitoring. The plan will be developed in conjunction with input from the North Kona Dry Forest Working Group which includes the Division of Forestry and Wildlife of DLNR (DOFAW) for a Dry Forest Preserve. The plan will include recommendations to conduct a survey for nesting Io in the project site. If such nests are found, the developer will refrain from grubbing or tree-felling in the area until after nesting pairs have finished breeding.

Plans will include preservation of the Dry Forest area and preservation of significant archaeological features. In addition to these preservation areas, landscape planning and grading will include leaving certain areas in their original condition to preserve a sense of place, retaining significant view planes, preserving to the extent possible, the trees and plants identified as important in the botanical study and consulting with the University of Hawai'i and others on interpretational programs for preserved features and other areas of interest on the land.

The natural beauty in the project area is precisely why this project is being proposed with an open space oriented development. Scenic views and open space will be maintained and enhanced for the benefit of homeowners and regional residents who will have access for passive and active recreation purposes. The development of the residential areas will complement the aesthetics of the West Hawai'i region.

Sect. 226-13: Physical Environment – Land, Air and Water Quality

- (a) *Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:*
- (1) *Maintenance and pursuit of improved quality in Hawai'i's land, air, and water resources.*
 - (2) *Greater public awareness and appreciation of Hawai'i's environmental resources.*
- (b) *To achieve the land, air, and water quality objectives, it shall be the policy of this State to:*
- (1) *Foster educational activities that promote a better understanding of Hawai'i's limited environmental resources.*
 - (2) *Promote the proper management of Hawai'i's land and water resources.*
 - (3) *Promote effective measures to achieve desired quality in Hawai'i's surface, ground, and coastal waters.*
 - (8) *Foster recognition of the importance and value of the land, air and water resources to Hawai'i's people, their cultures and visitors.*

Discussion: The land and water resources of the project site will be properly managed. Numerous mitigation measures will be designed and implemented to assure that land, air, and

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water are not significantly impacted by the project. Stormwater runoff will be controlled through the use of detention basins and drywells. Wastewater will be handled through a private wastewater treatment plant which will use the treated wastewater for irrigation. All of these measures will be designed in consultation with and with the approval of the State Department of Health. Mitigation will include use of Best Management Practices and appropriate monitoring to address non-point source pollution. The groundwater study shows that the project requirements will be within the water resource capabilities of the aquifer. Fertilizer and pesticide application at the golf course will be professionally managed by a certified Golf Course Superintendent. An Integrated Pest Management (IPM) program will be instituted to employ strict management and overall reduced pesticide usage.

Section 226-21: Socio-Cultural Advancement – Education

- (b)(2) *Ensure the provision of adequate and accessible education service and facilities that are designed to meet individual and community needs.*
- (b)(4) *Promote educational programs which enhance understanding of Hawai'i's cultural heritage.*
- (b)(5) *Provide higher educational opportunities that enable Hawai'i's people to adapt to changing employment demands.*
- (b)(8) *Emphasize quality educational programs in Hawai'i's institutions to promote academic excellence.*

Discussion: Palamanui will be designed as a community of lifelong learning attracting people interested in continuous learning. The market study focused on areas of interest related to programs and curriculum offered by the University of Hawai'i who is a partner in creating the University Village. Palamanui will work with the University of Hawai'i and other groups in developing programs of conservation of resources that have strong educational components. The performing arts center will also support educational programs.

The developer has identified cultural practices and values associated with the project area and through its cultural practices consultant, archaeologist and planner, is engaged in ongoing discussions to develop an Integrated Natural Cultural Resources Management Plan under which residents and the University of Hawai'i will foster increased awareness of practices associated with this area and the botanical resources. This project will assist in improving access to higher educational opportunities by assisting the UHCWH with infrastructure.

Section 226-23: Socio-Cultural Advancement – Leisure

- (a) *Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.*
- (b) *To achieve the leisure objective, it shall be the policy of this State to:*
 - (1) *Provide a wide range of activities and facilities to fulfill the cultural, artistic, recreational needs of all diverse and special groups effectively and efficiently.*
 - (3) *Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.*

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- (4) *Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historic, geological, or biological values while ensuring that their inherent values are preserved.*
- (5) *Ensure opportunities for everyone to use and enjoy Hawai'i's recreational resources.*
- (6) *Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.*
- (10) *Assure adequate access to significant natural and cultural resources in public ownership.*

Discussion: The project is concerned with fulfilling this objective and policies for recreation. The recreational potential of this site is maximized through the development of a golf course, clubhouse, parks, preserves and other community facilities. Ocean and mountain views will be part of the recreational experience and development standards will preserve those views. Five acres of active and five acres of passive recreational resources will also be developed.

The primary users of the recreational facilities will be the project's residents with availability for the public as well. Native and endemic plant species will be reintroduced in golf course buffer areas along property boundaries and in some residential and mixed use areas.

The archaeological and botanical preserve areas offer an opportunity for those with ties to the Kekaha area, native Hawaiian cultural practitioners, students and others in the community to learn about and use those resources.

Section 226-25: Socio-Cultural Advancement – Culture

- (a) *Planning for the State's socio-cultural advancement with regard to culture shall be directed towards the achievement of the objective of the enhancement of cultural identities, traditions, values, customs, and arts of Hawai'i's people.*
- (b) *To achieve the culture objective, it shall be the policy of this State to:*
 - (1) *Foster increased knowledge and understanding of Hawai'i's ethnic and cultural heritages and the history of Hawai'i*
 - (2) *Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawai'i's people and which are sensitive and responsive to family and community needs.*
 - (3) *Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawai'i.*

Discussion: Archaeological and cultural resources will be protected throughout the development. An Integrated Natural Cultural Resource Management Plan will be developed. This plan will include a process under which the developer will engage in ongoing consultation to identify, preserve and promote cultural practices related to this area. The process will include review to see that the process is also consistent with the developer's obligations to comply with archaeological preservation plans approved by the State Historic Preservation Division and the Dry Forest management plan developed in conjunction with the North Kona Dry Forest Working Group. Recommendations in the archaeological inventory survey and the cultural impact assessment will be followed to the maximum extent practicable. The site plan preserves the significant features identified in the studies. A Cultural Advisory Committee consisting of local kūpuna and knowledgeable individuals has been formed and advises Hiluhilu Development as it proceeds in development of the site.

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This project will be developed with regard to cultural heritage as one of the top priorities. Also mentioned above, the UHCWH will have educational programs promoting the understanding and achievement of the cultural heritage and history of Hawai'i.

Section 226-27: Socio-Cultural Advancement – Government

- (a) *Planning for the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the objectives.*
- (b) *To achieve the culture objective, it shall be the policy of this State to:*
 - (5) *Assure that government attitudes, actions and services are sensitive to community needs and concerns.*

Discussion: The project will provide opportunities for socio-cultural advancement with regard to government action. Community needs and concerns will be addressed during community meetings and charrettes for this project.

Section 226-107: Quality Education

- (5) *Increase and improve the use of information technology in education and encourage programs which increase the public's awareness and understanding of the impact of information technologies on our lives.*
- (6) *Pursue the establishment of Hawai'i's public and private universities and colleges as research and training centers of the Pacific.*

Discussion: Planning for this project was conducted with all these policies in mind. One of the priorities of this project was to assist the University of Hawai'i to establish its permanent West Hawai'i Center. To that end, the developer has engaged in joint planning with the University of Hawai'i to plan for shared infrastructure and the establishment of the University Village. All of the developer's planning to date has taken into account the need to provide potable water, roads and wastewater disposal systems, for the University as well as for the project area. The developer will continue to work with the University along those lines and has included in the discussions construction of initial classroom and office facilities within the project area to allow the University to start its relocation. Management policies will ensure resource protection and long-term sustainability.

5.3.4 State of Hawai'i Functional Plans

State Functional Plans are the primary guidelines for implementing the Hawai'i State Plan. In contrast to the Hawai'i State Plan which establishes long-term objectives, the State Functional Plans serve to establish objectives for shorter-term actions.

State Higher Education Functional Plan

The objective of this functional plan is to specify the objectives, policies, and high priority implementing actions that the States postsecondary education community will follow. Objectives and policies that relate to project actions are presented below.

Objective A: *A number and variety of postsecondary education institutions sufficient to provide the diverse range of programs required to satisfy individual and societal needs and interests.*

Policy A(2): *Provide professional and job-related training which responds to the needs of, and opportunities within, the State of Hawai'i.*

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State Conservation Lands Functional Plan

Objective IIC: Enhancement of natural resources

Policy IIC(2): Expand and enhance outdoor recreation opportunities and other resource uses.

Policy IID(3): Develop recreational and archaeological resources on the shoreline and mauka areas.

Action IID(3)a: Acquire and/or develop areas for historic preservation.

Action IID(3)b: Establish a State-wide trails and access system.

Discussion: Significant archaeological resources will be preserved as well as the Dry Forest Area. Archaeological resources will be preserved under a preservation plan to be approved by the State Historic Preservation Division. The construction of the golf course will enhance outdoor recreation in this area. The developer will make areas available for UHCWH courses to promote appreciation and understanding of unique natural and cultural resources. Portion of old trails will also be preserved based on recommendation of the SHPD, Na Ala Hele and the Cultural Advisory Committee.

State Recreation Functional Plan

Policy II-A(3): Proceed with planning, acquisition, and developments of trails.

Policy III-D(3): Effectively manage and maintain existing public access ways.

Policy V-C(3): Explore innovative ways to manage and maintain recreational resources.

Discussion: Significant trails identified by SHPD, Na Ala Hele and the cultural advisory committee are planned for preservation and inclusion into a system of trails and pathways. Management of the resources includes working arrangements with the North Kona Forest Group and the University of Hawai'i. Recreational activities for this site include the golf course and potential trail system through the dry forest area. This will enhance recreational opportunities for the public.

State Historic Preservation Functional Plan

OBJECTIVE C: *Management and Treatment of Historic Properties.*

Policy C.2.: Encourage the preservation and maintenance of historic properties through economic incentives and support.

Discussion: Almost all of the policies and implementing actions in the State Historic Preservation Functional Plan are directed at state agencies, especially the Department of Land and Natural Resources (DLNR). An archaeological inventory survey of the project site has been completed. The State Historic Preservation Division (SHPD) is reviewing the significance evaluations and the general mitigation plans. Additional work will provide specific data recovery and preservation plans for the review and approval of the SHPD. The project includes preservation areas for important natural features and significant archaeological sites. An Integrated Natural Cultural Resource Management Plan will be developed which address the management and treatment of historic properties within the project area.

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State Tourism Functional Plan

Policy II.A.7: Improve the quality of existing parks and recreational areas, and ensure that sufficient recreational areas—including scenic byways and corridors—are available for the future.

Objective III.A: Enhancement of respect and regard for the fragile resources which comprise Hawai'i's natural and cultural environment. Increased preservation and maintenance efforts.

Policy III.A.2: Assist in preserving, perpetuating, and interpreting cultural, historic and archaeological resources.

Discussion: The Palamanui plan outlines strategies to preserve natural and cultural resources throughout the site through educational programs integrated into the University curriculum. Interpretive programs will be provided to promote an appreciation and understanding of the natural and cultural resources of Hiluhilu. Archaeological, botanical and recreational resources will be protected. Facility improvements will expand opportunities for ocean and related coastal recreational activities. The dryland forest, mauka archaeological complex, makai village complex and specified features associated with lava tubes and caves will be preserved. Interpretive programs will be developed with the assistance of the cultural advisory committee and other organizations. Sensitive cave complexes and environments will be protected with buffer zones and educational programs.

5.3.5 Hawai'i Coastal Zone Management, Chapter 205A, HRS

Although the project area is outside the Special Management area, this project will further the following objectives of Chapter 205A, HRS.

Protect, preserve and when desirable, restore those natural and man-made historic and prehistoric resources in the Coastal Zone management area that are significant in Hawaiian and American history and culture (Section 205A-2 (b) (2) (A), HRS).

Discussion: The archaeologist for the project conducted an archaeological survey to identify archaeological features. A plan for further work to be done on the features that were identified is being developed for review and approval by the State Historic Preservation Division.

Protect, preserve and when desirable, restore or improve the quality of coastal scenic and open space resources (Section 205A-2 (b) (3) (A), HRS).

Discussion: The project will be developed to preserve scenic views from the land and roadways. Building and other improvements will be of a low-rise character and will be located to minimize obstruction of existing view planes of coastal areas.

Provide public or private facilities and improvements important to the State's economy in suitable locations (Section 205A-2 (b) (5) (A), HRS).

Discussion: As covered in the Fiscal Impact Analysis (*Appendix I*), the facilities and improvements for this project will have a positive impact on the state economy. Because of the location of this project, those improvements will be located at a significant distance from coastal areas.

Improve the development review process, communication, and public participation in the management of coastal resources and hazards (Section 205A-2 (b) (7) (A).

Discussion: The developer, through its planner, cultural resources consultant and archaeologist are discussing the cultural practices associated with the project area and the

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archaeological and trail features to develop a plan under which certain resources can be made available to the community and to students. Developer is also working with the North Kona Dry Forest Working Group to develop a forest management plan for the management of the dry forest area in the petition area. The plan will include a long-term management plan for endangered plants with monitoring. An Integrated Natural Cultural Resource Management Plan will address these matters.

The project will be developed consistently with the following policies of this chapter.

Identify and analyze significant archaeological resources; maximize information retention through preservation of remains and artifacts or salvage operations; support State goals for protection, restoration, interpretation and display of historic resources (Section 205-A (c) (2)).

Discussion: Developer has had an archaeological reconnaissance survey conducted. The Project archaeologist is working on a preservation plan for the archaeological features identified in the survey which will be submitted to the State Historic Preservation Division for review and approval. The landscape planning will be done so as to incorporate portions of the old trails identified in the reconnaissance survey including cave features relating to cultural practices identified in the cultural practice study. Information regarding botanical resources associated with cultural practices will be provided to support interpretive programs. Again, an Integrated Natural Cultural Resource Management Plan will describe preservation plans.

Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline; encourage those developments which are not coastal dependent to locate in inland areas.

Discussion: Landscape design will follow, to the extent possible, the existing topography. Landscaping will retain sufficient representative areas to preserve the "sense of place" of the surrounding areas. As many of the larger tree specimens which are outside the Dry Forest area and which were identified in the botanical survey shall be preserved. Buildings and other improvements will be designed to minimize obstruction of coastal and other views from roadways and other areas accessible to the public. Golf course design and overall landscaping will retain the natural landscape and minimize concerns about the "greening of Kekaha".

This project is not located in coastal areas. Locating the residences and commercial operations on the project site reduces the impacts of such uses on coastal areas.

The remaining policies of Section 205Ac are specifically directed at coastal developments and are therefore not applicable to this project.

5.2.9. Chapter 343, Hawai'i Revised Statutes. Section 343-5.

Hawai'i Revised Statutes provides in pertinent part:

Section 343-5. Applicability and requirements. (a) Except as otherwise provided, an environmental assessment shall be required for actions which: ". . . (7) Propose any reclassification of any land classified as conservation district by the state land use commission under chapter 205 . . ."

Discussion: Hiluhilu requested that the Land Use Commission provide an Environmental Impact Statement Prep Notice, had necessary technical studies prepared, and is processing this Draft Environmental Impact Statement which is being circulated for comment under the procedures of Chapter 343, Hawai'i Revised Statutes.

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5.4 COUNTY OF HAWAII PLANS AND CONTROLS

5.4.1 General Plan

The County General Plan Land Use Pattern Allocation Guide (LUPAG) Map currently designates the project site as Urban Expansion so changes to the County of Hawaii General Plan and LUPAG map are not needed. (Figure 5-2)

The following discussion provides an assessment of how the proposed project conforms to and implements the pertinent objectives and policies of the County of Hawaii General Plan.

Economic Development

The County of Hawaii shall encourage the development of a visitor industry which is consistent with the social, physical, and economic goals of the residents of the County.

The County of Hawaii shall encourage the continuing development of the retirement industry.

Discussion: Certain housing components of the proposed development will be marketed to older persons. The projected buyer markets include Hawaii and western U.S. residents seeking a primary home in West Hawaii, other residents seeking a retirement home, and other Hawaii, U.S. and foreign residents seeking a second home.

Enhancement of cultural and environmental resources unique to Hawaii promotes the emerging tourism market's sophisticated tastes. The magnet campus concept for West Hawaii promotes this edu-tourism niche in the tourism market.

The continuing development of the retirement industry is enhanced by the proposed elderly care housing component in the plan and the promotion of medical services in the region. A portion of the area around the University Village is reserved for a medical facility and hospital related services which are important to the retirement community.

Flood Control and Drainage

It is the responsibility of both the government and the private sector to maintain and improve existing drainage systems and to construct new drainage facilities.

Discussion: Hiluhilu Development LLC will be responsible for constructing drainage improvements on-site through the use of detention basins and drywells. It is anticipated that there will be no effect on off-site drainage conditions as a result of this project.

Historic Sites

The County of Hawaii shall require both public and private developers of land to provide a historical survey prior to the clearing or development of land when there are indications that the land under consideration has historical significance.

Discussion: An archaeological inventory survey has been conducted by Rechtman & Associates, and its findings and recommendations have been submitted to the State Department of Land and Natural Resources (DLNR) Historic Preservation Division for review and approval. A historic preservation mitigation plan will be formulated prior to construction, per DLNR Administrative Rules.

Natural Beauty

The County shall consider structural setback from major thoroughfares and highways and shall establish development and design guidelines to protect important view planes.

Discussion: A setback area from Queen Ka'ahumanu Highway is proposed to remain as open area. Landscaping along the makai portion of the setback is anticipated.

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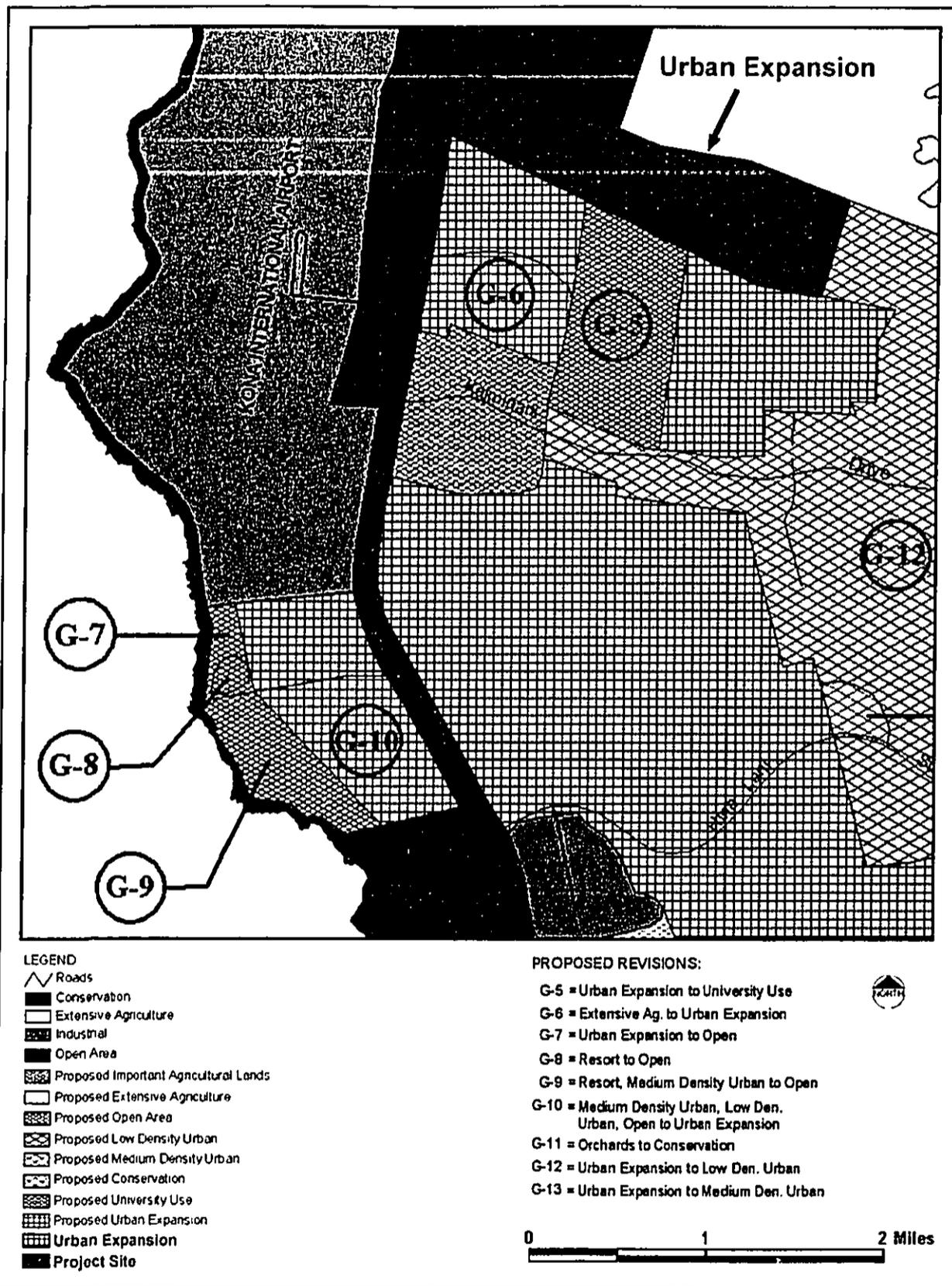


Figure 5-2
County of Hawai'i LUPAG Urban Expansion

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Natural Resources and Shoreline

The County shall encourage the public and private agencies to manage the natural resources in a manner that avoids or minimizes adverse effects on the environment and depletion of energy and natural resources to the fullest extent.

Encourage the use of native plants for screening and landscaping.

Discussion: The project's Master Plan and specific design plans attempt to minimize adverse environmental effects and depletion of resources caused by development through a variety of means. Measures to be implemented include large natural buffer areas, preserve zones, dual water systems, extensive landscaping with plants native to the area.

In addition to large areas of preservation such as the 65-acre forest preserve and several large archaeological conservation areas, the development will seek to evolve as a sustainable community. Various "green" architecture and design features will reduce energy conservation and encourage recycling. The University Village is oriented north/south along a pedestrian mall to encourage walking and reduce the need for cars in the village. Architecture and site planning will employ energy-conserving elements such as solar heating and natural ventilation.

Housing

GOAL: Attain a diversity of socio-economic housing mix throughout the different parts of the County.

GOAL: Maintain a housing supply which allows a variety of choice.

The County shall encourage a volume of construction and rehabilitation of housing sufficient to meet growth needs and correct existing deficiencies.

The County shall work with, encourage, and support the private sector efforts in the provision of affordable housing.

Discussion: The proposed development will provide a total of 845 units of single-family and multi-family residential units. These homes will be high quality market-priced units with the recreational amenities of a golf course. Hiluhilu Development LLC, will also develop, or participate in developing (with other developers or government agencies), the construction of affordable homes, as required by State and County policies. Fifty affordable rentals and 50 affordable sales units will be developed as part of the project. These units will be integrated around the University Village core area in the heart of the project site.

Public Utilities

Water: A systematic program by the County, State, and private interest shall identify sources of additional water supply to ensure the development of sufficient quantities of water for future needs of high growth areas.

Discussion: Dual potable and non-potable water systems will be developed to meet the project's water needs. The existing aquifer system has adequate capacity to serve potable and non-potable water requirements of the existing and proposed uses with the aquifer region. As stated in the Groundwater Resources of Kau, North Kona report by Waimea Water Services, it is recommended that the proposed golf course be carefully designed to minimize water consumption and be planted with salt tolerant grass.

Sewer: Private systems shall be installed by land developers for major resort and other developments along the shorelines and sensitive higher inland areas, except where connection to

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nearby treatment facilities is feasible and compatible with County's long range plans, and in conformance with State and County requirements.

Discussion: Hiluhilu Development LLC will build a private wastewater treatment facility on its site to service both its project and the UH Center West Hawai'i.

Transportation

Thoroughfares and Streets: The County shall investigate various methods of funding road improvements, including private sector participation, to meet the growing transportation needs of the Island.

Discussion: Hiluhilu Development LLC will fund the cost of connection of its access road intersection with Queen Ka'ahumanu Highway. Mitigation of traffic impacts from this project is discussed in the Traffic Impact Assessment Report (Appendix E).

Land Use

The Property site is designated "Urban Expansion Area" on the General Plan Land Use Pattern Allocation Guide (LUPAG) map. The proposed development is permitted under this designation.

According to the General Plan, Urban Expansion Area refers to lands which allow for a mix of high-density, medium density, and low-density, industrial and/or open designation in areas where new settlements may be desirable, but where the specific settlement pattern and mix of uses have not yet been determined. Within areas designated for development as Resort, portions of the resort area may be included in the Urban Expansion Area.

The Palamanui project will address the Housing component of the General Plan. The profile of North Kona district shows that housing for low and moderate-income groups have remained critical.

Zone urban and rural types of uses in areas with ease of access to community services and employment centers and with adequate public utilities and facilities.

Allocate appropriate requested zoning in accordance with existing or projected needs of neighborhood, community, region, and County.

The County shall encourage the development and maintenance of communities meeting the needs of its residents in balance with the physical and social environment.

Single-Family Residential: The County shall encourage more innovative uses of land with respect to geologic and topographic conditions through the use of residential cluster and planned unit developments. The clustering of residential units in sloping areas is a means of minimizing grading and drainage problems, preserving the natural appearance of the topography, preventing strip development, and making optimum uses of the terrain for buildings and open space.

Multi-Family Residential: Appropriately zoned lands shall be allocated as the demand for multiple residential dwellings increases. These areas shall be allocated with respect to places of employment, shopping facilities, educational, recreational, and cultural facilities, and public facilities and utilities.

Open Space: Protect designated natural areas.

Discussion: Since the site is presently vacant, it has the potential for a well-planned community. Its size (725.2 acres) and shape also lend themselves to a well-planned community. In planning the residential areas of the project and the golf course, consideration of the natural

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slopes and features in the topography have been respected. Clustering of dwelling units in sections of the project will preserve the open space character. The development of the University Village will also create a range of housing types and densities that allow greater flexibility and residential choices.

Commercial

The development of commercial facilities should be designed to fit into the locale with minimal intrusion while providing the desired services. Appropriate infrastructure and design concerns shall be incorporated into the review of such developments.

Discussion: The developer met with community during the course of project planning to integrate the project with local resident needs. Hiluhilu LLC will provide appropriate infrastructure and design elements for the proposed development components while being cognizant of the impact of the development.

5.4.2 Zoning Districts

The property is zoned by the County of Hawai'i as Agricultural 3 acres (A-3a) and Open (O). The Open district corresponds with the current State Land Use Conservation District. (Figure 5-3) Pursuant to Chapter 25, Hawai'i County Code relating to Zoning, the zoning for the project site does not allow the proposed urban uses. Therefore, rezoning of this property is required. A Change of Zone application (Rezoning) will be made subject to obtaining approval of the State Land Use Boundary Amendments. The Applicant will pursue a zoning change to accommodate the low and medium density residential development, the commercial developments and recreational amenities of the golf course and clubhouse facilities. The specific zoning district designations to be requested will be determined later in the planning process.

5.4.3 West Hawai'i Regional Plan

The West Hawai'i Regional Plan was developed by the Office of State Planning in November of 1989. The Plan identifies the property as falling within the Kailua-Kona to Keāhole Urban Expansion Planning Area.

The West Hawai'i Regional Plan is intended to compliment the County of Hawai'i's General Plan and Community Development Plan and was developed to address the regional issues arising from rapid development in the West Hawai'i area.

The following goals define the focus and direction of the West Hawai'i Regional Plan as it relates to the Palamanui Development. This plan is expressed in terms of a Vision for West Hawai'i. The Vision includes the need to:

- Promote a diversified economic base which maximizes job choice and opportunities.
- Ensure that existing and proposed developments can be adequately accommodated.
- Maintain the diversity of the region's natural and cultural assets.
- Maintain the diversity and character of existing communities.
- Ensure that the development does not lead to deterioration in quality of life.
- Maintain opportunities for community participation during plan implementation.

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The way in which these goals manifest themselves into land use patterns, public funding, and implementation, is the heart of this plan. The plan attempts to have balance among economic development and urban growth, community development, and environmental concerns. The Palamanui Development will promote and ensure that these community and cultural assets are maintained and enhanced during the implementation phase. University facilities in Kalaoa is listed as one of the action statements in this plan.

Strategies – Heritage Resources

Recognize and protect scenic areas, natural landmarks, open space, and viewsheds as amenities that: improve the quality of life of Hawai'i's residents; support the visitor industry; and influence land use patterns.

Identify and manage areas of cultural importance in ways that enhance and promote an appreciation of our cultural heritage.

Actions:

- *Evaluate the potential impact of land use proposals on the visual quality of the landscape, including the view plane and open space considerations.*
- *Protect views afforded from Queen Ka'ahumanu Highway and from the shoreline.*

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Discussion: The project area contains some culturally significant archaeological remains which will be preserved per plans approved after DLNR review and approval. View planes from Queen Ka'ahumanu Highway to the shoreline will be preserved where practical. Features recommended for preservation by the archaeological inventory survey will generally be preserved.

The site is currently vacant and the proposed project is a large development which will have some impact on view planes. Views from Queen Ka'ahumanu will show a developed low-density community with a Village core. (Figure 3-4) It will be an extension of existing developments growing north from Kailua Kona.

Visual impacts will be mitigated by the large buffer zone along Queen Ka'ahumanu Highway. Distance from the highway and lower densities will minimize some of the visual impacts. The golf course will be designed to maintain large areas of the existing barren lava and preservation of archaeological sites and the dryland forest will also reduce visual impact. The generally low-rise nature of the project will allow it to nestle into the slopes of Hualālai with a minimum of impact. Roof colors, textures and materials will be determined later, but will encourage a palette that reduces visual impact.

Strategies – Water Quality

Ensure the high quality of the groundwater is maintained.

Ensure that the high quality of the region's near-shore and coastal waters is maintained as assets for recreation, the economy, and natural biological systems.

Actions:

- *Adopt the Department of Health's draft groundwater protection strategy.*
- *Expand the Department of Health's water quality monitoring program to include toxic monitoring, biomonitoring, and biosurveys.*

Discussion: The land and water resources of the project will be properly managed. All planned improvements will be consistent with and contribute to the implementation of these objectives and policies. Their basic intent is to support prudent use and management of natural resource areas for recreational purposes. New facilities are being planned and designed in a manner that takes into account and is compatible with the physical attributes of the different areas throughout the Hiluhilu Development and that avoids any costly or irreparable environmental damage.

The potential for surface water pollution is negligible on this site due to the extreme porosity of the soil and underlying geology. Stormwater runoff will be directed to open turf areas on the golf course, and to drywells scattered throughout the site. Runoff will eventually become groundwater, and groundwater flows underground and eventually seeps into the ocean at the shoreline. Hiluhilu will provide for groundwater monitoring as required by DOH.

Strategies – Energy and Power Facilities

Minimize the negative impact of changes in the fuel and power generation and delivery systems on existing and new communities of residents and visitors.

Encourage the use of climate-appropriate architecture, vegetation, and landscaping.

Minimize transportation fuel consumption.

Action:

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- *Actively support efficient transportation methods for residents, visitors, and resort workers, such as buses, safe bicycling routes, van pooling, and carpooling, to minimize traffic and fuel supply problems.*

Discussion: This project will use green/climate appropriate architecture incorporating energy efficient technology and design, and appropriate vegetation and landscaping to moderate climatic effects. Working with the County, it hopes to participate in finding and encouraging energy efficient methods for transporting employees to their place of work. It will also work with HELCO to consider solar and co-generation opportunities in the development.

Strategies – Sewage Disposal Systems

Provide sewage disposal systems that will foster continued regional growth.

Ensure that the high quality of offshore and coastal waters and the groundwater are maintained.

Action:

- *Include buffer zones and disclose possible public exposure to the effluent in proposals to reuse sewage effluent.*
- *Ensure compatibility between adjacent land uses and the siting of, and zoning for, sewage treatment plants.*
- *State and County land use planning agencies should require the utilization of low-water consumption toilets and other appliances, explore the viability of waterless toilet systems, and encourage recycling wastewater for irrigation. Other measures to reduce wastewater generation should be developed and evaluated.*

Discussion: Hiluhilu Development LLC will construct its own on-site wastewater treatment facility. Odor control measures will be employed in designing the wastewater treatment plant. Treated wastewater effluent will be diluted and used for irrigation of the golf course. Landscaped areas around residential areas will be irrigated with brackish water only.

The treated effluent will have a water quality that is not a threat to ground water resources when it is reused for irrigation. Applications of treated effluent as irrigation water will follow all necessary guidelines to eliminate public exposure. Buffer zones will be provided form adjacent land uses to avoid public exposure. Where practicable, building designs, material, equipment and fixtures will consider low flow or waterless options.

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5.4.4 Keāhole to Kailua Development Plan (“K to K”)

The County of Hawai‘i established an overall goal and related specific objectives for the Keāhole to Kailua Development Plan (the “K to K plan”), as follows:

To develop a mixed residential, commercial, resort, industrial and recreational community, with approximately 8,000 or more residential units, in a functional, attractive, and financially viable manner. The community uses will include appropriate shoreline use, public facilities and infrastructure, and will be built out over the next 20 years.

Objectives:

Land Use:	To develop a plan for an integrated community consistent with the County General Plan, which can be served by the required infrastructure in phases, and which provides for a mix of land uses in a functional, efficient, and aesthetically pleasing manner.
Design:	To develop design guidelines for critical visual aspects of the subject area.
Roads:	To develop during the next 10 years an efficient, safe, and pleasing road network, which operates at level of service C over the next 20 years, and which interconnects the various land uses within the planning area and accommodates various modes of travel.
Drainage:	To identify all areas subject to flood inundation by a 100-year storm or tsunami inundation and develop during the next 10 years an efficient, comprehensive flood control system.
Water:	To develop a water system with a 6 mgd capacity over the next 10 years to serve the land uses planned within the subject site.
Sewer:	To develop an area-wide system of sewerage facilities with a capacity of 6 mgd over the next 10 years.
Solid Waste:	To develop facilities adequate for the needs of the area over the next 10 years.
Parks:	To develop recreational facilities that meets the range of needs arising from 25,000 or more residents over the next 10 years.
Finance:	In conjunction with land use and infrastructure plans, to develop a financing approach which provides for infrastructure financing, feasible land development, and a feasible level of County capital expenditures.

The property falls within in the project area for the Keāhole to Kailua (“K to K”) Development Plan (April 1991). The function of the “K to K” Development Plan is to guide land use actions by both the public and private sectors, and is not intended to supercede the General Plan nor impose additional development controls over property.

Palamanui meets the objectives of the K to K Plan in the following ways:

- It addresses the need to accommodate population growth identified by the K to K Plan.
- Our Plan designs a community with amenities and designs that carries its share of infrastructure and more.

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- Visual impacts are addressed through site planning, buffer zones and setbacks, reduced densities, landscaping and design guidelines.
- The roadway network shown in the K to K Plan is largely integrated into our plan.
- The site is not in an area subject to flooding
- Hiluhilu Development will pay its fair share of water development costs and is assisting the County Water Department and the DLNR in developing a regional arrangement for water development.
- It contains its own wastewater system that will contribute to regional capacity in that it is sized to accommodate the UH Center West Hawai'i flows as well.
- A solid waste management plan will be developed.
- Our plan includes recreational areas and facilities to serve the planned Palamanui community, UH Center West Hawai'i and other residents.
- It contributes to the development of greater capacity in regional infrastructure.

5.4.5 Kona Regional Plan

The Kona Regional Plan, adopted by the Planning Commission and County Council in 1984, serves as a guide in implementing the General Plan. This role of the Kona Regional Plan prescribed by the General Plan entails the formulation of desired land use patterns within the parameters of the General Plan goals, policies, standards, Land Use Pattern Allocation Guide Map, and Facilities Maps. The Regional Plan is not intended to supercede the General Plan nor pose additional development controls, but rather to guide the implementation of the General Plan. The land use concept map for the Kona Regional Plan designates the Property as Agriculture 3-acre which would allow the project concept. The Palamanui project is consistent with the General Plan designation.

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Section 6.0
Probable Impacts and Mitigative Measures

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6.0 PROBABLE IMPACTS AND MITIGATIVE MEASURES

Two types of probable impacts on the environment are discussed in this section: short-term or construction-related impacts, and long-term or operations related impacts. Also described are mitigative measures that are proposed for implementation, where appropriate and feasible, to minimize any adverse impacts.

Short-term impacts are related to the process of site work or construction. These are different or distinct from the potential long-term impacts that result from the existence of new facilities or improvements to the land.

6.1 POTENTIAL SHORT-TERM IMPACTS

6.1.1 Topography, Soils, and Drainage

Probable Impacts

The short-term impact of the proposed action on soils is limited to the small potential for erosion during construction. All grading operations will be conducted in compliance with dust and erosion control requirements of the County of Hawai'i. A Grading Permit must be obtained from the County of Hawai'i in order to begin construction. During Grading Permit review and approval the grading plans for the site are reviewed by the Department of Public Works and specific conditions may be attached.

The project does not propose major re-grading of the site. The existing topography will be altered only to the extent necessary for construction of the proposed improvements. It is anticipated that grading will occur on a localized scale and that cut and fill quantities will generally balance as construction progresses.

The topography of the Palamanui project site will be altered slightly by limited construction grading. There will be no substantive alterations to existing drainage patterns.

Site topography – Alterations to site topography will be relatively minor. Cut and fill operations will be generally balanced and grading plans will work with the slope as much as possible. The University Village which has the densest development is sited on a portion of the property which has a gentle slope and this will minimize the need for excessive grading.

Soils – Soils in the area will be minimally affected. Much of the site is lava fields and soil will be imported from off-site sources for golf course turf areas and site landscaping in various parts of the project.

Drainage – Site drainage is not expected to be a significant issue. The proposed improvements at Palamanui will alter drainage patterns in minor ways. Soils are porous and the sloping topography facilitates site drainage. No flood plains, floodways or ponding areas are found on the site. Rainfall is low and storm drains, swales and detention areas will be designed to accommodate design storm conditions. Local drainage for developments in Hawai'i County has usually been handled by constructing dry wells or drainage sumps to redirect man-made runoff into the ground rather than to channel the runoff to carry the water offsite. This is generally sufficient because of the high permeability of the underlying soil and low rainfall.

There is some potential for surface water runoff to carry oil or petroleum based products from vehicles which are left on roadways or parking areas, excess fertilizer or pesticides from golf course or landscape areas to leach into the underlying groundwater of the project.

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Mitigative Measures – Storm water runoff from impervious areas will be collected through a system of swales, catch basins, and pipes and transported to drywells or infiltration areas for disposal within Palamanui. Infiltration areas will be located in the golf course and other open spaces, where practical. Buffers and small siltation basins will help to filter and trap potential pollutants onsite through physical and biological means. Drywells will be located within roadway rights-of-way and within individual parcels, as needed. Turf and grounds maintenance will minimize pollution potential from runoff through controlled applications. The dry wall design will aid in avoiding lava tubes and the casing and filtration designs will minimize ground water contamination. Monitoring and mitigation measures will minimize adverse effects should contamination occur.

Strict erosion control measures, as required by the regulations, standards and guidelines cited below will be followed in order to ensure that any significant adverse effects are avoided. This will include the preparation and approval of an Erosion Control Plan prior to any construction. Erosion control measures will, where appropriate, include the use of cut-off ditches, temporary ground cover, and detention/sedimentation basins.

The dry wells and retention basins will be designed to filter pollutants and silt through sand and gravel layers. Vegetated retention basins will also provide some biological uptake of nutrients in stormwater. In addition, stormwater entering the groundwater from the project site will be filtered through soil and lava layers ranging from approximately 140 to over 900 feet thick, based on site elevations ranging from approximately 150 to 920 feet above sea level. Percolation through such thick soil and lava layers will effectively remove most pollutants from the stormwater before it reaches groundwater.

Runoff that enters drywells from hardscape areas would not be subject to biological uptake, but the deep lava filtration effectively removes many pollutants, except for some dissolved nutrients and persistent pesticides. Pesticides available these days are generally not persistent, as they break down rather quickly in the environment. The golf course and landscape management plans will be responsible for minimizing the discharge of fertilizers and pesticides, and selecting appropriate products to minimize storm water pollution.

Primary fugitive dust control methods that will be implemented include the frequent watering of exposed areas, good housekeeping at the job sites, and paving or landscaping of exposed areas as quickly as possible.

Soil that is imported for golf course and landscaping will be covered or planted promptly after installation of the soil to minimize erosion. The golf course will potentially serve and accommodate regional drainage flows and other purposes besides just serving as a recreational amenity. Certain sections of the golf course will serve as dry wells to serve as part of the stormwater drainage system.

The following documents specify erosion and dust control measures that will be followed during construction:

- State of Hawai'i, Department of Health, Water Quality Standards, Chapter 37-A, Public Health Requirements (1968).
- U. S. Soil Conservation Service's "Erosion and Sediment Control Guide for Hawai'i". This is a "how to" manual on ways to reduce erosion and sedimentation and conserve our soil resources. [This agency has been renamed the "U.S. Natural Resources Conservation Service".]

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Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.2 Flood and Tsunami Inundation, Lava Flow and Earthquake Hazards

Probable Impact:

Flood: The property is within Zone X, which represents areas determined to be outside the 500-year floodplain.

Tsunami: The Federal Emergency Management Agency Flood Insurance Rate Map indicates no areas of potential tsunami inundation on the property. Due to its elevation and distance from the shore the risk from tsunami hazards is largely non-existent.

Lava Flows: The Kailua-Kona area is within Zone 4, indicating a moderate hazard. Zone 4 includes all of Hualālai, where the frequency of eruptions is lower than on Kilauea and Mauna Loa. Flows typically cover large areas.

Earthquakes: The entire island of Hawai'i is susceptible to earthquakes originating in fault zones under and adjacent to the island. Under the uniform building code seismic provisions, a Zone 4 area could experience severe seismic activity between .30 and .40 of the earth's gravitational acceleration (g-forces) causing major damage to poorly designed or built structures.

Mitigation Measures:

Flood: No mitigation measures are needed.

Tsunami: No mitigation measures are necessary.

Lava Flows: There are no mitigation measures.

Earthquakes: The potential of damage incurred by strong earthquakes is a prevalent concern for the entire county of Hawai'i. As such, the proposed projects will be in compliance with the Uniform Building Code and County of Hawai'i structural design standards, including earthquake design provisions.

Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.3 Surface Water Quality

Probable Impacts

The project site has no streams, watercourses or ponds nor is the project site in close proximity to the shoreline. Short-term impacts to surface water are not expected.

Mitigative Measures – There are no streams or drainage ways in the area and any man-made runoff should be directed underground as it is presently part of the existing recharge and should not be lost to the system. There are no bodies of water in the vicinity of Kau project which might be negatively influenced by the project which might be negatively influenced by the project including the underlying brackish lens.

Construction activities will be monitored continuously to ensure that fuel and other petroleum products are appropriately handled and stored. If any accidental spill or discharge occurs, the State Department of Health will be promptly notified and appropriate remediation will be done.

The following regulations and guidelines will be followed in order to minimize adverse effects on water quality:

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- State Department of Health's "Water Pollution Control", Chapter 11-55 of the Hawai'i Administrative Rules.
- State Department of Health's "Water Quality Standards", Chapter 11-54 of the Hawai'i Administrative Rules.
- Section II "Best Management Practices" in the State Department of Health's "Nonpoint Source Water Pollution Management Plan".
- U.S. Environmental Protection Agency/National Oceanic and Atmospheric Administration's "Guidance Specifying Control Measures for Sources of Nonpoint Pollution to Coastal Waters".

Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.4 Groundwater Quality

Probable Impacts

Construction activities on the project site present a risk of contamination from accidental spills of hazardous materials or from non-point source pollution. The Hiluhilu project will include a golf course, medical facility, wastewater treatment plant, and stormwater injection wells. All of these have some potential to introduce contaminants to groundwater migrating beneath Kona International Airport at Keāhole. Also of concern are any potentially negative effects to groundwater quality associated with the Natural Energy Laboratory of Hawai'i (NELHA).

There are indications, according to data produced during the 1999 USGS Kaloko - Honokōhau study, that there may be some man-made influence as inferred by the detection of phenols in the shallow wells makai of the Kaloko Industrial Park (Water Resources Investigation Report 99-4070). There are a number of potential sources of phenols, however, there is no conclusive evidence as to source. Regardless, there are no bodies of water in the vicinity of Palamanui which might be negatively influenced by the project including the underlying brackish lens.

Mitigative Measures – The general solution to local drainage in Hawai'i County has been to construct dry wells, which redirect any man-made runoff into the ground. The sporadic nature of the rainfall rarely, if ever, results in long-term pollution. There are no streams or drainage ways in the area and any man-made runoff should be directed underground as it is presently part of the existing recharge and should not be lost to the system. There are no bodies of water in the vicinity of Kau project which might be negatively influenced by the project which might be negatively influenced by the project including the underlying brackish lens.

Construction activities will be monitored continuously to ensure that fuel and other petroleum products are appropriately handled and stored. If any accidental spill or discharge occurs, the State Department of Health will be promptly notified and appropriate remediation will be done. Hiluhilu Development will develop a water quality monitoring program and install at least one groundwater monitoring well.

The following regulations and guidelines will be followed in order to minimize adverse effects on water quality:

- State Department of Health's "Water Pollution Control", Chapter 11-55 of the Hawai'i Administrative Rules.
- State Department of Health's "Water Quality Standards", Chapter 11-54 of the Hawai'i Administrative Rules.

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- Section II “Best Management Practices” in the State Department of Health’s “Nonpoint Source Water Pollution Management Plan”.
- U.S. Environmental Protection Agency/National Oceanic and Atmospheric Administration’s “Guidance Specifying Control Measures for Sources of Nonpoint Pollution to Coastal Waters”.

Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.5 Coastal Waters

Probable Impacts

Planned improvements are not expected to create short-term impacts on coastal waters. No surface water is expected to reach the coast directly, or flow into drainage ways north or south of the property and so reach the coast. However, there is concern that future golf course fertilization and pesticide use if unmanaged, could contaminate the subsurface water flow into the nearby ocean, potentially degrading coastal water quality. This concern is addressed in the long-term impacts in Section 6.2.

Mitigative Measures – Adherence to erosion control measures, as required by the regulations, standards and guidelines will be followed in order to ensure that any significant adverse effects are avoided. These are listed in section 6.1.4. Hiluhilu will participate in coastal water monitoring programs for the area for monitoring of near shore water quality. Hiluhilu will cooperate in programs to trace the sources of contaminants found in coastal water in the area and to remediate the effects of contaminants originating from the project area.

Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.6 Hazardous Materials

Probable Impacts

The property is an agricultural site and was used for ranching purposes. Therefore it is highly unlikely that hazardous materials will be found on the site. Long-term probable impacts are discussed in Section 6.2.

Mitigative Measures – No mitigative measures are necessary for the short-term. A policy and plan will be developed addressing the production and disposal of hazardous waste materials. In addition, a monitoring system and Best Management Practices and Integrated Pest Control Management will be utilized for activities related to the golf course. Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.7 Vegetation and Wildlife

Probable Impacts

Short-term effects to vegetation, wildlife and insects can be anticipated wherever site clearing and grading or excavation is necessary. Of particular concern is the potential for disturbance that may affect habitats for endangered species of vegetation or wildlife. The unrestricted movement and growth of rodents and ungulates on project lands can disturb vegetation and wildlife in need of protection.

Fauna (Wildlife) – The Opeapea breeds at lower elevations during summer months (June to August). Young Opeapea are non-volant and could be killed if vegetation, shrubs, or trees they

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are in are grubbed or cut. To avoid potential take of young, non-volant Opeapea that could be in the area, no grubbing or tree-cutting should be done from June to August.

The 'Io is known to breed in areas near the action area and is found in moderate to high densities within portions of the project area. To avoid potential disturbance or harm to 'Io that could be nesting, no grubbing or tree-felling should be done during the 'Io breeding season (March to October). If this is not possible, surveys should be conducted in the early spring to detect potential breeding pairs.

Mitigative Measures –

- The Dry Forest will be preserved.
- Grubbing, grading and construction activities will avoid the Dry Forest Area and trees to be protected.
- Construction activities will be scheduled to avoid disturbing nesting pairs of the 'Io during the breeding season.

Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.8 Cave Fauna

Probable Impacts

Short-term effects to cave fauna and ecosystems can be anticipated wherever site clearing and grading or excavation is necessary. The proposed project may threaten cave ecosystems in the following manner 1) alteration or elimination of food and water inputs through changes in land use, 2) alteration of airflow and microclimate in caves by disturbance of the surface, 3) waste disposal and pollution, 4) invasions by alien species, and 5) direct and indirect disturbance of the habitat by human visitors.

Mitigative Measures – The following measures will be taken to minimize possible impacts on cave ecosystems during construction:

- Exercise due care to minimize the amount of surface disturbance during construction activities in the vicinity of significant caves.
- Minimize the addition of topsoil or other impermeable material to the surface directly above sensitive areas (that is, over deep cave zone passages) within the significant caves.
- Develop a buffer zone around designated cave environment areas to avoid inadvertent impacts.

Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.9 Cultural Resources

Probable Impacts

Significant effort was made to identify cultural, historic and archaeological resources throughout Palamanui in order to plan intensity and location of the proposed facilities. Details of these reports are provided in the appendices. The Palamanui Master Plan has been designed to preserve these resources to the extent possible. No burials were found in the project area to date.

Mitigative Measures – An Integrated Natural Cultural Resource Mangement Plan (INCRMP) will be implemented to address potential short term and long-term impacts of the proposed

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project and ensure preservation and monitoring of the cultural, historic and archaeological resources. Section 3 of the report describes the Integrated Natural Cultural Resource Management Plan.

If during the course of construction any cultural or archaeological deposits are unearthed, all work in the area will be halted and the State Historic Preservation Office and Hawai'i Island Burial Council will be notified in case of human remains. The following cultural recommendations are made as to how to respond in the event that burials are encountered during subsurface work in the project area.

The following recommendations speak to cultural concerns the Hawaiian community in general regarding proper handling of iwi, or ancestral remains, consultation with appropriate parties and final disposition of any burial should they be encountered within the project area. It is stressed that utmost sensitivity, caring and understanding be employed when dealing with burial issues and iwi.

1. In the event of an inadvertent discovery of ancestral remains, the applicable processes outlined in existing State regulations, specifically those provided in the Hawai'i Administrative Rules, Title 13, Chapter 300, Section 40 and Section 33, will be employed.
2. If, for some reason, iwi must be moved or touched, it is highly recommended that this be conducted by a cultural monitor, a lineal/cultural descendant or someone of Hawaiian ancestry.
3. Notify and consult with known and potential lineal and cultural descendants related to any burial discovery.
4. Consult with appropriate agencies and organizations including: State Department of Land and Natural Resources, Historic Preservation Division (DLNR/SHPD), SHPD Burial staff, the Hawai'i Island Burial Council (OIBC), the Office of Hawaiian Affairs (OHA), Hui Mālama I Nā Kūpuna o Hawai'i Nei, and other interested Hawaiian organizations.
5. Prepare and implement a Burial Treatment Plan to be developed in consultation with the above agencies, the appropriate organizations and parties wishing to be consulted, including lineal and/or cultural descendants.

Mitigative Measures – While no burials were found in the project area to date, the developer will follow proper protocols as required by the Hawai'i State Historic Preservation Division (SHPD) Burial Sites Program, and any pertinent laws and regulations, if any burial sites are discovered during the preparation and construction phases of the project. At such time, the State Historic Preservation Office and the Hawaiian Island Burial Council will be notified.

Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.10 Archaeological Resources

Probable Impacts

The archaeological study described residential complexes, caves and remnants of trails in the project site. The Palamanui Master Plan has been designed to preserve significant archaeological features throughout the project area. Roadways, residential units and golf amenities have been sited to avoid disturbance of archaeological assets. It is possible, however, that during construction of Palamanui, that archaeological sites may be disturbed.

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Mitigative Measures - An Integrated Natural Cultural Resource Management Plan will be developed to address preservation, mitigation, management and stewardship measures. Hiluhilu Development will strive to preserve more of the sites than those identified by project archaeologists. Further study will be needed as more detailed cultural preservation plans are developed. Archaeological sites 15262, 15299 and 15304 will be added to plan consideration. Further data collection will be conducted for site 15262. Sites 15299 and 15304 will be included into the landscaping with an interpretive program added.

Short-term, or interim, protection measures designed to protect the sites during construction of the subdivision were implemented according to the Interim Site Protection Plan (Williams and Nees 1993a). These interim protection measures included the following:

1. Notification of all construction personnel of the existence and location of four archaeological sites slated for preservation.
2. Defining a 50-foot temporary buffer zone around each site.
3. Flagging of the temporary buffer zone boundaries around the sites.
4. Monitoring the installation of plastic fencing on the site's buffer zone boundaries.
5. Monitoring vegetation grubbing around the fenced areas.
6. Providing consultation regarding construction of rock walls on the site's buffer zone boundaries.

Visible sections of the trail segments will be preserved pending development and approval of a treatment plan by State Historic Preservation Division.

Permanent mitigation and preservation plans will be coordinated with the State Historic Preservation Division and knowledgeable Kūpuna from the North Kona Region. As of March 2004, the archaeological inventory survey is still pending review by the State Historic Preservation Division, Department of Land and Natural resources.

Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.11 Air Quality

Probable Impacts

Short-term direct and indirect impacts on air quality could potentially occur due to project construction. For a project of this nature, there are two potential types of air pollution emissions that could directly result in short-term air quality impacts during project construction: (1) fugitive dust from vehicle movement and soil excavation; and (2) exhaust emissions from on-site construction equipment. Indirectly, there also could be short-term impacts from slow-moving construction equipment traveling to and from the project sites, from a temporary increase in local traffic caused by commuting construction workers, and from the disruption of normal traffic flow caused by lane closures of adjacent roadways (*Appendix F*).

Fugitive dust emissions may arise from the grading and dirt-moving activities associated with site clearing and preparation work. The emission rate for fugitive dust emissions from construction activities is difficult to estimate accurately. This is because of its elusive nature of emission and because the potential for its generation varies greatly depending upon the type of soil at the construction site, the amount and type of dirt-disturbing activity taking place, the moisture content of exposed soil in work areas, and the wind speed. The EPA [2] has provided a rough estimate for uncontrolled fugitive dust emissions from construction activity of 1.2 tons per acre per month under conditions of "medium" activity, moderate soil silt content (30%), and

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precipitation/evaporation (P/E) index of 50. Uncontrolled fugitive dust emissions at the project site would likely be somewhere near that level, depending on the amount of rainfall that occurs. In any case, State of Hawai'i Air Pollution Control Regulations [3] prohibit visible emissions of fugitive dust from construction activities at the property line. Thus, an effective dust control plan for the project construction phase is essential.

Adequate fugitive dust control can usually be accomplished by the establishment of a frequent watering program to keep bare-dirt surfaces in construction areas from becoming significant sources of dust. In dust-prone or dust-sensitive areas, other control measures such as limiting the area that can be disturbed at any given time, applying chemical soil stabilizers, mulching and/or using windscreens may be necessary. Control regulations further stipulate that open-bodied trucks be covered at all times when in motion if they are transporting materials that could be blown away. Haul trucks tracking dirt onto paved streets from unpaved areas is often a significant source of dust in construction areas. Some means to alleviate this problem, such as road cleaning or tire washing, may be appropriate. Paving of parking areas and/or establishment of landscaping as early in the construction schedule as possible can also lower the potential for fugitive dust emissions. Monitoring dust at the project property line could be considered to quantify and document the effectiveness of dust control measures.

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

Project construction activities will also likely obstruct the normal flow of traffic at times to such an extent that overall vehicular emissions in the project area will temporarily increase. The only means to alleviate this problem will be to attempt to keep roadways open during peak traffic hours and to move heavy construction equipment and workers to and from construction areas during periods of low traffic volume. Thus, most potential short-term air quality impacts from project construction can be mitigated.

Mitigative Measures - The impact of construction activities on air quality will be mitigated by conforming to strict dust control measures, particularly those specified in the State Department of Health's (DOH) Water Quality Standards, Chapter 37-A, Public Health Regulations, 1968; and the U.S. Soil Conservation Service's Erosion and Sediment Control Guide for Hawai'i, 1968.

The major potential short-term air quality impact of the project will occur from the emission of fugitive dust during construction. Uncontrolled fugitive dust emissions from construction activities are estimated to amount to about 1.2 tons per acre per month, depending on rainfall. To control dust, active work areas and any temporary unpaved work roads should be watered at least twice daily on days without rainfall. Use of wind screens and/or limiting the area that is disturbed at any given time will also help to contain fugitive dust emissions. Wind erosion of inactive areas of the site that have been disturbed could be controlled by mulching or by the use of chemical soil stabilizers. Dirt-hauling trucks should be covered when traveling on roadways to prevent windage. A routine road cleaning and/or tire washing program will also help to reduce fugitive dust emissions that may occur as a result of trucks tracking dirt onto paved roadways in the project area. Paving of parking areas and establishment of landscaping early in

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the construction schedule will also help to control dust. Monitoring dust at the project boundary during the period of construction could be considered as a means to evaluate the effectiveness of the project dust control program and to adjust the program if necessary.

Short-term increases in vehicular emissions, due to disruption of traffic by construction equipment mobilization, will also be alleviated by moving equipment and personnel to the construction site during off-peak traffic hours. Increased traffic volumes in the long-term may increase vehicular emissions, however, the region is generally rural and undeveloped. Worst-case concentrations of carbon monoxide should remain within both the State and the national ambient air quality standards. Air quality conditions in the region are not anticipated to decline and no mitigative measures are required. Contractors will also be encouraged to properly maintain construction equipment to minimize exhaust emissions.

Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.12 Noise

Probable Impacts

Construction activities at the project site would generate noise impacts that are temporary in nature. The impacts of construction activities would be experienced by area residents to a degree consistent with each individual's reaction or tolerance to noisy stimuli. Anticipated construction noise would be audible, but relatively low at neighboring properties due to a distance of approximately 6,000 linear feet between the project site and the nearest affected residential community along Ka'imani Drive. Residences in Mākālei Estates are adjacent to the project site but except for the golf course, most work during phases 1 and 2 will be at the lower elevations and miles away.

Mitigative Measures – Construction-period noise will be mitigated in accordance with Title 11, Administrative Rules, Chapter 46, Community Noise Control of the State Department of Health. All construction equipment and on-site vehicles will be equipped with mufflers as required in Section 11-46-(b)(1)(A). Required permit conditions for construction activities include:

"No permit shall allow construction activities creating excessive noise... before 7:00 a.m. and after 6:00 p.m. of the same day".

"No permit shall allow construction activities which emit noise in excess of ninety-five (95) dB(A)... except between 9:00 a.m. and 5:30 p.m. of the same day".

"No permit shall allow construction activities which exceed the allowable noise levels on Sunday and on... (certain) holidays. Activities exceeding ninety-five (95) dB(A) shall (also) be prohibited on Saturdays."

Construction noise prevention measures are not expected to exceed allowable levels. Noise emanating from operational equipment such as air conditioning systems will be limited through facility design consistent with the Department of Health's Administrative Rules, Chapter 11-46, "Community Noise Control."

The developer will submit a Federal Aviation Administration (FAA) Form 7460-1, Notice of Proposed Construction or Alteration regarding any probable impacts to the airspace in the vicinity of KOA airport from the development.

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The implementation of curfew periods and adherence to construction noise limits established by the State of Hawai'i DOH would further minimize the nuisance to the residents of nearby communities in the project area. In light of these considerations, no short-term mitigation for noise impacts is proposed.

Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.13 Visual Resources

Probable Impacts

Construction related activities will impact the visual landscape of the project area temporarily. The build out period is expected to be ten years.

Mitigative Measures – The project does not involve any buildings taller than three stories. Therefore, the vertical impact of construction related activities will be minimal.

6.1.14 Recreational Resources

Probable Impacts

The project site does not recreational resources. Short-term impacts to recreational resources are not expected. Public access to existing recreational resources in the Kona area will not be impacted by the construction of the proposed project.

In the long-term, the project will increase demand for additional recreational resources. Long-term impacts and mitigative strategies are discussed in Section 6.2.

Mitigative Measures – There is no need for mitigative measures for recreational resources.

Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.15 Population and Employment

Probable Impacts

Planned improvements will generate short-term direct employment, both on and off-site during the construction period. The project expects to support over 2,600 person years of construction employment over the life of the project. Construction activity will also generate indirect and induced employment opportunities and multiplier effects. Those affected will be local material suppliers and retail businesses. Long-term impacts are discussed in Section 6.2.

Mitigative Measures- The short-term employment effects will be beneficial to both the overall Hawaii and local economies. No mitigative measures are considered necessary.

6.1.15.1 Economic and Fiscal Impact to County and State of Hawai'i

Probable Impacts

A Fiscal Impact Analysis projects that Palamanui will create 1,000 permanent jobs by 2010 and around 1,850 jobs by 2014. Construction at Palamanui will support nearly 2,600 person years of employment or about 250 jobs per year over the life of the project. The Fiscal Impact Analysis report (2003) is provided in *Appendix I* of this report.

Employment trends are prime indicators of the economic growth of an area. Increases in employment generate growth for most sectors of the local economy and dictate the rate at which it will expand. Since 1980, the Hawai'i County market area has experienced growth in

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almost all employment sectors. Fueling the Hawai'i County market area's employment growth is an increasingly diverse economic base. The market area is expected to continue to experience steady growth especially with the addition of a University in the Palamanui region, which will serve as a catalyst for more economic growth.

Planned improvements will generate short-term direct employment, both on- and off-site, during the construction period which will last approximately ten years. The number of jobs at any given time will vary considerably, depending on the level of construction activity. Construction activity will also generate indirect and induced employment opportunities and multiplier effects. Those affected will be construction workers and those providing construction related services, local material suppliers and retail businesses. Total construction spending at Palamanui is expected to be just over 304 million. This spending supports over 2,600 person years of construction employment over the life of the project. In addition to the creation of construction jobs, the State of Hawai'i will receive excise tax revenue on finished development and building materials, conveyance taxes, and income taxes on construction wages. These will amount to an additional \$13.9 million in State revenue over the life of the project. Based on DBEDT model of the impact of construction on the Hawai'i economy, the construction expenditures of \$304 million on the Palamanui will result in an increase in total output of \$375 million, and additional 3,700 persons years of employment, and an additional \$175 million in household income. See Fiscal Impact Analysis in *Appendix I* for details. Palamanui will result in 1,000 permanent jobs by 2010 and 1,850 jobs by 2014.

Mitigative Measures – The short-term employment effects will be beneficial to both the overall Hawai'i and local economies. No mitigative measures are considered necessary in response to increased short-term employment. Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.16 Roadways and Traffic

The development of traffic projections for the project involves trip generation, trip distribution, and traffic assignment. The traffic report analyzed future traffic conditions in the area both with the project and without it for a 10 year period ending in 2014. The traffic report analyzed future traffic at both a new University Drive intersection with Queen Ka'ahumanu Highway and an intersection at the bottom of the project site with Queen Ka'ahumanu Highway. The traffic report included traffic projections for Queen Ka'ahumanu Highway and intersections from the project site to the Palani Road intersection in Kailua-Kona. The traffic report also included traffic projections for Māmalahoa Highway at its Mākālei Estates and Ka'iminani Street intersections. Trip rates contained in *Trip Generation, 7th Edition*, were used to estimate the number of trips generated by the proposed project. The project will also generate trips that are internal to the development. In addition, the project has proposed to develop a University Village to support the proposed University of Hawai'i Center West Hawai'i, located on the adjacent property. The project is envisioned as a residential community with recreational amenities, a golf course, and commercial facilities that will interact with the development of the adjacent University of Hawai'i Center West Hawai'i. Information contained in the *Trip Generation Handbook*, published by ITE, estimates an internal capture rate of 30 percent for similar multi-use developments. As a conservative estimate, an internal capture rate of approximately 20 percent was used to estimate internal trips. The project traffic was distributed onto the existing roadway network based on field observations and existing peak hour turning movement volumes. The trip distribution factor percentages are shown in *Table 11*.

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Direction (to/from)	Factor
North of Project Site using Māmalahoa Highway	4%
South of Project Site using Māmalahoa Highway	9%
North of Project Site using Queen Ka'ahumanu Highway	37%
South of Project Site using Queen Ka'ahumanu Highway	50%
Total	100%

Table 6.1

Trip Distribution Factors

Access to the Project site is proposed to utilize the existing Mākālei Estates roadway ("Mākālei Access Road") with one of two alternative connections with Queen Ka'ahumanu Highway. One alternative access (Northern Project Access Road) would have the Project access road intersect Queen Ka'ahumanu Highway north of its existing intersection with Keāhole Airport, adding another "tee"-intersection on Queen Ka'ahumanu Highway. The second alternative access (Airport Access Road) would construct the Project access road across from Keāhole Airport Road at its intersection with Queen Ka'ahumanu Highway, to form the fourth leg of the intersection. The distributed Project traffic was added to their respective base year traffic volumes for each of the three phase of development.

The following are the conclusions of the traffic study for future year conditions without the project:

- Installation of a traffic signal system at the Māmalahoa Highway/Ka'iminani Drive will most likely be warranted by the Year 2008.
- There will be a lack of north-south capacity caused by regional traffic demand in the North Kona area if the traffic volumes projected for future years without the Project are realized. Roadway improvements, such as the widening of Queen Ka'ahumanu Highway from Kealakehe Parkway to Keāhole Airport Road (Base Year 2011), will be required to serve the regional demands of the North Kona area. Without regional improvements, the intersection of Queen Ka'ahumanu Highway/Palani Road, and Māmalahoa Highway/Ka'iminani Drive will experience over capacity conditions without or with the Project. Alternative north-south routes will ultimately be required to improve traffic conditions in the North Kona area (Base Year 2014). This improvement will be dependent on the resolution of right-of-way issues with the private landowners in the proposed areas.

Probable Impacts

A Traffic Impact Analysis report was prepared for the proposed project. (*Appendix E*). The report includes an analysis and discussion of each of the proposed access routes, including the

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intersection of Queen Ka'ahumanu Highway and the entrance for the Kona International Airport at Keāhole (KOA). It also includes the timetable for phases I and II of the Queen Ka'ahumanu Highway expansions. Plans for access to the highway will be coordinated with the State Department of Transportation (DOT).

Construction activities will create some short-term effects primarily from trucks, heavy equipment and other vehicles that will use existing roads - primarily Queen Ka'ahumanu Highway - to access construction areas, for the purpose of delivering construction materials and hauling away demolition debris. While construction vehicles are relatively slow and difficult to maneuver, it is anticipated that they will only marginally affect overall traffic flow, especially since there is little to demolish. Commuting construction workers will slightly increase traffic levels, although their effect is anticipated to be negligible.

Following is a discussion of two (2) alternative plans and the probable impacts the Project will have at the three phases of construction:

Northern Project Access Road Alternative

- Phase I – Year 2008 Traffic Conditions Impacts

Queen Ka'ahumanu Highway/Northern Project Access Road

The Queen Ka'ahumanu Highway/Northern Project Access Road intersection will warrant the installation of a traffic signal system and the following intersection lane configurations are recommended:

- Northbound Approach – two (2) through lanes and an exclusive right-turn deceleration lane.
- Southbound Approach – two (2) through lanes and an exclusive left-turn lane.
- Westbound Approach – an exclusive left-turn lane and an exclusive right-turn lane.

With the traffic signal system and the above lane configurations, the intersection will operate overall at LOS B during the AM peak hour of traffic and at LOS D during the PM peak hour of traffic.

With the widening of Queen Ka'ahumanu Highway between Henry Street and Kealakehe Parkway, overall intersection or individual traffic turning movements at all other study intersections will operate at LOS D or better except at the following locations which may operate at LOS E and F (please refer to the Traffic Impact Assessment Report, January 2004 (TIAR) which can be found in *Appendix E* for details):

- Queen Ka'ahumanu Highway/Palani Road
- Queen Ka'ahumanu Highway/Ka'iminani Drive
- Queen Ka'ahumanu Highway/Keāhole Airport Road

- Phase II – Year 2011 Traffic Condition Impacts

With the widening of Queen Ka'ahumanu Highway from the Northern Project Access Road to Henry Street and the two (2) eastbound left-turn lanes at Palani Road, Year 2008 Traffic Mitigation Measures, traffic at the study intersections will overall operate at LOS D or better, except at the following locations which may operate at LOS E (please refer to the TIAR, *Appendix E* for details):

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- Queen Ka'ahumanu Highway/Palani Road
- Māmalahoa Highway/Ka'iminani Drive
- Phase III – Year 2014 Traffic Condition Impacts

Queen Ka'ahumanu Highway/Northern Project Access Road

The intersection lane configuration will be similar as Year 2008 and Year 2011 except for the westbound approach. The Northern Project Access westbound approach is projected to have a demand of approximately 665 vehicles and will require two (2) exclusive left-turn lanes and an exclusive right-turn lane. With the above improvement, traffic at the intersection will overall operate at LOS D or better during the AM and PM peak hours of traffic. With the widening on Queen Ka'ahumanu Highway from the Northern Project Access Road and the two (2) exclusive eastbound left-turn lanes on Palani Street, traffic at the study intersection will overall operate at LOS D or better, except at the following locations which may operate at LOS E or F (please refer to the TIAR, *Appendix E* for details):

- Queen Ka'ahumanu Highway/Palani Road
- Queen Ka'ahumanu Highway/Ka'iminani Drive
- Queen Ka'ahumanu Highway/Keāhole Airport Road
- Māmalahoa Highway/Ka'iminani Drive

Airport Access Road Alternative

The project may construct an alternative access point (Airport Access Road) on to Queen Ka'ahumanu Highway in lieu of the Northern project Access Road. The construction of the Airport Access Road will be located across from the existing Keāhole Airport Road and will form the fourth leg at the existing Queen Ka'ahumanu Highway/Keāhole Airport Road intersection. However, should the Airport Access Road be pursued, land acquisition issues would need to be resolved. The intersection analyses for the other study intersections will remain the same regardless of which access point on Queen Ka'ahumanu Highway is chosen.

- Phase I – Year 2008 Traffic Condition Impacts

As with the Northern Project Access Road, the widening of Queen Ka'ahumanu Highway from a two-lane highway to a four-lane highway from the Northern Project Access Road to Kealakehe Parkway was recommended to alleviate over capacity conditions. However, with the airport Access Road alternative, the widening of Queen Ka'ahumanu will only be required from Keāhole Airport Road to Kealakehe Parkway. With the widening, the following intersection lane configurations are recommended:

Queen Ka'ahumanu Highway/Keāhole Airport Road/Airport Access Road

The following intersection configurations are recommended:

- Northbound approach – an exclusive left-turn lane, two through lane, and an exclusive right-turn lane.
- Southbound approach – an exclusive left-turn lane, two through lanes, and an exclusive right-turn lane.
- Eastbound approach – an exclusive through lane, an exclusive left-turn lane and a right-turn lane connecting to a southbound acceleration lane forming a “free” right-turn lane.

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- Westbound approach – an exclusive through lane, an exclusive left-turn lane and a right-turn lane connecting to a northbound acceleration lane forming a “free” right-turn lane.

With the above intersection configurations, individual intersection traffic movements will operate at LOS D or better during the AM and PM peak hours of traffic. Overall, the intersection will operate at LOS C during the AM and PM peak hours of traffic.

- Phase II – Year 2011 Traffic Condition Impacts

Queen Ka’ahumanu Highway/Keāhole Airport Road/Airport Access Road

The intersection lane configuration will be similar to Year 2008 except for the westbound approach. The Airport Access Road westbound approach is projected to have a demand of approximately 525 vehicles and will require two (2) exclusive left-turn lanes. With the above improvement, traffic at the intersection will operate at LOS D or better except for the Airport Access Road westbound through traffic and the Keāhole Airport Road eastbound through traffic. The through traffic on the westbound and eastbound approach will operate at LOS E during the PM peak hour of traffic. The demand for the westbound and eastbound through volumes, however, is low as five (5) vehicles per hour are projected during the PM peak hour of traffic.

- Phase III – Year 2014 Traffic Condition Impacts

Queen Ka’ahumanu Highway/Keāhole Airport Road/Airport Access Road

The intersection configuration will remain the same as recommended for the Year 2011 (Phase II). The individual traffic movements will operate at LOS D or better, except at the following approaches which may operate at LOS E (please refer to TIAR, *Appendix E* for details):

- Airport Access Road approach
- Keāhole Airport Road approach
- Queen Ka’ahumanu Highway

Mitigative Measures – Hiluhilu Development will provide a dedicable mauka-makai connector roadway between Māmalahoa Highway and Queen Ka’ahumanu Highway. This would relieve some of the traffic along both highways by providing another alternative pathway without continuous use of the highways.

Hiluhilu Development will design the main access road from the University Village to the Airport Intersection as a collector street to accommodate the mauka-makai roadway shown in the County’s K to K Plan. This alignment minimizes the number of intersections to Queen Ka’ahumanu Highway. It will also create a mutually beneficial access to lands belonging to the DHHL and DLNR as well as improving the intersection capacity to the Airport. Hiluhilu Development is working closely with the SDOT Highways in the design of the intersection.

Regarding the improvement recommended in the TIAR, Hiluhilu Development will pay its fair share of roadway/transportation improvement costs that address regional conditions. The development of a policy and formula for determining this fair share needs to be developed by the SDOT and County Public Works agencies in consultation with landowners.

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Construction activities will be appropriately scheduled to avoid unnecessary impacts on traffic. Contractors will be responsible for providing necessary traffic controls and precautions to maintain traffic safety on roadways bordering the construction site.

6.1.17 Solid Waste

Probable Impacts

No significant short-term impacts on the existing solid waste collection and disposal system or the environment are anticipated as a result of the proposed development. There will be no demolition waste, as the property is currently undeveloped. The majority of pre-construction waste will be green waste from site clearing. Approximately 1,392 tons of solid waste is expected to be generated from the construction of the proposed 845 residential units. Approximately 1,087 tons of solid waste is expected to be generated from the construction of the proposed 660,000 square feet of commercial activities. Solid waste typically generated by construction activities includes wood, drywall, cardboard, metals and other materials. Solid Waste calculations are provided in *Appendix R*.

Mitigative Measures – A solid waste management plan will be developed which will identify efforts to minimize waste generated at Palamanui during construction and operation. At minimum the plan will include the following:

- During site excavation and grading, green waste will be generated. Green waste will be recycled. Once construction begins, recycling will be encouraged and practiced as practicable and to the level available within the County of Hawai'i. Non-hazardous waste will be transported directly to the landfill.
- Prevention of waste is called source reduction. During construction, Hiluhilu Development will plan efficiently for material use.
- Efforts to re-use materials will be a component of the solid waste plan. In the construction phase efforts will be taken to reuse materials as much as possible, such as scrap generated on the site.
- Recycling will be an important part of both the construction and operational phase of the development. Recyclable materials will be separated out from non-recyclable materials, hauled from the site to the appropriate company, and eventually processed to make new products. Hiluhilu Development will also look into buying recycled products as both building materials and for use for Palamanui.

6.1.18 Utilities/Power/Infrastructure

Probable Impacts

The proposed project requires the provision of basic infrastructure. This includes electrical power, telecommunications services, water and wastewater facilities. Because the parcel is currently undeveloped, the project site is not serviced by electrical nor communication services. Short-term impacts involves the construction for utility service lines and coordination with local, county and state agencies to mitigate regional impacts of infrastructure demands.

Mitigative Measures - Since the project site is currently undeveloped, utilities will need to be brought on site. This project will use green/climate appropriate architecture incorporating energy efficient technology and design, and appropriate vegetation and landscaping to

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moderate climatic effects. Buildings will consider LEED (Leadership in Environmental Design) or similar criteria in its design. Working with the County, it hopes to participate in finding and encouraging energy efficient methods for transporting employees to their place of work. It will also work with HELCO to consider solar and co-generation opportunities in the development. All power lines will be placed underground.

6.1.18.1 Water Supply

Probable Impacts

The development of Palamanui will require improvements to the County Department of Water Supply (DWS) system for the area, including completion of Kau Well 2, outfitting it with a 700 GPM submersible pump and providing necessary appurtenances; new transmission lines, particularly between Well No. 2 and the DWS Pu'ukala Tank; storage tanks; a water system on the property built to DWS's standards and related improvements. The development will generate an increased demand for 801,000 gpd of potable water and 1.2 mgd of irrigation water. Some of the potable water demand will be accommodated by the Kau Wells 1 and 2. Kau 1 and 2 Wells measure 750 gpd each, which can support the Palamanui potable water demands. The need for additional well sources to support full buildout of the project will continue to be examined.

Waimea Water Services has estimated that the aquifer around the Kau property has a conservative estimated sustainable yield of about 1mgd/mile of aquifer width. Further to the south above Kaloko Honokōhau USGS reported an estimate of 3mgd/mile. (See section 4.9 for details on sustainable yield) These aquifers will need to be developed further to accommodate growth in demand for potable water in North Kona.

Development of the three brackish water wells will tap into the brackish portion of the groundwater supply. This water will be used to irrigate the golf course, the recreational parks and common area landscaping along roadways and buffer areas. Total demand will vary with the time of development and the amount of recycled water that is available. Golf course irrigation water demand is anticipated to be about 1.0 mgd. The golf course irrigation use of brackish groundwater is expected to decline to about 0.2 mgd when the wastewater treatment plant is operating at buildout because of the expected 850,000 gpd of recycled water that is projected for irrigation.

Mitigative Measures – Hiluhilu, together with the County Department of Water Supply and other major landowners in the area will participate in the improvements to the County Department of Water Supply infrastructure to provide potable water for the project. The proposed water main connection between the Mākālei Estates and the existing DWS reservoir mauka of the Keāhole airport access road and Queen Ka'ahumanu Highway intersection will be a part of those improvements and will improve the distribution capabilities of the DWS system. There is an ongoing coordinating effort between Hiluhilu, other major landowners, DWS and DLNR to improve the water distribution system for the area.

6.1.18.2 Wastewater Disposal

Probable Impacts

The on-site collection, treatment, and disposal of wastewater will not impact any existing wastewater systems.

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Mitigative Measures – Wastewater from Palamanui and from the adjacent University West Hawai'i Campus improvements would be processed by a private wastewater treatment plant which will be built as part of the project. The proposed treatment level will produce an effluent suitable for golf course and landscape irrigation, thus conserving the available water resources. Effluent that is discharged to the ground through injection wells due to inclement weather or other factors would be of high quality and would not detrimentally affect the aquifer or regional coastal waters.

Long-term impacts and mitigative measures are discussed in Section 6.2.

6.1.18.3 Housing

Probable Impacts

The impacts to housing are positive. Overall, the project will provide 845 new residential units and a 120-room University Inn. During construction the short-term impacts do not impact housing. There will be no displacement from existing housing. The need for short-term housing for construction workers are not expected. The short-term impacts raised during development of Palamanui will probably involve community interest and discussion regarding the long-term contributions towards affordable housing and interest regarding probable residents of Palamanui.

Mitigative Measures – Recognizing the need and requirement for affordable housing, Palamanui will include 100-units of housing within Palamanui to meet the anticipated 10% affordable housing policy of the County of Hawai'i. It is planned for 50 of these units will be for rental and 50 will be for sale. Most of these units will be built in or near the University Village. Section 6.2.18.3 and Appendix N details the proposed the long-term contributions towards affordable housing units.

Long-term impacts and mitigative measures are discussed in Section 6.2.18.3.

6.1.18.4 Education

Probable Impacts

The residents of Palamanui will include families with school-aged children which will generate a need for new school facilities. However, during construction there will be no short-term impacts on the need for new school facilities. There will be long-term needs to provide schools. These impacts are discussed in section 6.2.18.4.

Mitigative Measures- The Department of Education has adopted a new formula for determining school impact based on the number and type of housing units being constructed. Single-family homes generate a greater need for public schools than multi-family units and therefore generate a higher impact fee. Palamanui will pay its fair share of the Department of Education School Impact fee as required. Hiluhilu will enter into discussions with the DOE on this issue and reach a negotiated agreement on this issue. See Section 6.2.18.4 and Appendix M for details regarding calculations regarding Hiluhilu Development's fair share contributions to the Department of Education.

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6.1.18.5 Police and Fire

Probable Impacts

New development including Palamanui increases the need for life safety services. Wildfires are potentially serious hazards in arid environments.

Mitigative Measures- The sites for a new fire station or police substation can be made available to these departments if needed. A wildfire plan will be developed for Palamanui. This plan will consider both the risks to natural resources such as the dryland forest preserve and cave environments as well as residences and other urban development.

6.1.18.6 Medical and Emergency Services

Probable Impacts

Medical emergencies and health care are important in modern life. This service becomes increasingly more necessary as the population ages.

Mitigative Measures- The project plan provides space for medical facilities and emergency services. All roads will be built to accommodate emergency vehicles. Clinics and Doctors' offices are planned for Palamanui along with medical research and other healthcare related establishments. The proximity of Kona International Airport at Keāhole is a positive feature in that certain complicated situations may require evacuation to Honolulu specialists and the location of the Airport is fortuitous in such situations.

6.1.19 Agriculture

The short-term and long-term impacts and mitigative measures are expected to be the same.

6.1.20 Conservation Lands

The short-term and long-term impacts and mitigative measures are expected to be the same.

6.2 POTENTIAL LONG-TERM IMPACTS

6.2.1 Topography, Soils, and Drainage

Probable Impacts

Topography – The project does not propose major re-grading of the site. The existing topography will be altered only to the extent necessary for construction of the proposed improvements. It is anticipated that grading will occur on a localized scale and that cut and fill quantities will generally balance as construction progresses.

Soils – Based on the conclusions of a soils report prepared by Tamimi (2003) there is no adequate soil in all of the area for agriculture, and there is a complete absence of cultivable land in all portions of this parcel. Soil will be imported for construction of the golf course and landscaping.

Drainage – Proposed improvements at Palamanui will alter drainage patterns in minor ways. The golf course and residential development will alter drainage. The use of drywells and retention basins will be implemented to mitigate the drainage impacts from this project.

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Mitigative Measures –

Topography – No significant long-term impacts to the topography are expected.

Soils – Storm water runoff from impervious areas will be collected through a system of swales, catch basins, and pipes and transported to drywells or infiltration areas for disposal within Palamanui. Infiltration areas will be located in the golf course and other open spaces, where practical. Buffers and small siltation basins will help to filter and trap potential pollutants onsite through physical and biological means. Drywells will be located within roadway rights-of-way and within individual parcels, as needed. Turf and grounds maintenance will minimize pollution potential from runoff through controlled applications. The dry wall design will aid in avoiding lava tubes and the casing and filtration designs will minimize ground water contamination. Monitoring and mitigation measures will minimize adverse effects should contamination occur.

Soil that is imported for golf course and landscaping will be covered or planted promptly after installation of the soil to minimize erosion.

Drainage – The general solution to local drainage in Hawai'i County has been to construct dry wells, which redirect any man-made runoff into the ground. The dry wells and retention basins will be designed to filter pollutants and silt through sand and gravel layers. Vegetated retention basins will also provide some biological uptake of nutrients in storm water. In addition, storm water entering the groundwater from the project site will be filtered through soil and lava layers ranging from approximately 140 to over 900 feet thick, based on site elevations ranging from approximately 150 to 920 feet above sea level. Percolation through such thick soil and lava layers will effectively remove most pollutants from the storm water before it reaches groundwater.

Runoff that enters drywells from hardscape areas would not be subject to biological uptake, but the deep lava filtration effectively removes many pollutants, except for some dissolved nutrients and persistent pesticides. Pesticides available these days are generally not persistent, as they break down rather quickly in the environment. The golf course and landscape management plans will be responsible for minimizing the discharge of fertilizers and pesticides, and selecting appropriate products to minimize storm water pollution. Storm water runoff from impervious areas will be collected through a system of swales, catch basins, and pipes and transported to storm water drywells or infiltration areas for disposal. The permeability of the existing soils is evident by the absence of any natural storm water channels or gullies in the vicinity of the site. Infiltration areas will be located in the golf course and other open spaces, where practical. Drywells will be located within roadway rights-of-way and within individual parcels, as needed.

6.2.2 Flood and Tsunami Inundation, Lava Flow, and Earthquake Hazards

Probable Impacts

Flood: The property is within Zone X, which represents areas determined to be outside the 500-year floodplain.

Tsunami: The Federal Emergency Management Agency Flood Insurance Rate Map indicates no areas of potential tsunami inundation on the property. Due to its elevation and distance from the shore the risk from tsunami hazards is largely non-existent.

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Lava Flows: The Kailua-Kona area is within Zone 4, indicating a moderate hazard. Zone 4 includes all of Hualālai, where the frequency of eruptions is lower than on Kilauea and Mauna Loa. Flows typically cover large areas.

Earthquakes: The entire island of Hawai'i is susceptible to earthquakes originating in fault zones under and adjacent to the island. Under the uniform building code seismic provisions, a Zone 4 area could experience severe seismic activity between .30 and .40 of the earth's gravitational acceleration (g-forces) causing major damage to poorly designed or built structures.

Mitigation Measures –

Flood – No mitigation measures are needed.

Tsunami – No mitigation measures are necessary.

Lava Flows – There are no mitigation measures.

Earthquakes – The potential of damage incurred by strong earthquakes is a prevalent concern for the entire county of Hawai'i. As such, the proposed projects will be in compliance with the Uniform Building Code and County of Hawai'i structural design standards, including earthquake design provisions.

6.2.3 Surface Water Quality

Probable Impacts

There are no streams, drainage ways or surface water bodies in the area.

Mitigative Measures – Surface runoff generated by the development will be channeled through swales and storm drains into dry wells, drainage sumps, detention or infiltration areas. This will allow percolation of the water into the groundwater system. The drainage system will be designed using best management practices to filter out surface pollutants to the extent practicable.

The general solution to local drainage in Hawai'i County has been to construct dry wells, which redirect any man-made runoff into the ground. The sporadic nature of the rainfall rarely, if ever, results in long-term pollution. There are no streams or drainage ways in the area and any man-made runoff should be directed underground as it is presently part of the existing recharge and should not be lost to the system. There are no bodies of water in the vicinity of Kau project which might be negatively influenced by the project which might be negatively influenced by the project including the underlying brackish lens.

The dry wells and retention basins will be designed to filter pollutants and silt through sand and gravel layers. Vegetated retention basins will also provide some biological uptake of nutrients in stormwater. In addition, stormwater entering the groundwater from the project site will be filtered through soil and lava layers ranging from approximately 140 to over 900 feet thick, based on site elevations ranging from approximately 150 to 920 feet above sea level. Percolation through such thick soil and lava layers will effectively remove most pollutants from the stormwater before it reaches groundwater.

Runoff that enters drywells from hardscape areas would not be subject to biological uptake, but the deep lava filtration effectively removes many pollutants, except for some dissolved nutrients and persistent pesticides. Pesticides available these days are generally not persistent, as they break down rather quickly in the environment. The golf course and landscape

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management plans will be responsible for minimizing the discharge of fertilizers and pesticides, and selecting appropriate products to minimize storm water pollution.

6.2.4 Groundwater

Probable Impacts

The urban uses of the land can present a risk of contamination from accidental spills of hazardous materials or from non-point source pollution. The leaching of chemical fertilizers and pesticides used on landscaped areas presents a potential for some degree of adverse effects on groundwater.

The Hiluhilu project will include a golf course, medical facility, wastewater treatment plant, and stormwater injection wells. All of these have some potential to introduce contaminants to groundwater migrating beneath Kona International Airport at Keāhole. Also of concern are any potentially negative effects to groundwater quality associated with the Natural Energy Laboratory of Hawai'i (NELHA). There are indications, according to data produced during the 1999 USGS Kaloko- Honokōhau study, that there may be some man-made influence as inferred by the detection of phenols in the shallow wells makai of the Kaloko Industrial Park (Water Resources Investigation Report 99-4070). There are a number of potential sources of phenols, however, there is no conclusive evidence as to source. Regardless, there are no bodies of water in the vicinity of the Kau project which might be negatively influenced by the project including the underlying brackish lens.

The area is underlain by very fresh, young and permeable lava from Hualālai volcano. The lands makai of the project are covered with the youngest of the eruptive series of 1801, which contain numerous lava tubes. The result is a very high horizontal transmissivity in the aquifer as reflected in tidal fluctuation in the water table. A brief pollution event, even if it enters the aquifer, will be attenuated as it approaches the shore. Even long-term pollution is likely masked and diluted as the groundwater flow approaches the shoreline.

The Hiluhilu project will not compete with Native Hawaiian rights to water. There is no surface water in this area. The groundwater being used for this project (potable water and nonpotable brackish irrigation water) is from the recharge area shown in the Ground Water Study (*Appendix J*). That recharge area is not being relied upon to provide water to the Department of Hawaiian Homelands lands in the North Kona area. State lands are to be supplied by water from wells to the south (and upgradient) of the project area. The critical component to provide water in this area is not the lack of available groundwater but the need to expand the County Department of Water Supply's regional water storage and transmission systems.

Mitigative Measures – The potential for contamination from hazardous materials is reduced because this project does not include industrial uses or intensive agriculture. Hiluhilu recognizes that urban uses present a potential for non-point source pollution. The Stormwater runoff improvements for the project will accordingly be designed using best management practices to contain such runoff within the project site and to provide for appropriate treatment or remediation for such pollution.

The golf course will be professionally managed. Irrigation, fertilizer application and use of pesticides will be managed at all times, using management techniques such as integrated pest management. Drought tolerant native plants will be used to the extent possible to minimize

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application of irrigation water. Over fertilization and excessive use of pesticides will be avoided. Lysimeters will be installed to allow monitoring of conditions.

The dry wells and retention basins will be designed to filter pollutants and silt through sand and gravel layers. Vegetated retention basins will also provide some biological uptake of nutrients in stormwater. In addition, stormwater entering the groundwater from the project site will be filtered through soil and lava layers ranging from approximately 140 to over 900 feet thick, based on site elevations ranging from approximately 150 to 920 feet above sea level. Percolation through such thick soil and lava layers will effectively remove most pollutants from the stormwater before it reaches groundwater.

Runoff that enters drywells from hardscape areas would not be subject to biological uptake, but the deep lava filtration effectively removes many pollutants, except for some dissolved nutrients and persistent pesticides. Pesticides available these days are generally not persistent, as they break down rather quickly in the environment. The golf course and landscape management plans will be responsible for minimizing the discharge of fertilizers and pesticides, and selecting appropriate products to minimize storm water pollution.

Hiluhilu will participate in coastal water monitoring programs for the area for monitoring of near shore water quality.

Hiluhilu will cooperate in programs to trace the sources of contaminants found in coastal water in the area and to remediate the effects of contaminants originating from the project area.

6.2.5 Coastal Waters

Probable Impacts

No surface water is expected to reach the coast directly, or flow into drainage ways north or south of the property and so reach the coast. There is concern that golf course fertilization if unmanaged, could contaminate the subsurface water flow into the nearby ocean, potentially degrading coastal water quality.

Mitigative Measures – The golf course will be properly designed and managed as to minimize impact on the coastal waters. The turf areas will be properly graded and covered with layers of subcourse along with the turf will be thick enough to absorb and bind nutrients to the surface. Additionally, golf course maintenance will follow best management practices and will be fertilized as much as the turf requires, no more. This will ensure that little or no fertilizer will leach into the ground. The arid climatic conditions will require additional irrigation using brackish non-potable water which will be provided by on-site wells and treated wastewater from the project. The use of treated wastewater to supplement irrigation will result in the consumption of phosphorus and nitrogen in the treated wastewater in the turf. This will allow us to reduce supplemental fertilization. Landscaping design, including plant selection and depth of soil will limit the need for excessive irrigation. As part of the planning, the golf course will use salt tolerant grasses.

An active monitoring program including soil moisture measurements and lysimeters will ensure that leaching from the soil is not occurring. We will use best management practices in handling storm water and surface water runoff to monitor for non point source pollutants. Given these controls, the nature of the proposed development and the distance from the shoreline, it does not appear that there would be any significant impact on the quality of groundwater as it approaches the shoreline.

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Hiluhilu will develop a water quality monitoring program and install at least one groundwater monitoring well. Groundwater monitoring was requested by DOT Airports to address their concern of potential groundwater degradation, as they are hydraulically downstream from the project. Golf course and stormwater systems will be designed, constructed, and operated to prevent elevated levels of pollutants from entering the groundwater. Also, golf course maintenance and storm water management plans will identify mitigative measures to be taken if elevated pollutant levels are found in groundwater immediately downstream of the project site.

6.2.6 Hazardous Materials

Probable Impacts

The property is an agricultural site and was used for ranching purposes. Therefore it is highly unlikely that hazardous materials will be found on the site. However, with the development of health technology industries and the University campus addition, there exists a long-term possibility of hazardous materials being generated and disposed.

Mitigative Measures – The University system already has developed plans for mitigating this kind of hazard and will utilize the same stringent standards on this satellite addition to their university system. Accordingly, a policy and plan will be developed addressing the production and disposal of hazardous waste materials for the technology park. The golf course will also have a monitoring system be in place and Best Management Practices and Integrated Pest Control Management will be utilized.

6.2.7 Vegetation and Wildlife

Probable Impacts

The development of Palamanui will result in changes to existing vegetation. Land clearing activity has the potential for disturbing birds which frequent the area and cave fauna in caves within the project area.

Vegetation (flora) – Human impact has substantially altered the vegetation of much of the property, either directly (e.g. clearing for farming and ranching) or indirectly (e.g. introduction of cattle and goats, introduction of alien plants, and fire). However, one area still exists where the original Lowland Dry Forest ecosystem is intact (Figure 4-6). This Dry Forest remnant is both ecologically and culturally valuable because over 95% of the State's Dry Forests have been destroyed, and the rest are severely degraded (Wagner, et. al., 1990). Comprising approximately 65-75 acres, this forest fragment may rank among the most intact of any remaining on the island, and perhaps the State. Preservation of the Dry Forest fragment and areas containing rare and endangered trees listed in Table 4-1, is a priority during the project planning.

Hart (2003) recommends that all maua, 'aiea, and uhiuhi trees be preserved. These trees should be fenced in as large an enclosure as possible to protect them from goats. Within these enclosures, seedlings of these and other rare species could be planted. This small scale restoration effort could be coordinated with the North Kona Dry Forest Working Group. Additional recommendations are outlined in Appendix B.

Fauna(Wildlife) – The federally endangered Hawaiian hawk ('Io) was seen on the mauka portion of the property. A specimen of the Hawaiian short-eared owl (Pueo), a federally listed species of concern, was seen on one occasion. Construction activities could disturb nesting of bird

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species during the breeding season. One introduced but unusual mammal in Kona is the feral donkey (*Equus asinus*). The 'Io and Opeapea (Hawaiian hoary bat) may breed in the area at certain times of the year. Volant Opeapea may roost in the area at any time during the year. 'Io may use the area for foraging and loafing at any time during the year. Both species could be disturbed or directly harmed by grubbing and tree felling.

The Opeapea breeds at lower elevations during summer months (June to August). Young Opeapea are non-volant and could be killed if vegetation, shrubs, or trees they are in are grubbed or cut. To avoid potential take of young, non-volant Opeapea that could be in the area, no grubbing or tree-cutting should be done from June to August.

The 'Io is known to breed in areas near the action area and is found in moderate to high densities within portions of the project area. To avoid potential disturbance or harm to 'Io that could be nesting, no grubbing or tree-felling should be done during the 'Io breeding season (March to October). If this is not possible, surveys should be conducted in the early spring to detect potential breeding pairs.

Mitigative Measures - The preservation of the approximately 65-75 acre Lowland Dry Forest area will protect critical botanical resources. In addition, selecting native plant species for landscape elements for areas to be graded will ensure that rare and endangered species will be protected and will create more of a linkage between the built and natural environments.

An Integrated Natural Cultural Resource Management Plan will be developed to address preservation, mitigation, management and stewardship measures relating to the botanical resources within Palamanui. Land clearing will be coordinated to avoid disturbing nesting birds during the breeding season. Short-term mitigation measures apply to these long-term mitigation measures. The INCRMP will incorporate the following:

- The Dry Forest will be preserved.
- The Lowland Dry Forest will be preserved. This forest currently faces 4 major threats – bulldozing, fire, goats, and invasion by exotic plants. Portions of the golf course may be located adjacent to the dry forest area. Care will be taken to prevent the inadvertent introduction of alien species into the dry forest. If properly protected from these threats, this forest will be an immensely valuable asset to both the University and the surrounding community. In addition, preservation of this forest would protect nesting habitat for the endangered Hawaiian Hawk ('io) and continue to provide habitat for the Hawaiian amakihi. Project planners are working with the North Kona Dry Forest Working Group to establish a sound forest maintenance and management plan for this forest. It will address methods to control the invasive fountain grass during construction and post construction in order to mitigate any potential wildland fires. A fire management plan will be considered.
- Preserve as many wiliwili stands as possible. Many of the wiliwili on this property are truly exceptional specimens, and efforts are being made to preserve them. Many of these trees will be incorporated into the landscape plans.
- Preserve all halapepe, maua, 'aiea, and uhiuhi trees. These trees will be fenced in as large an enclosure as possible to protect them from goats. Within these enclosures, seedlings of these and other rare species native to the area could be planted. This small-scale restoration effort will be coordinated with the North Kona Dry Forest Working Group.
- Native species that occur naturally on the property will be selected as landscaping elements in areas that will be graded. In particular, maiapilo (a Species of Concern), alahe'e, and

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'ilima should do well as landscaping plants and have added benefit of being drought tolerant.

- New plants placed on site as landscape specimens will be grown from seed collected from the existing wild plants. Use of native plants in the landscaping, including the golf course, will create a net increase in coverage by native botanical species.
- Rodent and ungulate control plans will be considered.
- The issue of a "take" of an endangered species will be addressed so as to be in compliance with Sections 9 and 10 of the Endangered Species Act.

Use of native plants in the landscaping, including the golf course, will provide improved habitat for native fauna.

6.2.8 Cave Fauna

Probable Impacts

The proposed project may threaten cave ecosystems in the following manner 1) alteration or elimination of food and water inputs through changes in land use, 2) alteration of airflow and microclimate in caves by disturbance of the surface, 3) waste disposal and pollution, 4) invasions by alien species, and 5) direct and indirect disturbance of the habitat by human visitors.

The five caves found that contain a deep cave zone environment deserve protection. Two caves (14368C and 14338) are already designated to be preserved. Protection of Cave 14375B and the two segments in the Cave 14350 system, along with at least part of the natural surface environment and flora over the footprints and adjacent buffer areas is strongly recommended.

Mitigative Measures- An Integrated Natural Cultural Resource Management Plan will be developed to address preservation, mitigation, management and stewardship measures. The resource management plan should address mitigation measures to minimize the impacts upon the cave ecosystems, such as:

- Place significant caves along with a suitable buffer area of the surface surrounding the cave footprints within protective reserves.
- Control harmful invasive species within the cave reserves (especially fountain grass), and prevent the introduction of additional harmful invasive species.
- Monitor the surface vegetation over the cave footprints, and where possible, take remedial steps to encourage recovery of deep-rooted native species.
- Prevent wildfires.
- Consider including mitigation to minimize impacts on the cave ecosystem when managing open space, where appropriate.
- Consider gating especially sensitive and significant caves.
- Conduct additional biological surveys and ecological studies in caves by competent cave biologists with the goal of determining appropriate protective management strategies for subterranean ecosystems.
- Conduct biological surveys of cave segments discovered during project development.
- Water collection from caves will be terminated and they will be preserved and used as interpretive features.

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6.2.9 Cultural Resources

Probable Impacts

A Cultural Impact Assessment for the project was completed (*Appendix D*). The following describes the concerns and mitigative measures of the cultural and historic impact of this project identified by the cultural impact assessment report:

Landscaping and Salvaging Cultural Plants: Kau has important timber resources; lama, walahe'e, wiliwili, if need to be destroyed, salvage for cultural practitioners; or if removed by developer, stockpile for salvage. Attempt to transplant, if impossible, then salvage.

Sense of Kekaha: Adaptation to life on the lava fields is unique to Kekaha; the lava tube habitation, water-collection practices, cave habitations, petroglyphs, agricultural complexes exist in a place that initially appears to be a barren wasteland. These adaptations show an important aspect of the lifestyles and adaptability of ancient Hawaiians to the land. The native plants also are still present (some thriving) in this barren-looking place. Few examples of pre-contact life in Kekaha exist anywhere. An opportunity to protect and study the important features of this system adjacent to a likewise resource-rich, future University center is evident. It would be a shame if the students lost the perfect opportunity to learn more about the practices of ancient Hawaiians rights in their "back yard." It is hoped that portions of the landscape can retain their Kaha-ness so that the lavascape doesn't get greened over. Should be mindful of the land as it is and not forget where we are. Be mindful of making good choices about the use of precious resources like water.

View plane of Kau: Be mindful of the view planes; of view vantage points to Kohala and Maui and Mahai'ula and the shoreline and mauka to the hills: to Nahāhā, Pūhi-a-Pele, 'Io, Akahipu'u, Moananuiahea, 'Alala, the 'Ohi'as. The ramp area would be a good candidate for preservation...but don't put a building in front and obstruct the view.

Trails of Kau: There's a good trail linkage to the sites at the bottom of the project...maybe the trail in between the two would be modified in places, but if both sites could be designated for preservation and some sort of trail linkage between them could either be maintained or a functional replacement be put in so that the two sites could be linked. I think it would be a nice cultural experience for attendees of the University as well as others who may be in the area.

Naming: Because of the quality of the plant community (in Kau) I always hope that any of the landscaping that is done as part of any development there we can take our cue from what occurs there naturally. That whether it is naming places, if we want to name something and if the name is already taken up, perhaps we can add a characteristic of the plant, the Kona pronunciation...to incorporate both into the place names and perhaps also the landscaping.

The interpretative program for these lands should recognize the connection between Hewahewa and these lands. It would be pono to ask the Hewahewa and Mahi families to participate in further interpretative planning for these lands; just as it would be apropos to include the consultants in discussions regarding the future of the endemic/indigenous ethnobotanical plants on the land.

It should also be noted that for over a hundred years, native Hawaiians have lived in a culturally repressed state. It has only been within the last thirty years, due to evolved awareness, that native Hawaiians have been aggressively trying to reclaim their wahi pana (sacred and/or legendary places). The passage of Act 50 in 2000 legally recognizes and supports this effort. It is in this spirit that the recommendations here have been made.

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Mitigative Measures - An Integrated Natural Cultural Resource Management Plan will be developed to address preservation, mitigation, management and stewardship measures. While there were no burials found during the archaeological inventory survey, any inadvertent discovery made during the various preparation and construction phases of the proposed project, will follow proper protocols as required by the Hawai'i State Historic Preservation Division (SHPD) Burial Sites Program.

It is also recommended that an Integrated Natural Cultural Resources Management Plan (INCRMP) be implemented as it would address consultant issues and concerns regarding trails, ethno-botanical, indigenous and endemic plants, lava tubes and water-collecting caves, significant views from the site and an effort to retain the dry, open character of the Kekaha region. Specifically, the INCRMP will include the following elements regarding the preservation of the cultural resources:

- Active participation by the developer and representative from native Hawaiian kupuna from the Kekaha region.
- Consultation with members of the Hewahewa and Mahi families and the University of Hawai'i on interpretive programs.
- Use of Maria Orr's study and other EIS studies conducted for this project to coordinate cultural management planning with Dry Forest preservation and preservation of endangered species.
- Allowance for amendments to the plan to incorporate new information as it is received by the developer or kūpuna.
- Use of the INCRMP to guide landscaping design for the project.

Although much effort was made to locate people who are knowledgeable about Kau and/or the lands of Kekaha in general, there may be others who have even more pertinent knowledge specifically about Kau and the people who were the traditional guardians of this land. Consideration should be given to them should they come forth as information about the land and development project is made public.

As the Hiluhilu project development planning continues, Hiluhilu has committed to support further cultural research. This follow-up will include: additional interviews, transcribe Kūpuna Site Visit, summarize Kūpuna Site Visit, Hewahewa-Mahi research, Grantor-Grantee Index Research, Kekaulahao Research, participation in formulation of an integrated natural cultural resources management plan for the project and project area.

As the Hiluhilu project development planning continues, the owner has committed to further cultural research by Maria Orr. This follow-up work will include additional interviews, transcribing kūpuna site visit tape, summarizing kūpuna site visit, Hewahewa-Mahi research, Grantor-Grantee Index research, Kekaulahao ("petroglyph" name) research, and participation in formulation of an Integrated Natural Cultural Resources Management Plan for the project and project area. *Figure 3-3* illustrates the View Planes of Kau as described by kūpuna.

Hiluhilu Development LLC and its archaeological and cultural consultants have solicited input from longtime residents of the project area and persons with knowledge and interest in the cultural and natural history of this area and the overall Kekaha region. A number of these "cultural consultants" have met with the Hiluhilu "team" on more than one occasion and have provided valuable input on local resources. (See Cultural Assessment, *Appendix C*). Most of them have agreed to meet on the site approximately twice a year in the future to provide on-

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going cultural input. This group is being called the Cultural Advisory Committee. An overlapping and similar committee has been in place for the past ten years, providing advice and input to the Hawai'i Community College and West Hawai'i Center planning efforts for the adjacent 500-acre UH owned site. The members of this committee are: Mr. Eli Nahulu, Mr. Wendell Davis, Mr. Angel Pilago, Ms. Leinaala Lightner; Ms. Hannah Springer, and Mr. Gene Leslie.

6.2.10 Archaeological Resources

Probable Impacts

An archaeological inventory study has been completed to identify the locations of the archaeological sites throughout the project site. A complete report of the findings is provided in *Appendix C*. The project has been designed as to maximize the preservation of known archaeological sites and minimize the loss of these culturally significant resources.

Eighty-three archaeological sites were recorded within the boundary of the project area. The most frequent site type is Precontact temporary habitation. Of these, twelve are enclosures, ten are lava tubes, six are multi-feature complexes, four are terraces, four are modified outcrops, four are platforms, and two are pavements. Six sites were interpreted as Precontact permanent habitations; three of these are platforms, one is a terrace, and two are multi-feature complexes. One of these may have been associated with the large fishpond (Pa'aiea) reported to have existed along this section of coastline prior to being destroyed by the 1801 lava flow. There are fourteen trails and trail segments recorded, three cairn sites, three pāhoehoe excavations, two isolated finds in lava tubes, and one ceremonial site. Two groupings of petroglyphs were found, one associated with a trail and temporary habitation, and one with a permanent habitation complex. Nine Historic Period sites were identified: two animal enclosures; two boundary markers, a wall, a hunting blind, a road, and two habitation sites. These sites date from the late nineteenth and early twentieth centuries and appear to have been associated with Hu'ehu'e' ranch activities.

All of the sites retain sufficient integrity for further evaluation, and that evaluation indicates the sites (except for SIHP sites 14369 and 23871) are considered significant under Criterion D at a minimum. Site 14369 and 23871 are not considered significant. Four of the sites (SIHP Sites 14360, 14367, 23862 and 23864) are also considered significant under Criterion E based on their religious/ceremonial (presence of petroglyphs or shrine) association (*Table 4-4*).

For a resource to be considered significant it must possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following criteria:

- A) Be associated with events that have made an important contribution to the broad patterns of our history;
- B) Be associated with the lives of persons important in our past;
- C) Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;
- D) Have yielded, or is likely to yield, information important for research on prehistory or history;
- E) Have an important traditional cultural value to the native Hawaiian people or to another ethnic group of the state due to associations with traditional cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events

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or oral accounts—these associations being important to the group's history and cultural identity.

Treatment recommendations fall into three categories: Preservation, Data Recovery, and No further work. Of the 83 sites recorded during the current study, twelve (14%) are recommended for preservation and thirty (36%) are recommended for data recovery; no further work is the treatment recommendation for the remaining forty-one (50%) sites. At three of the preservation sites, only selected features or portions of the site will be preserved and the other features or portions of the sites will either be data recovered (SIHP Site 14351) or receive no further work (SIHP Sites 14362 and 23865). A Data Recovery Plan will be developed and submitted to DLNR-SHPD for review and approval for all sites recommended for data recovery; likewise, a Preservation Plan will be prepared and submitted.

The archaeological work did not cover any of the adjacent State land since the project will not involve any construction of other activity on that land.

Mitigative Measures – The Palamanui master plan has been redesigned to preserve the significant archaeological sites throughout the project site. Sites recommended for possible preservation will be surveyed, and the site plan modified as necessary to ensure proper treatment of significant archaeological features. In cooperation with the State Historic Preservation Office, a treatment and mitigation plan will be developed for any features determined to be archaeologically or historically significant. Once mitigated, there should be no further long-term impacts on archaeology. However, if in the future any inadvertent archaeological, cultural or historic discoveries are made on the property, Hiluhilu will report this matter to the State of Hawai'i, Department of Land and Natural Resources, Historic Preservation Division for review and assessment.

While there were no burials found during the archaeological inventory survey, any inadvertent discovery made during the various preparation and construction phases of the proposed project, will follow proper protocols as required by the Hawai'i State Historic Preservation Division (SHPD) Burial Sites Program.

An Integrated Natural Cultural Resource Management Plan will be designed to identify specific preservation and mitigation measures regarding the archaeological resources. As of March 2004, the archaeological inventory survey is still pending review by the State Historic Preservation Division, Department of Land and Natural resources.

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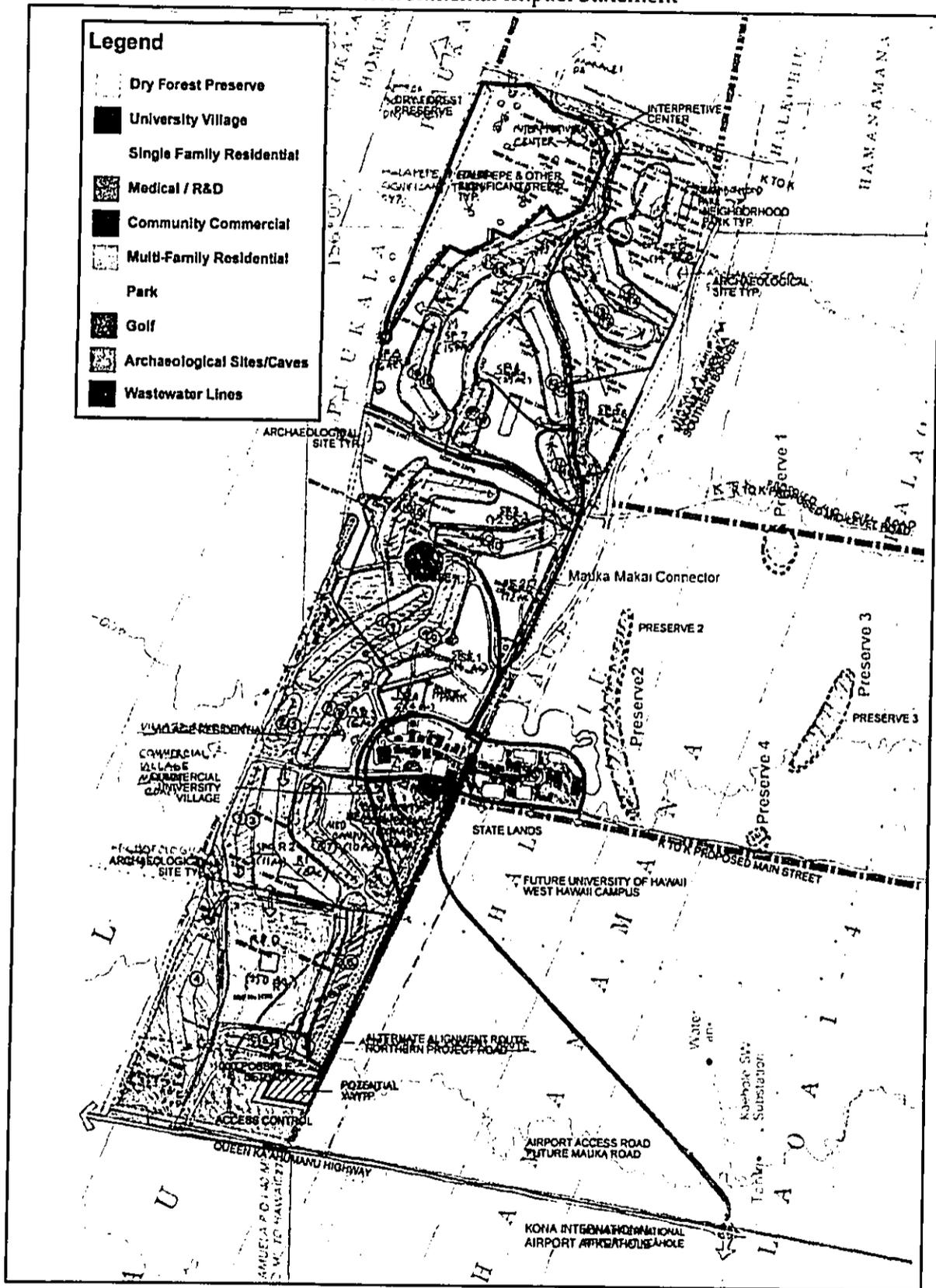


Figure 6-1
Master Plan Overlaid with Archeological Sites, Caves and Trails

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6.2.11 Air Quality

Probable Impacts

After construction is completed, use of the proposed facilities will result in increased motor vehicle traffic in the project area, potentially causing long-term impacts on ambient air quality. Motor vehicles with gasoline-powered engines are significant sources of carbon monoxide. They also emit nitrogen oxides and other contaminants.

For this project, three scenarios were selected for the carbon monoxide modeling study: (1) year 2003 with present conditions, (2) year 2010 without the project, and (3) year 2010 with the project. Year 2010 is when full development and occupancy is expected to be achieved. To begin the modeling study of the three scenarios, critical receptor areas in the vicinity of the project were identified for analysis. Generally speaking, roadway intersections are the primary concern because of traffic congestion and because of the increase in vehicular emissions associated with traffic queuing. For this study, the four key intersections identified in the traffic study were also selected for air quality analysis. These included the following intersections:

- Queen Ka'ahumanu Highway at Palani Road;
- Queen Ka'ahumanu Highway at Ka'imani Drive;
- Queen Ka'ahumanu Highway at Keāhole Airport Road;
- Queen Ka'ahumanu Highway at the northern project access road.

Mitigative Measures – After the proposed project is completed, any long-term impacts on air quality in the project area due to emissions from project related motor vehicle traffic should be small. Worst-case concentrations of carbon monoxide should remain within both the State and the national ambient air quality standards. Implementing any air quality mitigation measures for long-term traffic-related impacts is probably unnecessary and unwarranted.

6.2.12 Noise

Probable Impacts

The existing and future traffic noise levels for Palamanui were evaluated for their potential impact on present and future noise sensitive areas. The future traffic noise levels along the primary access roadways to the project were calculated for the year 2014.

Along the existing Queen Ka'ahumanu Highway, traffic noise levels are expected to increase by 3.3 to 4.4 DNL between CY 2003 and CY 2014 as a result of both project and non-project traffic. Along Māmalahoa Highway, traffic noise levels are predicted to increase by 2.3 to 3.5 DNL. Traffic noise increases due to project traffic are predicted to range from 0.6 to 2.1 DNL which is within the range of the noise increases caused by non-project traffic on these two roadways. These increases in traffic noise levels associated with project traffic range from the insignificant to the moderately significant. Fortunately, the larger and more significant increases in traffic noise levels are expected to occur along Queen Ka'ahumanu Highway, where the lands along the highway Rights-of-Way are generally undeveloped.

The project is outside of the airport noise contours, and special aircraft noise attenuation measures are not required over the project area. Project residents should not be impacted by traffic noise from Queen Ka'ahumanu or Māmalahoa Highways since adequate setback distances have been provided from the highways. Noise impacts from the nearby Keāhole Generating Station are not expected to affect the project due to the large distances between the

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station and the project site. In addition, sound attenuation measures have been recently incorporated into the station's generating equipment, which have reduced plant noise levels to inaudible levels. The developer is aware that overflights can occur from aircraft utilizing Kona International Airport at Keāhole.

Mitigative Measures – The developer will submit a Federal Aviation Administration (FAA) Form 7460-1, Notice of Proposed Construction or Alteration regarding any probable impacts to the airspace in the vicinity of KOA airport from the development.

6.2.13 Visual Resources

Probable Impacts

In planning the residential areas of the project and the golf course, consideration of the natural slopes and features in the topography have been respected. The development of a golf course will add standard and xeriscape landscaping to an otherwise dry area, enhancing the visual impacts of the area, increasing the desirability and adding value to the residential component.

Mitigative Measures – View planes are preserved throughout. Clustering of dwelling units in sections of the project will preserve the open space character. The philosophy of the development is to "build to the land," avoiding major cuts and fills, designed to facilitate pedestrian access and provide a better quality of life for residents over the long-term.

All buildings for the University Village and Center will be one to three stories to create a low profile that is compatible with the expansive lava-strewn setting of the site. Buildings will be designed with sensitivity to the surroundings of the project site. The character and color of the surrounding lava would be used as a design element that contributes to a Hawaiian sense of place. The new visual character of the University Village within a cohesive design framework is expected to elevate its status as a center of higher education. A rendering projecting the impact of the proposed project upon the view plane is provided in *Figure 3-4*. In this regard, no negative impacts to visual resources are anticipated and no additional view mitigation is proposed beyond the careful project design consideration.

6.2.14 Recreational Resources

Probable Impacts

The residents of Palamanui will add to the total number of residents in the Kona area who will need access to recreational resources.

Mitigative Measures – The planned improvements at Palamanui will expand access to recreational resources by providing a golf course for private and public use. According to the THK survey, there exists a demand for golf as a mode of recreation for West Hawai'i residents and visitors.

The golf course will be a semi-private course. Hiluhilu is contemplating a membership program for Palamanui residents. Public play on a fee basis will be scheduled into normal golf course operations on a space available basis. The fees for public play will be set at a price level competitive with the other non-resort golf courses on the Island of Hawai'i. Hiluhilu will be seeking input from the University of Hawai'i to see if the golf course operations could be used to assist in furthering instructional programs. Hiluhilu anticipates that the golf course will participate in organized youth golf programs for students attending schools on the Island of Hawai'i and those attending the University of Hawai'i. The golf course also provides a major

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open space recreational amenity. Athletic fields will be part of the University of Hawai'i, West Hawai'i campus and therefore will not be accessible to the public at all times. However, like the golf course, the fields will have limited public use opportunities similar to the use of athletic fields at other UH campuses. Prior experiences indicate that there are large periods when the general public has access to UH facilities.

Small passive community parks (5 acres) and active park (5 acres) use will be developed as part of the project. Active parks will have playfields and courts supporting basketball, volleyball and tennis. The 5 acres of land for active park uses will be accessible for public use; that area can be dedicated to the County of Hawai'i if the County is agreeable to accepting dedication.

The University Village will include both indoor and outdoor recreational venues for residents. The village green and spaces along the pedestrian main street that forms the spine of the village comprise important portions of the open space acreage. Provisions will be made for paths and facilities supporting walking, jogging and bicycling within the project, which has a pedestrian-oriented village design. A recreation center with pools will be considered. The active recreation facility park will be located near the periphery of the University Village.

Educational tourism is considered a recreational resource. Market surveys have found that prospective residents to Palamanui would enjoy participating in educational programs as a form of recreation. Educational programs which provide cultural awareness of the unique aspects of the project area and Kona in general are of interest to the target market. Features such as the dry forest preserve, historic trails, archaeological sites, cave and lava tube ecosystems and buffer areas can provide this low impact educational and recreational opportunity. Many also provide open space recreational resources.

6.2.15 Population and Employment

Probable Impacts

The proposed action would provide a housing mix and, through the University of Hawai'i generate educational benefits that allow the residents of the West Hawai'i region to pursue careers in service and sales occupations, executive/managerial and professional occupations, and scientific enterprises related to astronomy and ocean engineering.

Trends in population and household growth are principal indicators of the potential demand for real estate development. Population growth in the market area has been moderate since 1980; recent data shows this trend continuing. The district of North Kona contributed 22.3% of the growth in Hawai'i County from 1980 to 2001. This trend of population growth in the Palamanui region indicates a demand for more residential development in the area which this project will provide.

Employment trends are prime indicators of the economic growth of an area. Increases in employment generate growth for most sectors of the local economy and dictate the rate at which it will expand. Since 1980, the Hawai'i County market area has experienced growth in almost all employment sectors. Fueling the Hawai'i County market area's employment growth is an increasingly diverse economic base. The market area will continue to experience steady growth especially with the addition of a University in the Palamanui region, which will serve as a catalyst for more economic growth.

This project will provide just over 1,000 permanent jobs by 2010, and approximately 1,850 jobs by 2014.

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Total construction spending at Palamanui is expected to be just over 304 million. This spending supports over 2,500 person years of construction employment over the life of the project. In addition to the creation of construction jobs, the State of Hawai'i will receive excise tax revenue on finished development and building materials, conveyance taxes, and income taxes on construction wages. These will amount to an additional \$13.9 million in State revenue over the life of the project. Based on DBEDT model of the impact of construction on the Hawai'i economy, the construction expenditures of \$304 million on the Palamanui will result in an increase in total output of \$375 million, and additional 3,700 persons years of employment, and an additional \$175 million in household income. See Fiscal Impact Analysis in *Appendix I* for details.

The proposed action will place residents on land that is currently undeveloped and will also result in a need for suitable retail and commercial facilities to support those residents and the students, faculty and support staff for the University of Hawai'i who will be located either on the project site or on the adjacent State land. Requiring such persons to go outside the project area will increase traffic on Queen Ka'ahumanu Highway or Māmalahoa Highway.

Mitigative Measures – The proposed action will provide suitable retail and commercial facilities to support the residents on this land and the University of Hawai'i students, faculty and supporting staff.

6.2.15.1 Economic and Fiscal Impact to County of Hawai'i and State of Hawai'i

The Palamanui project will have a project cost/investment of just over \$300 million over a ten-year period (2004 – 2014). Palamanui will create just over 1,000 permanent jobs by 2010 and around 1,850 jobs by 2014. Construction at Palamanui will support nearly 2,600 person years of employment or about 250 jobs per year over the life of the project.

The County of Hawai'i would receive annual property taxes of \$6.4 million at project buildout (2014) as well as other county revenue of \$3.4 million. This total revenue of \$9.8 million will be offset by county service costs of \$4.6 million. The net annual County surplus is \$2.7 million in 2010, increasing to \$5.3 million by 2014. The cumulative surplus from project opening to final buildout is \$25.5 million.

The State of Hawai'i would receive an estimated \$3.9 million per year in excise tax, income tax and other revenues from residents at buildout (2014). This will be supplemented by \$4.7 million in revenue from excise taxes on commercial operations, including retail sales, hotel taxes, and taxes on commercial rents.

Total State revenues at buildout will be approximately \$8.6 million, while service costs are estimated at \$5.2 million. This provides for a surplus of \$3.4 million in 2014, and a cumulative surplus of \$17.7 million over the buildout period. During construction, the State will receive additional excise tax, revenue on finished development and building materials, conveyance taxes, and income taxes on construction wages and businesses. These will amount to \$13.9 million over the buildout period.

Including indirect impacts of construction expenditures recirculating in the Hawai'i economy, construction of the Palamanui project will generate: \$375 million in economic output; 3,700 jobs and; \$175 million in household income.

Details of the Fiscal Impact Analysis are provided in *Appendix I* of this report.

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Mitigative Measures – The economic impacts are viewed as beneficial to the state, county and households. The developer is taking necessary steps to assure that the project can be developed in order to produce these economic benefits to the community.

6.2.16 Roadways and Traffic

Probable Impacts

The Traffic Impact Assessment Report (January 2004) details the probable impacts and mitigative measures relating to the proposed roadways plans and alternatives upon the region. The traffic report analyzed future traffic conditions in the area both with the project and without it for a 10 year period ending in 2014. The traffic report analyzed future traffic at both a new University Drive intersection with Queen Ka'ahumanu Highway and an intersection at the bottom of the project site with Queen Ka'ahumanu Highway. The traffic report included traffic projections for Queen Ka'ahumanu Highway and intersections from the project site to the Palani Road intersection in Kailua-Kona. The traffic report also included traffic projections for Māmalahoa Highway at its Mākālei Estates and Ka'iminani Street intersections. (Appendix E) The widening of Queen Ka'ahumanu Highway from a two-lane highway to a four-lane highway from Keāhole Airport Road to Kealakehe Parkway, which was recommended as a Base Year 2011 mitigation measure, will be required in Phase I (Year 2008) to alleviate overcapacity conditions on the Queen Ka'ahumanu Highway southbound approach at its intersection with Keāhole Airport Road and Ka'iminani Drive. However, operating conditions upon completion of Phase III (Year 2014) the north-south through traffic at the Māmalahoa Highway/Ka'iminani Drive intersection and the Queen Ka'ahumanu Highway/Palani Road intersection will continue to experience overcapacity conditions, while the other study intersections will experience near capacity conditions. Alternative north-south routes will ultimately be required to improve conditions in the areas north of Kailua-Kona. This improvement will be dependent on the resolution of right-of-way issues with the private landowners in the proposed area. An overall summary of the project's traffic generation, the 2 new alternate intersections with Queen Ka'ahumanu Highway and the traffic volumes expressed in level of service at the intersections is included in 6.1.16 of this report.

Trip generation forecasts are detailed in the Traffic Report. (Appendix E)

The probable impacts for the Northern Project Access Road are listed below:

- The Palani Road eastbound left-turn traffic at its intersection with Queen Ka'ahumanu Highway will require two left-turn lanes by Year 2008 with the Project to accommodate the future left-turn traffic demand;
- The projected traffic volumes at the Queen Ka'ahumanu Highway/Northern Project Access Road will most likely warrant installation of a traffic signal system by Year 2008;
- With the Queen Ka'ahumanu Highway widening from Keāhole Airport Road to Kealakehe Parkway from a two-lane highway to a four-lane divided highway in Phase I (Year 2008), it is suggested that the widening extend to the Northern Project Access Road. Completion of the Queen Ka'ahumanu Highway widening from Kealakehe Parkway to Keāhole Airport Road is anticipated for 2011.;
- The Queen Ka'ahumanu Highway northbound approach will require two (2) through lanes and an exclusive right-turn lane by Year 2008;
- The Queen Ka'ahumanu Highway southbound approach will require two (2) through lanes and an exclusive left-turn lane by Year 2008;

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- The Northern Project Access Road westbound approach will require an exclusive right-turn lane and an exclusive left-turn lane by Year 2008;
- The Northern Project Access Road westbound approach will require an exclusive right-turn lane and two exclusive left-turn lanes by Year 2014.

The probable impacts with the Airport Access Road alternative are listed below:

- If the Airport Access Road were to be pursued, land acquisition issues will need to be resolved to construct the portion of the Airport Access Road;

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TRAFFIC LEVEL OF SERVICE (LOS) SUMMARY

WITH AIRPORT ACCESS ROAD

	2003		BASE YEAR 2008				BASE YEAR 2011				BASE YEAR 2014			
	LOS		LOS Without Project		LOS With Project		LOS Without Project		LOS With Project		LOS Without Project		LOS With Project	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Makalei Access Road / Māmalahoa Highway	A	A	B	B	B	B	B	B	B	B	B	B	B	B
Kaiminani Drive / Māmalahoa Highway	-	-	C	B	C	B	C	B	D	B	D	B	E	B
Palani Road / Queen Ka'ahumanu Highway	D	E	D	D	D	E	D	D	D	B	D	E	E	E
Kaiminani Drive / Queen Ka'ahumanu Hwy.	B	B	C	B	C	B	B	B	C	B	C	C	C	C
Keahole Airport Road / Queen Ka'ahumanu Highway	B	B	B	C	C	C	B	B	D	B	D	D	D	D
Northern Project Access Road / Queen Ka'ahumanu Highway	-	-	-	-	B	D	-	-	B	-	B	-	-	-

Source: Austin Teasdale & Associates, Inc. January 27, 2004

Table 6-2
Traffic Level of Service (LOS) Summary

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- The Queen Ka'ahumanu/Keāhole Airport Road intersection will require signal phasing modification (four-phase to eight-phase) to accommodate the additional fourth leg at the Queen Ka'ahumanu/Keāhole Airport Road/Airport Access Road intersection;
- The Queen Ka'ahumanu Highway northbound approach will require an exclusive left-turn lane, two (2) through lanes, and an exclusive right-turn lane by Year 2008;
- The Queen Ka'ahumanu Highway southbound approach will require an exclusive left-turn lane, two (2) through lanes, and one (1) exclusive right-turn lane by Year 2008;
- The Keāhole Airport Road eastbound approach will require a single through lane, an exclusive left-turn lane and an exclusive right-turn lane connecting to a southbound acceleration lane forming a "free" right-turn lane by Year 2008;
- The Airport Access Road westbound approach will require a single through lane, an exclusive left-turn lane and an exclusive right-turn lane connecting to a northbound acceleration lane forming a "free" right-turn lane by Year 2008;
- The Airport Access Road westbound approach will require one (1) through lane, a double left-turn lane, and an exclusive right-turn lane connecting to a northbound acceleration lane forming a "free" right-turn lane by Year 2011.

Mauka-makai roadway: County plans encourage the development of mauka-makai roadways to carry area traffic and provide alternative routes between Māmālahoa Highway and Queen Ka'ahumanu Highway. The street grades in the upper slopes make the engineering of these routes a challenge. Hiluhilu Development will continue to work with the County Department of Public Works and the State DOT to address these concerns. Some roadway reserves or options will be included in the overall site planning and project development.

Future conditions without the Project: Widen Queen Ka'ahumanu Highway to four (4) lanes between Henry Street and Keāhole Airport Road to relieve the projected traffic demand at the study intersections without the project. Near capacity conditions are exhibited today and are projected for future conditions without the Project. Monitor vehicular traffic volumes at the Māmālahoa Highway/Ka'iminani Drive intersection, and install a traffic signal system when warranted.

Future conditions with the Project: Construct two (2) exclusive left-turn lanes on the Palani Road eastbound approach at its intersection with Queen Ka'ahumanu Highway by Year 2008. Widen Queen Ka'ahumanu Highway to four (4) lanes between the Northern Project Access Road and Kealakehe Parkway by Year 2008. Completion of the Queen Ka'ahumanu Highway widening from Kealakehe Parkway to Keāhole Airport Road is anticipated for 2011.

Mitigative Measures- An overall summary of the project's traffic generation, the 2 new alternate intersections with Queen Ka'ahumanu Highway and the traffic volumes expressed in level of service at the intersections is included in 6.1.16 of this report. The following measures are under consideration as mitigative options. The design of the University Village and provisions for pedestrian and bicycle access in the project will encourage residents to use bicycles or walk instead of using motor vehicles within Palamanui. Construct two (2) exclusive left-turn lanes on the Palani Road eastbound approach at its intersection with Queen Ka'ahumanu Highway by Year 2008. Widen Queen Ka'ahumanu Highway to four (4) lanes between the Northern Project Access Road and Kealakehe Parkway by Year 2008. Completion of the Queen Ka'ahumanu Highway widening from Kealakehe Parkway to Keāhole Airport Road is anticipated for 2011. Hiluhilu Development will contribute its fair share of any regional

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improvements as needed and relevant to the Project. Intersection improvements and improvements internal to the Project site that address traffic congestion will be constructed by Hiluhilu Development.

The following are mitigative measures for the Queen Ka'ahumanu Highway/Northern Project Access Road intersection alternative:

- Install a traffic signal system at the Queen Ka'ahumanu Highway/Northern Project Access Road intersection by Year 2008;
- Provide an exclusive left-turn lane for the Queen Ka'ahumanu Highway southbound approach by the first project occupancy;
- Provide a right-turn deceleration lane for the Queen Ka'ahumanu Highway northbound approach by the first Project occupancy;
- Provide an exclusive right-turn lane and a separate left-turn lane for the Northern Project Access Road by the first Project occupancy;
- Provide an exclusive right-turn lane and two exclusive left-turn lanes for the Northern Project Access Road by Year 2014.

The following are mitigative measures considered for the Airport Access Road Alternative:

- Modify the traffic signal system from a four phase operation to an eight phase operation at the Queen Ka'ahumanu Highway/Keāhole Airport Road for the Airport Access Road intersection by the first Project occupancy;
- Provide an exclusive left-turn lane for the Queen Ka'ahumanu Highway southbound approach by the first Project occupancy;
- Provide a right-turn deceleration lane for the Queen Ka'ahumanu Highway northbound approach by the first Project occupancy;
- Provide a through lane, an exclusive left-turn lane, and a right-turn lane connecting to a northbound acceleration lane forming a "free" right-turn lane for the Keāhole Airport Road eastbound approach by the first Project occupancy;
- Provide a through lane, an exclusive left-turn lane, and a right-turn lane connecting to a northbound acceleration lane forming a "free" right-turn lane for the Airport Access Road westbound approach by the first Project occupancy;
- Provide a through lane, a double left-turn lane, and a right-turn lane connecting to a northbound acceleration lane forming a "free" right-turn lane for the Airport Access Road westbound approach by Year 2011.

6.2.17 Solid Waste

Probable Impacts

Solid wastes generated on site will be collected and disposed at approved County solid waste disposal facilities. Recycling of solid wastes will be accommodated and implemented to the extent practicable. Green wastes generated by golf course and landscape maintenance will be composted with biosolids at the wastewater treatment plant. Solid waste systems will be designed to comply with the applicable DOH and County requirements. Solid waste from multifamily, commercial and institutional uses will be handled by private waste hauling contractors.

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Palamanui is expected to reach full build out in 2014. After build out, solid waste generated during the operational life of the residential and commercial activities includes paper, plastic, yard waste, glass, metals, other organics and other solid wastes. Solid waste generated by operation activities from the residential units is estimated at 1,056 tons a year. Solid waste generated by operation activities from the commercial units is estimated at 753 tons a year.

Pu'u Anahulu Landfill is the closest solid waste disposal facility to the proposed project. According to the Draft EIS for the East Hawai'i Regional Sort Station, September 2003, "At the end of 2002 the Pu'u Anahulu Landfill had slightly more than 12 million cubic yards of permitted air space. Assuming the in-place density averages 1,100 pounds per cubic yard, and cover materials make up 20% of the volume, the remaining capacity of the Pu'u Anahulu Landfill is 5.28 million tons." Approximately 1,809 tons of solid waste is estimated to be generated a year from the operation of the residential and commercial components of the proposed project. Using recycling and LEED sustainable design efforts, we estimate a 40% reduction in the amount of solid waste generated a year for a sum of 1,086 tons of solid waste. The proposed project will contribute less than .001% of total capacity of solid waste to the landfill a year. In effect, this project will have a very small impact on the life of the landfill. Solid Waste calculations are provided in *Appendix R*.

Mitigative Measures - Using recycling and LEED sustainable design efforts, we estimate a 40% reduction in the amount of solid waste generated. LEED (Leadership in Energy and Environmental Design) is a building rating system developed and managed by the U.S. Green Building Control which evaluates environmental performance from a whole building perspective over a building's recycle, providing a definitive standard for what constitutes a "green" building. LEED technologies and strategies to minimize the waste generated by construction and building occupants that is hauled to and disposed of in landfills includes providing easily accessible areas that serves the entire building that is dedicated to the separation, collection and storage of materials for recycling including at a minimum, paper, glass, plastics, and metals. The provision and use of the collection bins should be able to accommodate a 75% diversion rate when easily accessible to custodial staff and recycling collection workers. In addition, LEED recommends recycling and or salvaging at least 50% (by weight) of construction and land clearing waste.

A solid waste management plan will be developed which will identify efforts to minimize waste generated at Palamanui during construction and operation. At minimum the plan will include the following:

- Prevention of waste is called source reduction. During operation, minimization of waste generation, such as limiting the number of non-reusable products will be implemented.
- Efforts to re-use materials will be a component of the solid waste plan. The primary re-use taking place in the operational phase will be composting / re-use of green waste.
- Recycling will be an important part of both the construction and operational phase of the development. Recyclable materials will be separated out from non-recyclable materials, hauled from the site to the appropriate company, and eventually processed to make new products. Hiluhilu Development will also look into buying recycled products as both building materials and for use for Palamanui.

Hiluhilu Development intends to reduce the impact Palamanui may have on the County landfill by promoting a recycling program among commercial retailers. Tenants of the commercial

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center will be encouraged to utilize separate containers for cardboard disposal and other recyclable waste. This will reduce the commercial element's potential contribution to the landfill by between 15 to 40%. Additionally, the senior housing and multi-family development will be encouraged to develop its own recycling program providing dedicated waste separation receptacles for residents. Space for recycling operation will be provided in the development.

A successfully implemented recycling program will significantly reduce potential impacts on the County landfill. Hiluhilu Development will encourage recycling amongst commercial tenants, work to educate tenants on the benefit of recycling, and will provide separate waste receptacles for recyclable products. Separate waste receptacles will be provided for the residential development. Grounds maintenance crew will separate out green waste for appropriate disposal to one of the composting companies on Hawai'i. Chipping and composting will be utilized to the extent practicable; especially during the operational phase. Yard and landscaping maintenance may use *compost and chipped material* for mulching and soil conditioning. These activities will reduce the amount of green waste that needs to be transported off-site.

6.2.18 Utilities/Power/Infrastructure

Probable Impacts

The project site receives no electrical power and no communications services because its undeveloped state requires neither service. HELCO currently has an overhead 69 kV transmission line running through the utility easement. The existing electrical transmission line runs parallel to the Queen Ka'ahumanu Highway across the subject property. This line is a portion of the line connecting HELCO's Po'opo'omino and Keāhole switching stations.

In order to serve the entire project, a 150-foot by 150-foot substation lot located adjacent to the existing 69,000-volt transmission line easement must be dedicated to HELCO in fee simple. This lot is required to install a new electrical substation to convert the voltage from 69,000 volts to 12,000 volts to serve the project loads. Based on the 725 acres available for the residential and commercial development, HELCO will require a new substation to serve the project's anticipated loads. The developer's electrical consultant is required to submit a load schedule to HELCO before the final electrical requirements may be determined. HELCO may be able to serve the initial phases of the development from the Mākālei Estates underground distribution system just mauka of the project site, provided that HELCO's Hu'ehu'e substation capacity is upgraded from 7.5 MVA to 10.0 MVA and the proper easements are obtained.

HELCO's total system generating capacity is 233,700 kW and the system peak load was 177,900 kW, which occurred on December 30, 2002. The current generation reserve margin of 31.4% is adequate to serve the proposed project. An additional 40,000 kW generating capacity is planned to be installed at Keāhole Power Plant in the near future.

Mitigative Measures – Since the project site is currently undeveloped, utilities will need to be brought on site. This project will use green/climate appropriate architecture incorporating energy efficient technology and design, and appropriate vegetation and landscaping to moderate climatic effects. Buildings will consider LEED (Leadership in Environmental Design) or similar criteria in its design. Working with the County, it hopes to participate in finding and encouraging energy efficient methods for transporting employees to their place of work. It will

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also work with HELCO to consider solar and co-generation opportunities in the development. All power lines will be placed underground.

6.2.18.1 Water Supply

Probable Impacts

The development of Palamanui will require improvements to the County Department of Water Supply (DWS) system for the area, including completion of Kau Well 2, outfitting it with a 700 GPM submersible pump and providing necessary appurtenances; new transmission lines, particularly between Well No. 2 and the DWS Puukala Tank; storage tanks; a water system on the property built to DWS's standards and related improvements.

Mitigative Measures- Hiluhilu, together with the County Department of Water Supply and other major landowners in the area will participate in the improvements to the County Department of Water Supply infrastructure to allow potable water to be supplied to the project. The proposed water main connection between the Mākālei Estates and the existing DWS reservoir mauka of the Keāhole access road and Queen Ka'ahumanu Highway intersection will be a part of those improvements and will improve the distribution capabilities of the DWS system. Approval will be sought from DWS when Hiluhilu's own water service for this development. A coordinating effort between Hiluhilu and DWS and DLNR aims to improve the water distribution system for the area.

6.2.18.2 Wastewater Disposal

Probable Impacts

The on-site collection, treatment, and disposal of wastewater will not impact any existing wastewater systems. The long-term impact of the proposed on-site wastewater collection, treatment, and disposal systems would be to provide a substantial amount of the irrigation water required for maintenance of the golf course. The occasional disposal of effluent via injection wells or infiltration bed would not result in significant impacts to the groundwater or nearby coastal waters.

Mitigative Measures- Wastewater from Palamanui and from the adjacent University West Hawai'i Campus improvements would be processed by a private wastewater treatment plant which will be built as part of the project. The proposed treatment level will produce an effluent suitable for golf course and landscape irrigation, thus conserving the available water resources. Effluent that is discharged to the ground through injection wells due to inclement weather or other factors would be of high quality and would not detrimentally affect the aquifer or regional coastal waters.

Wastewater plans will conform to applicable provision of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater systems" and to the Department's Guidelines for the Treatment and Use of Recycled Water, May 15, 2002. Pre-final plans will be submitted to the Department of Health for review and conformance. Hiluhilu Development will develop a water quality monitoring program and install at least one groundwater monitoring well.

Non-potable Irrigation Water – Based on the experience of the Hualālai Golf course, it is estimated that about 1 mgd of irrigation water will be required for the golf course during grow in. If the soil is adequately prepared, the golf course should not require more than 0.8 mgd once the grass

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is established, assuming that about 100 acres are under irrigation. The irrigation water will be provided by a system with two supply sources. The primary supply will be "R-1" recycled water produced by the on-site wastewater treatment plant in compliance with Department of Health requirements for golf course irrigation. The secondary source will be on-site non-potable brackish wells that will be located at the mauka end of the project site. The golf course irrigation system will be designed to use all recycled water to the extent feasible. However, even at full buildout, the recycled water may not completely satisfy the irrigation demand of the golf course. Because the golf course will be constructed in Phase 1 of the project when wastewater flows are relatively low, non-potable wells will initially be relied upon for the majority of golf course irrigation. As project development progresses and wastewater flows increase, recycled water will provide a greater proportion of the golf course irrigation requirement. Approximately 0.3, 0.6, and 0.8 mgd of recycled R-1 water for golf course irrigation will be generated respectively by Phases 1, 2, and 3 of Palamanui. See *Appendix A* for more details regarding wastewater flow projections."

6.2.18.3 Housing

Probable Impacts

The long-term impacts to housing are positive. Overall, the project will provide 845 new residential units and a 120-room University Inn. The proposed project triggers Hawai'i County Affordable Housing policy which requires a 10 percent contribution of total units to be affordable. Hiluhilu Development will provide affordable housing units within the project site. See mitigative measures and Appendix N for further details.

Mitigative Measures- Recognizing the need and requirement for affordable housing, Palamanui will include 100 units of housing within Palamanui to meet the anticipated 10% affordable housing policy of the County of Hawai'i. It is planned for 50 of these units will be for rental and 50 will be for sale. Most of these units will be built in or near the University Village.

Affordable housing requirements will be met with agreements established with the County and State housing agencies. The developer proposes to provide 100 affordable housing units. The County of Hawai'i Affordable Housing Policy (1998, Ord. No. 98-1, Sec. 2) Article 1, Section 11-4 requires 10 percent of total units be affordable. While the actual number of units is 845 and the actual requirement is 85 units, Hiluhilu Development has decided to round the numbers and use 1,000 as the base number of units. Therefore, based on 1,000 units, ten percent represents 100 units. Fifty (50) affordable units will be available for purchase. Fifty (50) affordable units will be available for rent. Affordability will be based on Federal, State and County standards and guidelines. See Appendix N for affordable housing policy guidelines.

The County of Hawai'i affordable housing code offers alternatives to the provision of on-site affordable housing units. According to Section 11-4 of the code, the affordable housing requirement may be satisfied through the use of the following alternatives:

- 1) payment of in-lieu fees
- 2) provision of affordable housing units on property other than the project site
- 3) provision of developable land
- 4) provision of infrastructure / services
- 5) other means approved by the County housing agency.

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Hiluhilu Development, however, will not be exercising these alternative options. Rather, as stated, Hiluhilu Development will provide 100 affordable housing units within the Palamanui project site.

The THK market study confirms the strong need and demand for housing units in North Kona. The Palamanui project will add to the supply of housing unit types, including market and specifically affordable housing units. There may be a number of people working in the proposed Palamanui University Village who will meet the guideline income requirements and find Palamanui a suitable place to work and reside. Thus the provision of affordable housing units are planned to support the general community need for affordable housing as well as the projected need generated by the proposed Palamanui project.

The anticipated distribution of planned 100 affordable housing units for sale and for rent, will be one third in the 80 to 100 percent applicable median income, one third in the 100 to 120 percent applicable median income and one third in the 120 to 140 percent of applicable median income. Hiluhilu Development will provide 100 total affordable housing units.

Percent of Median Income	For Sale Affordable Housing Units to be provided on site	For Rent Affordable Housing Units to be provided on site
80% - 100%	1/3 of 50 units = 17 units	1/3 of 50 units = 17 units
100% - 120%	1/3 of 50 units = 17 units	1/3 of 50 units = 17 units
120% - 140%	1/3 of 50 units = 17 units	1/3 of 50 units = 17 units
TOTAL	50 for sale affordable housing units	50 for rent affordable housing units

Median income for a family of four in the County of Hawai'i in the year 2004 is approximately \$51,000. Affordable housing is being calculated based on the assumption of a family of four. The County of Hawai'i uses the affordable housing definition as a lot or dwelling unit which is affordable to qualified households earning no more than one hundred forty percent (140%) of the median income for family of four in the County of Hawai'i, as published annually by the Office of Housing and Community Development. Appendix N includes income guideline tables used by the County of Hawai'i Office of Housing and Community Development.

According to the County of Hawai'i Affordable Sales Guidelines, a family of 4 earning 80% of the median income in the County of Hawai'i can afford a \$186,200 housing unit. This is based on a 30 year mortgage loan at 5.760% Hula Mae interest rate with a total housing expense of 28% and 5% down payment. The family of 4 earning the median income of \$51,000 in the County of Hawai'i can afford a housing unit of \$214,000. Similarly, the family of 4 earning 120% of the median income can afford a housing unit costing \$239,860. And the family of 4 earning 140% of the median income can afford to purchase a housing unit at the cost of \$239,860. Hula Mae new construction sales price limit as of 2002 for the County of Hawai'i is \$239,860.

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Affordable Sales Guidelines

Percentage of Median	\$ Income	Affordable For Sale Housing Price
80%	\$44,300	\$186,200
100%	\$51,000	\$214,400
120%	\$61,200	\$239,860
140%	\$71,400	\$239,860

Family of four. 2004 Median Income of \$51,000. 30 year mortgage. 5.76% Hula Mae interest rate. 5% down payment. 28% housing expense. Housing Price cap at \$239,860.

The County of Hawai'i has established affordable rent guidelines which are based on 30% of income including utilities. The County affordable rent guideline tables are based on 2004 Hawaii County median income of \$51,000. A family earning 80% of the median income for the County of Hawai'i can afford a 2 bedroom housing unit at a cost of \$991 a month. A family earning 100% of the median income for the County of Hawai'i can afford a 2 bedroom housing unit at a cost of \$1134 a month. A family earning 120% of the median income for the County of Hawai'i can afford a 2 bedroom housing unit at a cost of \$1360 a month. A family earning 140% of the median income for the County of Hawai'i can afford a 2 bedroom housing unit at a cost of \$1587 a month. Monthly rent levels would include the cost of the following utilities: water, sanitary sewage service, electricity and gas where applicable.

Affordable Rent Guidelines

Median Income \$51,000	Monthly rent levels for a 2 bedroom unit
80% of median	\$991
100% of median	\$1,134
120% of median	\$1,360
140% of median	\$1,587

As required by code, an implementation plan to satisfy affordable housing requirements will be submitted for approval prior to the issuance of any building permit for the market project. The affordable housing code states that the County housing agency shall determine the implementation period based upon the specific circumstances of each case. Hiluhilu Development will work with the County housing agency in developing an appropriate implementation schedule for this project. In particular, Hiluhilu Development will need to discuss the timing of the provision of units.

Should the need arise to entertain the option of payment of in-lieu fees instead of the provision of affordable housing units on site, Hiluhilu Development will need to discuss the amount of subsidy required with Hawai'i County housing agency. See Appendix N for County Housing Affordability guidelines and tables.

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6.2.18.4 Education

Probable Impacts

The residents of Palamanui will include families with school-aged children which will generate a need for new school facilities.

Mitigative Measures- The Department of Education has adopted a new formula for determining school impact based on the number and type of housing units being constructed. Single-family homes generate a greater need for public schools than multi-family units and therefore generate a higher impact fee. Palamanui will pay its fair share of the Department of Education School Impact fee as required. Hiluhilu will enter into discussions with the DOE on this issue and reach a negotiated agreement on this issue.

Hiluhilu Development will contribute to the development, funding and / or construction of school facilities, on a fair share basis, as determined by and to the satisfaction of the Department of Education. Terms of the contribution will be agreed upon in writing by Hiluhilu Development and the Department of Education prior to obtaining county subdivision and building permits.

Fair share contributions are unresolved at this time. Preliminary discussions with State Department of Education regarding current fair share policies and development towards an agreement are ongoing. Hiluhilu Development is currently reviewing the State Department of Education Fair Share program.

Hiluhilu Development will work with the DOE to determine if the fair-share contribution should be paid in land, in fees, or a combination of both. At minimum, Hiluhilu Development can expect to contribute a fair share towards the construction cost of future educational facilities.

If the DOE determines that land dedication is required, Hiluhilu Development would provide the land within the Palamanui project site. Such a requirement, however, would involve additional planning, site design analysis and negotiations with the DOE to determine facility needs and siting requirements. If the DOE determines that a fee in-lieu is required, clarification will be needed to clarify fair share calculations.

On July 11, 2003, the Department of Education (DOE) implemented a revised method for calculating the fair-share contribution it receives from the developers of new dwelling units in Hawaii. Certain aspects of the program remain the same:

- The contribution is only required for housing developments of 50 or more units;
- It doesn't apply to non-residential developments like shopping centers, hotels, or offices; and
- It doesn't apply to senior citizen housing.

The Palamanui project involves development of more than 50 housing units and therefore is subject to contributing a fair share in costs of providing needed public educational facilities to the state of Hawai'i.

The Palamanui units subject to the DOE fair share calculations involve the planned 590 single family housing units, 100 multi family apartment housing units and 75 multi family student housing units. Non-residential development components of Palamanui like the research and development offices, commercial center, parks, preservation areas, and golf amenities are not

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subject to the DOE fair share calculations. The senior housing component planned for Palamanui is also exempt from the DOE fair share policy.

For projects that comprise 50 acres or more, the DOE determines whether to require a

- dedication of land
- payment of standard fee in-lieu
- or a combination of both.

Hiluhilu Development will work with the DOE to determine if the fair-share contribution should be paid in land, in fees, or a combination of both. At minimum, Hiluhilu Development can expect to contribute some fair share towards the construction cost of future educational facilities.

Construction Cost Component: Hiluhilu Development can expect to contribute over 2 million dollars to support construction costs for future educational facilities in Kona. The construction cost component for the period of July 2003 to June 2005 is estimated at \$2,193,905. After July 1, 2005, construction cost component is estimated at \$3,656,370.

The DOE fee per single family unit in Kona is set at \$3,332 and the fee for a multi family unit in Kona is set at \$1,303 until June 2005. As of July 2005, the fee charged per single family unit in Kona will increase to \$5,553 and the fee charged per multi family unit in Kona will be \$2,172. Again, Palamanui proposes to develop 590 single family units and 175 multi family units.

Fair-Share Worksheet	Location of New Dwelling Units	Fee per Single-Family Unit	Fee per Multi-Family Unit	Benefit District
July '03 to June '05	Kona	\$3,332	\$1,303	Hawai'i
July '05	Kona	\$5,553	\$2,172	Hawai'i

Land dedication: If the DOE determines that land dedication is required, Hiluhilu Development can expect to dedicate 5.9 acres of land.

The acreage to be dedicated by the developer is calculated using the following formula:

$(0.00899 \text{ acres} \times \text{proposed number of single-family dwellings}) + (0.00356 \text{ acres} \times \text{proposed number of multi-family dwellings}) = \text{total school acres required}$. Where 0.00899 is the number of school acres required to cover the number of students generated by one new single-family, townhouse, or duplex dwelling unit and 0.00356 is the number of school acres required to cover the number of students in one new multi-family dwelling unit. Where 590 single family dwelling units and 175 multi family dwelling units are planned at Palamanui.

Hiluhilu Development will provide the land within the Palamanui project site. Such a requirement would involve further negotiation with the DOE to determine facility needs and revisions to the site plan to accommodate the school facility.

Fee in-lieu: If DOE determines that a fee in-lieu is required, the fee amount will involve the actual appraised value of the project's land.

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The fee in-lieu calculation involves the (acres per single family unit of 0.00899 x the 590 single family units proposed x the average cost per acre of the subdivision per the developers' appraisal) + the (acres per multi family unit of 0.00356 x the 175 multi family units proposed x the average cost per acre of the subdivision per the developers' appraisal). The last variable is unclear as to how it is to be determined.

The policy guidelines suggest that the actual appraised value of the project's land will be used. The 2004 assessed market land value of the property according to the Hawai'i County Real Property Tax Office is \$1,887,000 for the parcel. This figure reflects the existing land use designations of agriculture and conservation. If we use this figure and divide it over the total 725 acres of the parcel, the average cost per acre of the subdivision is \$2,603. Hiluhilu Development can expect to pay a Fee In Lieu in the amount of \$15,427.

We do not know what the market value of the parcel will be after the lands are reclassified to an Urban designation.

The DOE worksheet involves the average cost per acre of the subdivision per the developers' appraisal. If we define the "developer's cost per acre" to mean the cost of an acre of land ready for building with all services to the boundary etc, under this definition, Hiluhilu Development can expect to pay a Fee In-Lieu in the amount of \$761,939. This assumes \$93,200,000 cost to ready the residential components divided by 725 total acres for a sum of \$128,550 per acre.

To reiterate, Hiluhilu Development is prepared to enter into discussion with the Department of Education to determine a fair share contribution to support future public education facilities in Kona. Some of the variables in the DOE formula need further clarification.

Implementation Schedule: The DOE is phasing in the revisions of the fair share policy. For the two-year period starting from initial implementation (Phase I) the amount of the contribution covering school construction costs will be approximately 30% of the per pupil cost for school construction. Two years after implementation (Phase II), the school construction cost will increase to approximately 50% of the per pupil construction costs. There are no plans for further adjustments beyond the date for 50% implementation. These phases have been taken into account in the calculations for Hiluhilu's estimated fair share contributions.

Hiluhilu recognizes that a signed, written Educational Contribution Agreement can be finalized at any point prior to the deadline imposed by conditions of the State Land Use Commission or the counties.

6.2.18.5 Police and Fire

Probable Impacts

New development including Palamanui increases the need for life safety services. Wildfires are potentially serious hazards in arid environments.

Mitigative Measures – The sites for a new fire station or police substation can be made available to these departments if needed. A wildfire plan will be developed for Palamanui. This plan will consider both the risks to natural resources such as the dry land forest preserve and cave environments as well as residences and other urban development.

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6.2.18.6 Medical and Emergency Services

Probable Impacts

Medical emergencies and health care are important in modern life. This service becomes increasingly more necessary as the population ages.

Mitigative Measures – The project plan provides space for medical facilities and emergency services. All roads will be built to accommodate emergency vehicles. Clinics and Doctors' offices are planned for Palamanui along with medical research and other healthcare related establishments. The proximity of Kona International Airport at Keāhole is a positive feature in that certain complicated situations may require evacuation to Honolulu specialists and the location of the airport is fortuitous in such situations.

6.2.19 Agriculture

Probable Impacts

The project will result in the immediate loss of 450.3 acres of State and County designated agricultural land. The lands, previously used for ranching will no longer be available for such agricultural use.

Mitigative Measures – Reclassification of the project site to Urban classification would accordingly not remove any land suited for agriculture. The soil classification for the project site is Land Study Bureau E. The project site has no cultivatable land. Rainfall in the upper area of the site is marginal and very inadequate for agriculture in the middle and lower areas of the site. The portion of the project below the 1,000-foot elevation level is not covered by the Agricultural Lands of Importance in the State of Hawai'i (ALISH) study. Any remaining area at the mauka end of the project site which could fall within the ALISH classification would comprise only a very small area. The soil study conducted by Yusuf Tamimi concluded that given the marginal productivity of the land and the cost of grading, providing access and providing irrigation water, the project site was not suitable for commercial agriculture. See *Appendix H* for soils study.

6.2.20 Conservation Lands

Probable Impacts

The proposed project involves development of lands that currently lie in the State Conservation District. Hiluhilu Development has submitted a petition to the State Land Use Commission for a reclassification of these conservation lands to urban use. The reclassification will result in the loss of 274.9 acres of State designated conservation land to urban use. Conservation values found in these lands may be impacted. Values potentially affected include loss of open space, impact to archaeological sites and the potential "greening" of the lava landscapes. The 274.9 acres are located in the lower portion of the site and fronts Queen Ka'ahumanu Highway. A wastewater treatment plant, some residential development, and portions of the golf course make up most of the impact into the conservation lands.

Mitigative Measures – Hiluhilu Development recognizes that inclusion of land within the State Conservation District provides protection of resources and open space values. While the project requests urban designation, efforts have been made to preserve open space values and protect significant archaeological, botanical and cultural resources throughout the property, including the portion within the State Conservation District.

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- A 1000 foot buffer mauka from Queen Ka'ahumanu Highway is maintained to preserve the open space visual corridor along the portion of the highway, as originally intended when these lands were designated conservation.
- Significant archaeological sites and features are also being preserved within the conservation district portion of the project site. These significant archaeological sites and features will be protected under a treatment plan approved by the State Historic Preservation Division. The Integrated Natural Cultural Resource Management Plan will address the mitigation, management and stewardship of archaeological, cultural, natural and botanical resources throughout the project site.
- To the extent practicable, infrastructure will be placed to avoid adversely impacting archaeological sites or features or impairing open space and view values.
- The proposed wastewater treatment plant will be screened with landscaping and lava berms and setbacks from the Queen Ka'ahumanu Highway to reduce visual impact.
- The golf course will also preserve views and its design and maintenance will seek to minimize the "greening" effect of development and emphasize endemic and indigenous landscaping.

The preservation of the 65+ acre dry forest and various areas of archaeological concentrations and sensitive cave environments in the mauka agricultural lands will enhance the overall protection of conservation values on the Palamanui site. We feel our plan identifies the areas of greater conservation resource values and creates a proactive, protective, management plan for these resources which will be more effective than passive preservation of a conservation designation. This application focuses on protection of the resource rather than the conservation designation.

These mitigative measures will minimize the adverse impacts of urban development throughout the project site and will protect the significant resources, open space and visual corridors within the Conservation District.

6.2.21 Adjacent and Nearby Land Uses

Palamanui is situated in the ahupua'a of Kau. Currently, most of the land in the Kau ahupua'a is vacant. See *Figure 1-1* for ahupua'a boundaries.

Land uses of adjacent and nearby areas consist of residential to the east (Mākālei Estates), vacant land to the west north and south. Land uses to the southeast and northeast are primarily residential.

Specifically, properties surrounding the Palamanui project parcel include the following:

- To the east is Mākālei Estates. Mākālei is an agricultural 3-acre lot subdivision community developed by Hiluhilu Development. The community of Mākālei will experience through traffic to Māmalahoa Highway; new access to Queen Ka'ahumanu Highway; access to commercial and recreational activities; access to a diversity of new neighbors; access to the dry forest preserve.
- To the south is undeveloped state land designated as urban by the state and allocated for urban expansion by the county of Hawai'i. Portions of this property are targeted for development for university use which the proposed Palamanui project supports. See *Figure 5-2* for illustration of county land use plan allocation guide.

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- To the west is Queen Ka'ahumanu Highway. Beyond the highway is a corridor of Conservation land which provides an open space visual corridor for travelers along the highway. Beyond the highway lays the international airport of Kona.
- To the north of the Palamanui parcel is undeveloped state land designated as conservation and agriculture. The dry forest resources within the agriculture district part of the Palamanui project site is known to expand into the state owned property to the north.
- See *Figure 5-1* for existing land use classifications of neighboring parcels.

The adjacent UHCWH will be a magnet campus, which will attract other developments and land uses in this area. This growth is consistent with the County General Plan designation of the site within its urban expansion areas.

In the long-term, this project will add to the urbanization of North Kona. There are a number of development projects proposed within a 10 mile radius from the Palamanui site. Section 6.3.1.1 describes these developments and their cumulative impact on the region. *Figure 6-1* depicts the location of proposed development projects in the vicinity.

Land to the north of the project site along Queen Ka'ahumanu Highway is in the conservation district. The reclassification of the project site to urban effectively shifts the conservation district line to the northern boundary of the project site.

6.3 SUMMARY OF PROBABLE IMPACTS

6.3.1 Interrelationships and Cumulative Environmental Impacts

This project and those projects identified in 6.3.1.1 below are expected to have long-term cumulative impacts such as increased traffic and need for more potable water by the time the projects reach full development. The location of this project at the northern edge of the Keāhole to Kailua area and the proposed mixed uses will reduce some of the potential impacts. The cumulative impacts will create the need for additional improvements to regional infrastructure. However, development of these projects will be accompanied by appropriate mitigative measures to address impacts. The accompanying economic development will expand employment opportunities for Kona residents and will provide additional tax revenue to the State and County governments to fund needed public services. The Kona International Airport at Keāhole improvements and the development of the University of Hawai'i will provide substantial public benefits to the Kona community. The anticipated net cumulative impact is expected to be positive for the Kona community.

6.3.1.1 Projects in the Region

The following listing identifies projects and other developments that could have a cumulative impact in association with the Palamanui project at the time this report was prepared. (*Figure 6-1*) Most of these projects would add to regional growth along with the Palamanui project and would probably work synergistically to maintain the current growth in West Hawai'i and develop a growing critical mass of people and economic activity that will influence activity in the region for several years. Some will have direct impacts to Palamanui and vice versa. Most will have indirect impacts to the proposed action and become part of the ambient growth of the region.

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University of Hawai'i Center West Hawai'i: While the Palamanui project will be developing spaces for phase one of the UHCWH in the University Village on the Palamanui side of the property, for the current enrollment of 500 students, the University plans to expand its enrollment and its curriculum. The University projections call for completion of Phase 1 by 2006 for 750 students. The University plans to continue with its community college offerings, to expand its distance learning and continuing education programs as to expand its degree producing programs.

It is conceivable that the University could simultaneously obtain independent financing to build some facilities on its side of the property. This could occur through legislative appropriations or wealthy donations. Such actions would accelerate the full development of UHCWH. This would be beneficial to the entire region by increasing educational and employment opportunities.

Kona International Airport at Keāhole: The Airport is located on approximately 4,244 acres of land of which 322 acres are leased to the Natural Energy Laboratory of Hawai'i (NELH) and 421 acres to the Hawai'i Ocean Science and Technology (HOST) Park. The Airport Master Plan (January 2000) calls for runway expansions and ancillary support facilities to meet growing airport needs projected for the next 15 years. These needs relate to the increasing domestic and international traffic that is arriving or coming through the Kona International Airport at Keāhole. These projects include expansions of infrastructure, more public parking, postal facilities, warehouses and other facilities that accommodate the growing needs of airport expansion. Areas for various commercial and industrial uses supporting airport activities are planned in three phases to the year 2015 and beyond. These uses are concentrated on both sides of Keāhole Street, the main Airport access road. These improvements are scheduled in three phases: phase 1 (1998-2003), phase 2 (2004-2009) and phase 3 (2010-2015+). Total construction costs for the phases are projected in 1998 at \$46.62 million (phase 1), \$72.24 million (phase 2) and \$11.92 (phase 3).

DHHL Kalaoa/Airport Properties: DHHL has 483 acres in three separate sites mauka of Kona International Airport at Keāhole. The Hawai'i Island Plan calls for the following breakdown of uses: General Agriculture (230 acres), Commercial (10 acres), Community Use (7 acres), Industrial (100 acres) and Residential (136 acres). Preliminary plans call for 252 residential lots (adjacent to Kona Palisades and along Queen Ka'ahumanu Highway), 42 agriculture lots, and 174 industrial lots, and 17 commercial lots and one community lot across the Airport Access entrance. The DHHL has not focused on these lots because of lack of infrastructure and beneficiary comments that the site is too hot. However, this may change if other developments bring infrastructure to the site and site plans, landscaping and building designs make the place a cooler and more inviting location. *Figure 6-2* identifies DHHL land inventory in the area of Kalaoa.

DHHL Honokōhau (Kona Kai Ola): DHHL owns 200 acres of land adjacent to Honokōhau Boat Harbor and plans to develop the site as a commercial development focused around Harbor related uses and services. The project, called Kona Kai Ola, will be built by Kona Marina Development Group LLC and is envisioned as a project with a core of retail shops and theaters. A meeting with residents at Laiopua highlighted a need for a community center, a canoe club and open space. Construction will begin in 2005. The 65-year lease will generate a minimum of \$65 million over the next 10 years. The development mix may include a golf course as well as resort, retail and other commercial elements. A nonprofit corporation or foundation to support

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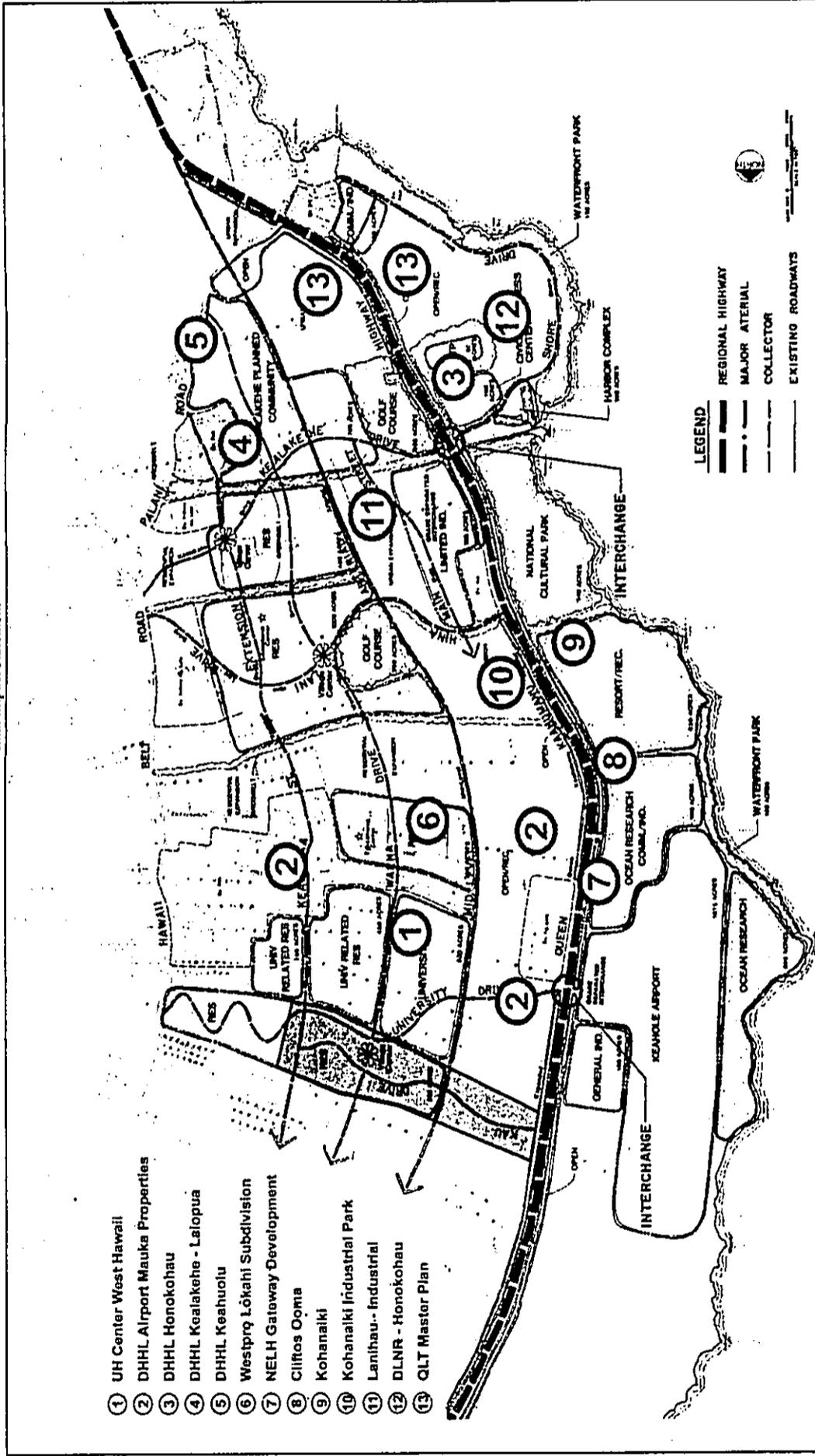
and promote community development, community healthcare, job training, and education and cultural programs and projects are aimed to be established by December 2006.

DHHL Kealakehe Laiopua Village 4: DHHL owns 60.40 acres on this site makai of the High School. The agency is proposing two hundred 7,500 square foot residential lots and a five-acre community use site for this project. Kealakehe is an expansion of an existing subdivision.

Keahuolu Subdivisions: DHHL owns 150 acres at this site makai of Palani Road. They are planning to build 376 residential units (141 acres), a 7-acre community use site and three commercial lots (1.60 acres).

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- ① UH Center West Hawaii
- ② DHHL Airport Mauka Properties
- ③ DHHL Honokohau
- ④ DHHL Kealaheke - Lalopua
- ⑤ DHHL Keahuolu
- ⑥ Westport Lōkahi Subdivision
- ⑦ NELH Gateway Development
- ⑧ Clifftos Ooia
- ⑨ Kohanaiki
- ⑩ Kohanaiki Industrial Park
- ⑪ Lanihau - Industrial
- ⑫ DLNR - Honokohau
- ⑬ QLT Master Plan

Figure 6-2
Projects in the Region

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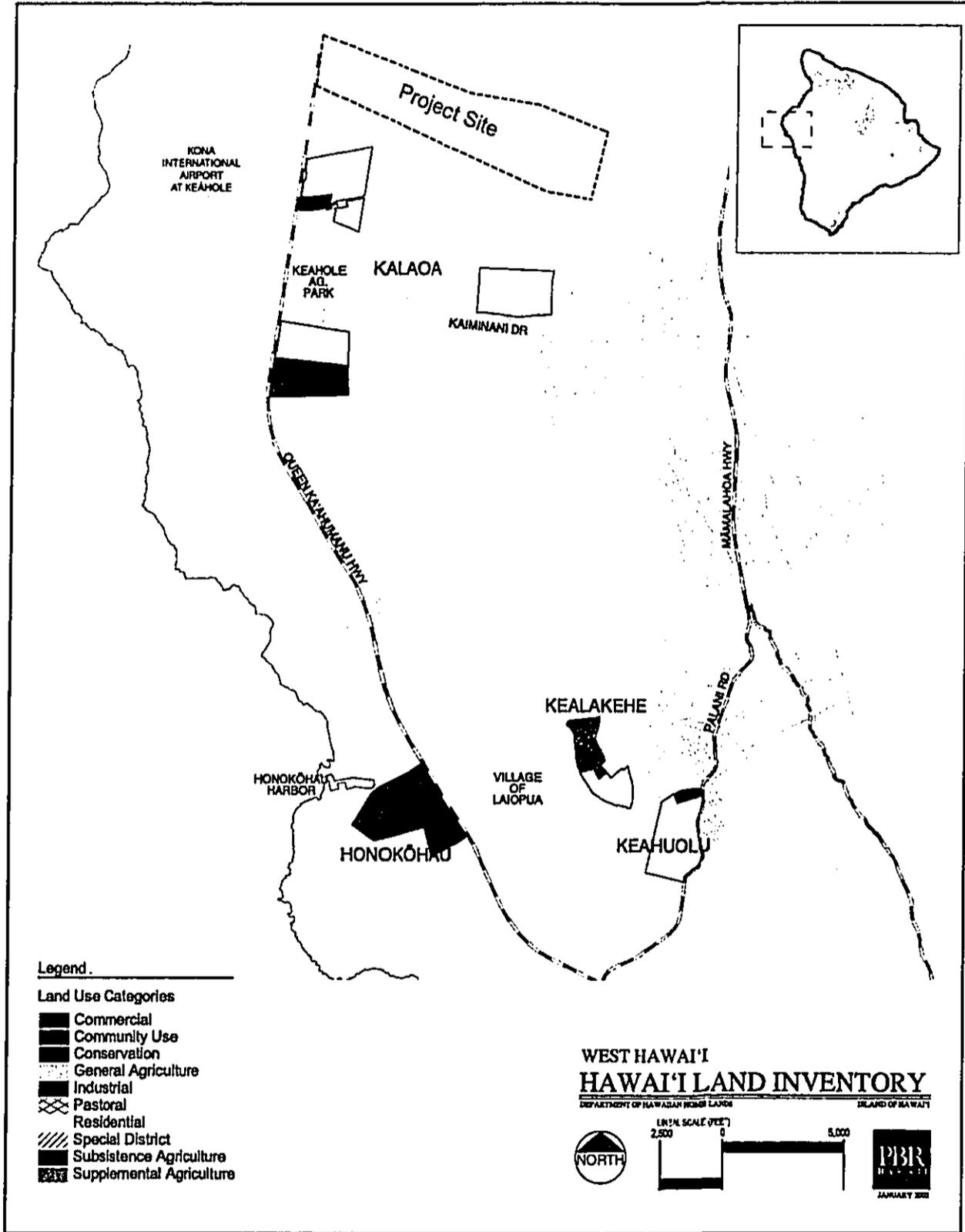


Figure 6-3
DHHL Inventory at Kalaoa

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Lōkahi Subdivision: Westpro Development, Inc. is proposing to develop the Lōkahi Subdivision, a 190-lot residential subdivision with a park and related amenities, on approximately 68.534 acres of land in North Kona, TMKs 7-3-10:47, 48 and 50. The project site is located east (mauka) of the Queen Ka'ahumanu Highway, in the land division of Kalaoa 5th, and south of the Kona Palisades Subdivision. The proposed project will be served by three access roads from Ka'iminani Drive, the principal mauka-makai access linking the Māmalahoa Highway and the Queen Ka'ahumanu Highway.

NELHA Gateway Distributed and Renewable Energy Center: The Natural Energy Laboratory of Hawai'i (NELHA) is developing a 6.5 acre gateway complex including educational facilities, commercial and light industrial uses. The Center will be located at the entrance to NELHA at Keāhole Point in Kailua-Kona. The Center will engage in distributed and renewable energy research, development, demonstration, education and outreach. Construction began on Phase 1 of the Center project in December 2003 and is scheduled for completion in June 2004. Phase 1 completed projects consist of the Outreach Demonstration Center comprising 5,000 square feet and a Modular Laboratory of 2,200 square feet for a total of 7,200 square feet. Twenty-one additional Modular Laboratories at 2,200 square feet each are planned for total Modular Laboratory space of 48,400 square feet. Phase 1 space provided upon buildout will thus be 53,400 square feet. Initial construction funding of \$3 million has been provided via a grant from the U. S. Department of Energy (US DOE). NELHA comprises 322 acres and the Hawai'i Ocean Science & Technology (HOST) Park, promoter of the Center and on whose land it will be built, comprises 548 acres for combined acreage of 870 acres. Partners include US DOE, NELHA, Hawai'i Department of Business, Economic Development and Tourism, Hawai'i Natural Institute, UH, New Mexico Tech., and the County of Hawai'i.

Clifto's Kona Coast: This is an 83-acre project in O'oma adjacent to the Kohanaiki site and existing Natural Energy Laboratory Site. It would add 400 residential/apartment units to meet the housing demand in north Kona. It also includes a 200+room hotel and 200,000 square feet of commercial space.

Kohanaiki: This project has received a Special Management Area permit for approximately 448 acres. Designated State "Urban" and "Intermediate Resort" on the County General Plan, the project is ready to commence. Zoning includes the following: Resort Hotel (V-1.25), Village Commercial (CV-10), Single and Multi-Family Residential (RS-10 & RM-3), Limited Industrial (ML-10) and Open Space (O). Plans call for 500 residential units, an 18-hole golf course, clubhouse and ancillary uses. A significant shoreline public park will be provided to the region. 128 acres will remain in open space. Residential lots will range from one-acre, one-half-acre and 12,000 square foot lots.

Kohanaiki Industrial Park Extension: Continued development of light industrial uses at this project will occur over the next ten years.

Lanihau: Lanihau is a 336-acre business park proposal currently before the County Planning Commission for rezoning. It is located mauka of Queen Ka'ahumanu Highway above Kaloko Honokōhau National Park and the existing industrial park. It is a project with mixed light industrial and commercial uses with retention and expansion of an existing quarry and quarry related facilities. It would add approximately 250 industrial lots to the region over the next ten years.

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DLNR Honokōhau Mixed Use Development: DLNR has circulated an RFP for 300 acres of a mixed-use project at a site adjacent to Honokōhau Boat Harbor. It will be planned in conjunction with the DHHL parcel mauka of the Harbor.

Queen Lili'uokalani Trust (QLT): The QLT owns 3,500 acres in the Keahuolu ahupua'a in the area adjacent to Kailua-Kona. The lands include both developed and undeveloped lands as well as lands that have land use entitlements and those that do not. Present developed areas include three shopping centers, a mature light industrial park and a residential low-rise condominium. Undeveloped but entitled lands include 100 acres of mixed use, light industrial and commercial zoned lands, 20 acres of land zoned general commercial and approximately 700 acres of land with contingent entitlements. The lands extend makai from the ocean up to the 3,600-foot elevation of Hualālai crossing Queen Ka'ahumanu Highway, Palani Road and Māmalahoa Highway. They are currently reviewing the master plan for their land uses. They will begin development of their undeveloped parcels after their master planning efforts are completed.

Supporting Infrastructure

Master Planned Developments are supported by various projects that provide the infrastructure and off-site improvements that contribute to regional growth. The following are some projects in the region that support the projects listed above.

Keāhole Generating Station and Airport Substation: Hawai'i Electric Light Company, Inc. (HELCO) is planning on implementing a number of environmental mitigation measures at the Keāhole Generating Station and Airport Substation, which is located in the near vicinity of the Palamanui project. Improvements include adding two heat recovery steam generators, a steam condensing system, and a nominal 16-MW steam turbine generator, including ancillary equipment. Improvements also involve new emissions and noise control measures. Anticipated future improvements may include replacement or addition of transformers and switchgear equipment to service the area community. Alternative fuel, such as naphtha is being considered for the future,

Keāhole Reservoir: Construction of the 1.0 mg Keāhole Reservoir was completed on February 1, 2000, and dedicated to the County of Hawai'i.

Hina Lani Drive Water Transmission Line and Reservoir: Construction for the Hina Lani Drive Water Transmission Line and Reservoir was completed in November 2001.

Lōkahi Subdivision Roadway: One of the three accesses proposed for the Lōkahi Subdivision is a new road through the adjacent State property situated west (makai) of the project site. The proposed roadway will intersect with Ka'iminani Drive approximately 200 feet west (makai) of the western most parcel within the Kona Palisades Subdivision. This north-south segment of the proposed roadway will eventually become part of the "New Main Street" included in the County's Keāhole to Keauhou Project Map that is dated August 2001. The "New Main Street" is intended to have a 120 foot wide right of way and Westpro is proposing to develop the eastern (mauka) half of the right-of-way with a 60-foot wide public road which will extend approximately 700 feet south from Ka'iminani Drive and make a 90 degree turn east (mauka) for another 280 feet before entering the proposed residential project site in TMK: 7-2-10:48. This roadway will be improved to County standards with a pavement width of 24 feet and paved swales of approximately 18 feet. The roadway has an estimated cost of \$350,000 and will take approximately three months to complete.

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Keopu Exploratory Well Project: General obligation bond funds were released for the design and construction of the Keopu Exploratory Well Project. Completion of construction was scheduled for February 2003.

North Kona Well Sites Planning and Land Acquisition Study: A planning study to identify land parcels to accommodate water wells, reservoirs, access roads, and a HELCO Substation is scheduled to be completed by August 2003.

Highway Improvement Projects: The Hawai'i Long Range Land Transportation Plan, May 1998, Final Report proposes four highway improvement projects in the vicinity to the project area. The most important projects in the plan are the phase one and two widenings of Queen Ka'ahumanu Highway.

6.3.2 Potential Secondary Effects

This section evaluates the potential for the new development to induce growth outside the project area. Examples of these types of effects include the stimulation of additional development in an area, or a higher density development, as a result of the construction of public facilities such as a new sewerage system.

New development tends to attract other development. Having said that, it is important to note that the Hiluhilu site forms the northern boundary of the designated urban expansion of the Kailua-Kona area for North Kona. This policy line will lessen the scope of this secondary impact. Another secondary impact is the promotion of the growth and development of the new UH Center West Hawai'i. By providing supporting infrastructure with sufficient capacity to accommodate the campus, Hiluhilu will encourage the growth of the UHCWH. This is a positive secondary impact.

6.3.3 Relationship Between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity

These relationships are described below in context of the following four specific areas of potential concern: (1) narrowing the range of beneficial uses of the environment; (2) long-term risks to health and safety; (3) foreclosure of future options; and (4) trade-offs among short-term and long-term gains and losses. The following discussion addresses each of these potential areas of concern.

- (1) Narrowing the range of beneficial uses of the environment: The planned improvements are considered to be beneficial uses of the environment. Infrastructure improvements will further broaden the range of beneficial uses of this environment.
- (2) Long-term risks to health and safety: The project is not expected to generate risks to health and safety.
- (3) Foreclosure of future options: The foreclosure of future options is very limited. The range of viable uses is limited. Agricultural feasibility is low.
- (4) Trade-offs among short-term and long-term gains and losses: There is no known significant economic "trade-off" involved in implementing the planned improvements for the use of the site. Potential short-term impacts and long-term impacts are offset by the planned mitigative measures. The short-term and long-term gains due to the project development outweigh any short-term or long-term losses. However, it is acknowledged that urbanization results in a loss of open space and the natural environment. There is a "value"

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to the natural environment that is hard to compare with the "value" of an urban environment. With that understanding the project has been designed with an awareness of the climate and landscape. Sustainable design will be practiced as much as practicable. The "kaha"ness of the place and the beauty of the lava will be preserved to the extent practicable. We will avoid the unnecessary greening of this area.

The Palamanui project will have a significant impact on the land. However, some impacts are positive and many negative impacts can be mitigated. Additionally, the benefits of the project significantly outweigh potential negative impacts.

Established standards and controls that require developers to consider and manage potential negative effects should effectively limit and mitigate foreseeable long-term impacts. For example, anticipated potable water requirements and proposed potable water systems for each project must be coordinated with the County of Hawai'i Department of Water Supply to ensure that water resources are available. Wastewater disposal systems must meet State of Hawai'i Department of Health requirements to prevent unintended effects to affected water bodies or water resources. Runoff concerns must be addressed with on-site controls in accordance with County construction permits. Compliance with and adherence to established controls are expected to lessen the impact on natural resources, and achieve lasting effects in resource protection and conservation. Lastly, the proposed residential, golf course, and the UHCWH are not expected to generate significant levels of noise or air quality impacts due to the relatively quiet and unobtrusive types of these activities.

Preservation and resource management plans will aid in protecting natural and cultural resources. In some cases this is better than a no action scenario in that the no action alternative means the resource is unmanaged and the natural course of events could result in the inadvertent damage, deterioration or loss of these resources.

The man-made environment would be impacted as a result of the proposed project combined with the anticipated impacts from the projects identified in the previous section. However, the developers must abide by established controls and provide appropriate mitigation for project-generated effects such as traffic and utility demands. Incremental traffic increases are likely to occur from specific and incremental developments that generate trip traffic in proportion to their scale. Where deemed necessary, developers may be required to include signalization, stop signs, and similar features as part of mitigation for project impacts. Demands for water and wastewater services, solid waste disposal, electrical power and communications need to be coordinated with utility providers to ensure adequate service. For economic reasons and as a function of sound policy, projects are encouraged to be designed with energy-efficient and energy conservation features.

Socio-economic impacts resulting from the proposed project in addition to the foreseeable projects identified in the previous paragraphs are generally expected to be beneficial. Construction will generate employment and economic opportunities. A population shift is anticipated due to the proposed single-family, multi-family, and student and faculty housing. Improved access to higher education would generate an employable work force required for a growing economy. The proposed project also includes interpretive venues for educating students, residents, and visitors about Hawaiian history and culture, thereby providing a valuable resource for social and cultural enrichment. A double-edged impact is the general rise in real property values. It is positive from a tax revenue and asset value increase perspective but negative in that it raises housing prices and makes housing less affordable to lower income

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families. There will likely be a slow demographic shift in some parts of the region, possibly a kind of gentrification, as income and ethnic profiles slowly shift with the increasing rise in property values.

6.3.4 Irreversible and Irretrievable Commitments of Resources

Construction and operation of the proposed action will result in the irreversible and irretrievable commitment of certain natural and fiscal resources. Major resource commitments include the land on which the facilities will be constructed as well as money, construction materials, manpower, and energy.

6.3.5 Adverse Environmental Effects that cannot be Avoided

Adverse impacts can be divided into short- and long-term effects. Short-term effects are generally associated with construction, and prevail only for the duration of the construction period. Long-term effects generally follow completion of the improvements, relate either simply to their existence or to the operation of the new facilities, and are permanent. Effects that can be considered both adverse and unavoidable are discussed below.

6.3.5.1 Unavoidable Adverse Short-Term Effects

Construction impacts to air quality are short-term and temporary in nature. If mitigation measures are not provided, significant airborne emissions could include fugitive dust (resulting in PM-10 emissions). Fugitive dust emissions are expected to result from earth-moving, cement-mixing activities, and vehicular travel in construction areas. HAR Section 11-60.1-33 prohibits the generation of fugitive dust without taking reasonable precautions to limit these emissions. As a result, significant fugitive dust generating activities will be minimized through mitigation measures identified in Section 6.1.5.

Besides emissions resulting from combustion of fossil fuels from construction equipment, vehicular emissions will also occur from commuting construction workers.

Noise impacts generated by the proposed action will come from the operation of equipment during the construction phase.

6.3.5.2 Unavoidable Adverse Long-Term Effects

After the proposed project is completed, any long-term impacts on air quality in the project area do to emissions from project-related motor vehicle traffic should be small. Worst-case concentrations of carbon monoxide should remain within both the state and the national ambient air quality standards. The urbanization of this project will result in a loss of natural and open space. There will be an increase in density, and a loss of archaeological sites classified as less significant.

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6.3.6 Significance Criteria

Significance criteria for assessing environmental impacts pursuant to Chapter 343 are identified in Title 11 Section 200-12 of the Department of Health's Administrative Rules. The following is an evaluation of the project based on those criteria.

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

The Master Plan recognizes the richness of the cultural history of this area and intends to avoid development on known significant sites of natural or cultural significance. Archaeological studies and cultural assessments were conducted during the EIS phase to determine the existence of such resources. Appropriate mitigative measures will be taken should such resources be discovered and potentially impacted by the planned development.

The archaeological inventory survey identifies sites for preservation, data recovery, and no further action. The Cultural Impact Study includes additional recommendations for preservation and protection. These items will be developed further and protected or enhanced as appropriate.

As stated previously both a natural forest preserve and an historical preservation area has been identified along with an interpretive center. Lava tubes and trails will also be protected to the maximum extent practicable. Additionally, we will continue to work with the advice of a cultural committee made up of local Kūpuna who will advise the project on other items of significance.

Several resource management plans are being developed to protect the various resources identified in the EIS. A dryland forest management plan will be developed in consultation with the North Kona Dry Forest Working Group. Monitoring plans for endangered species will be developed. An archaeological mitigation plan is being developed. Cave protection and Trail management plans are also being developed.

The State of Hawai'i Historic Preservation Division will be consulted regarding the cultural significance of the 1,900 plus meters of trails involved. In addition, Mr. Irving Kawahaima, Acting Na Ala Hele Trails and Access Specialist will be contacted for valuable input concerning trail preservation and proper usage for cultural benefit.

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

While any development closes off other options; the Hiluhilu Development intends to increase the range of beneficial uses of the environment by the community. This project will provide an increased housing stock, recreational uses, and above all, educational and cultural uses which will benefit the community. Agricultural use is marginal so loss of this option is minor.

The project will enhance protection and access to the native forest preserve and archaeological preserve. These resources are not currently accessible to the community. An integrated natural and cultural resource management plan will also protect sensitive ecological resources such as the cave environments.

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

The Hiluhilu project is being developed with the State's long-term environmental policies, goals and guidelines in mind. The expansion of the University of Hawai'i for the West Hawai'i region creates opportunities for residents of Hawai'i to improve their quality of life through

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education. Preservation of the Lowland Dry Forest area coincides with the State's policies and goals to protect natural resources. This Dry Forest can also serve as an opportunity to provide environmental education linked to the University of Hawai'i and other conservation organizations.

4. Substantially affects the economic or social welfare of the community or State;

The implementation of the Hiluhilu development will improve the economic and social welfare of the state through increased dollars that are anticipated with the expanded program focus. More jobs will be created in educational, research and technical areas. Funding for part of the UHCWH is also anticipated from Hiluhilu Development LLC to supplement funding for educational facilities.

The construction of the project will provide both short-term construction jobs and long-term jobs in the service sectors, health care, commercial/retail, academic, arts, and performing arts. It will expand the scope and venues related to the arts and education and increase the economic and social welfare of the State.

Three hundred million dollars in funds will be invested into the project; increasing capital development in Hawai'i. The project will generate 250 jobs per year during construction build-out and 1,850 permanent jobs upon completion. Net revenues to the County and the State will total \$25.5 million and \$13.9 million until buildout. Net revenues should continue into the foreseeable future. These numbers do not include the anticipated multiplier effects that are anticipated to add millions more to the State's economy.

5. Substantially affects public health;

The impact of the proposed developments on public health is positive. Additional homes will provide shelter for families. Recreational opportunities such as golf are necessary for good health. Making recreational resources more accessible gives people greater opportunities for healthy living. A wellness center and educational facilities offer public health improvement opportunities. The design of the village oriented along a north-south pedestrian corridor within a walkable scale encourages a healthy lifestyle. A health related business park is also being developed near the University Village. It should increase the quality of care in the region.

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

The project is expected to increase population to the area. Services are being planned to support population needs including housing, utilities and recreational opportunities. At build out, this project will consist of 845 residential units and a 120-room University Inn to be completed in three phases. UH student population for this area is projected to increase from 275 in 2006 to 750 in 2010. Ultimately a campus of 2000 students is anticipated. At buildout the project is anticipated to result in a population of 2,800 residents.

As noted previously there are both positive and negative secondary effects. However, in total, the secondary positive impacts outweigh negative impacts in that they enhance education, protect valuable endemic flora and fauna and enhance the growing reputation of North Kona as a desirable place.

7. Involves a substantial degradation of environmental quality;

Mitigative measures to preserve the lowland dry forest area are one of the recommendations to minimize the degradation of environmental quality. This dry forest area consists of 65-75 acres and may rank among the most intact lowland dry forest fragments remaining on the Island of Hawai'i. Designations of preserves and management plans will probably result in increased

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protection of natural systems and resources which are vulnerable to invasions of alien species and natural degradation in its unprotected states.

The project does not involve a substantial degradation of the environment. The buildings will be low 1-2 story designs that minimize view impacts. Threatened species will be protected in a managed way. The project will follow sustainable design practices where practicable to reduce its impact on the environment. Transportation will be multi-modal and because the concept is a mixed use, integrated community residents will be able to obtain all their basic necessities in the village and will not have to commute to other areas in cars. This will minimize impacts to noise and air quality.

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

All developments have incremental and cumulative impacts. However, the nature of plans and programs that are being developed will ensure that our impacts to the environment will be minimized and positive in many respects.

The potential negative impacts concerns the growing urbanization of North Kona; increased density and impacts on views; possible greening of Kekaha; groundwater impact; increasing traffic; and increasing need for public services.

Positive benefits from the proposed project includes the acceleration of the creation of the new University of Hawai'i Center at West Hawai'i; the protection of the dryland forest; accommodation of housing needs; more jobs; more higher quality jobs; access and protection of resources that may deteriorate naturally; more mauka-makai connections; more recreational resources; and improvements to the regional infrastructure (i.e., water systems).

Mitigation strategies to minimize the impacts on the environment at the proposed project site are discussed in other sections of this report. The proposed improvements are associated with the adjacent development of the expanding UHCWH. It is expected, therefore, that there will be cumulative effects upon the environment which will be considered in joint planning with the University of Hawai'i. We have previously noted that acceleration of the development of UHCWH to its new permanent campus. Strategies to mitigate the impacts to the Dry Forest and archaeological sites are addressed. If this project is not developed there is a possibility the resources associated with the dry land forest may disappear over time.

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

As previously stated, efforts will be made to preserve the Lowland Dry Forest area, which consists of rare and endangered species of plants. Preservation of this Dry Forest area will ensure that this 65-75 acre ecosystem will protect rare and endangered species in the Lands of Kau. Additionally, isolated stands will also be preserved. These actions will preserve habitats for the 'Io, 'Ōpe'ape'a and Pueo.

While all development will have some role in reducing the amount of habitat available to a species, we feel the preserve, protection of isolated stands, and the encouragement of native species in the landscape will provide a higher quality and better environment for these species in smaller areas.

The cave protection plan will help to preserve this unique Hawaiian ecosystem.

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

The most noticeable impacts will occur during construction and are short-term. An acoustic study projecting future traffic noise levels along the primary access roadways to the project

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were calculated for the year 2010. Traffic noise increases due to the project traffic are predicted to be insignificant to moderately significant. Since adequate setback distances are provided from the highways, noise impacts should be minimal.

A groundwater study was conducted to review impacts to groundwater sources. With proper course design and best management practices the golf course development and operation is not expected to have a negative impact on ground water resources. Lysimeters and monitoring programs will insure that impacts to ground water are avoided. While the project should not have any impact on ocean water quality due to our distance from the shoreline and the use of best management practices, Hiluhilu Development is willing to participate in an ocean water quality monitoring programs if that is considered necessary by the Department of Health. In general, storm drains and dry wells will be designed to avoid negative impacts to groundwater sources. Landscaping throughout the project area will be designed and used to filter and absorb pollutants in runoff wherever practicable.

11. *Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a floodplain, tsunami zone, beach, erosion prone area, geologically hazardous land, estuary, fresh water, or coastal waters.*

The 725.2-acre site is situated on the slopes of Hualālai, a dormant volcano. The site is not located along the tsunami zone, beach, estuary, or coastal waters.

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

A generous setback buffer from the highway will mitigate some of the visual impact of the project.

Design guidelines will insure that buildings integrate well with the land and climate. Site planning will create setbacks and buffers to soften the impact of development on the landscape. It is expected that all buildings at the University Village will be one, two, or three-story to create a low profile that is complementary and compatible with the expansive lava-strewn setting of the site. Buildings will be designed to blend into or compliment the surroundings of the project site. Roof colors and building materials will help to tone down their visual impact.

Landscaping will emphasize xeric plants species that are compatible with the arid climate of the region. As noted earlier plans will minimize the "greening of Kekaha." Therefore, negative impacts to visual resources are minimized.

13. *Requires substantial energy consumption.*

The development of the Hiluhilu plan will require short-term energy consumption for construction. The creation of housing and commercial activities will demand utilities including roadways, electricity and water, as well as sewage systems. Effluent will be used to partially irrigate the golf course which is an effective water conservation method.

As noted previously, LEED and other similar sustainable design criteria will be utilized. Solar, co-generation and other alternative energy options will be explored. Design guidelines that are being developed will encourage sustainable design practices that reduce waste, conserve energy and increase efficiency.

Utility systems such as the wastewater system are designed to utilize gravity to minimize energy consumption. Location of the treatment plant on the low spot makai of the facilities lowers pumping costs.

The development of our water system will complete a loop system for the Department of Water supply that reduces pumping costs for the overall regional system of the County of Hawai'i.

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The University Village is designed horizontally on the site to encourage walking and alternative travel made by minimizing vertical elevation climbs. The creation of bike paths and jogging paths encourages a healthy lifestyle all add together to reduce the use of cars and reduce gasoline consumption. A major purpose of the village is to create a service and jobs complex that reduces the need to drive for these goods and services.

Section 7.0
Alternatives Considered

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7.0 ALTERNATIVES CONSIDERED

In planning for the project various alternative designs and options were considered. Market demand and the owner's concepts were evaluated many times to develop a feasible plan. Coordination with the University of Hawai'i began fairly early in the planning process. This section reviews the options and alternatives to the proposed action that were considered.

7.1 NO-ACTION ALTERNATIVE

The No-Action Alternative means the services, products, facilities and amenities associated with the Palamanui project will not be realized. These include the following benefits and positive effects:

No residential construction would occur at the site. The planned 845 units of housing including 80 senior housing units and the 100 affordable housing units intended to accommodate 2,800 persons would not be built. Retail and commercial space would not be constructed. Health and wellness related facilities and services planned for the project would not be realized. The 120-room University Inn would not be added provide convenient short-term accommodations in Kona for University related functions.

In terms of employment, 2,600 person years of construction-related jobs (averaging 250 jobs per year for the life of the project) and 1,850 long-term, permanent jobs at buildout would be forgone.

The anticipated cumulative surplus of government revenues to expenses – in excess of \$25.5 million to the County of Hawai'i to build-out and \$13.9 million to the State of Hawai'i to buildout -- would be forgone. The annual surplus of \$5.3 million to the County of Hawai'i and \$3.4 million to the State of Hawai'i would not be realized. The expected \$300 million in investment over a 10-year period would not occur and the indirect economic impacts of the construction expenditures for this project would not occur.

The mauka-makai connection from Māmalahoa Highway to Queen Ka'ahumanu Highway would not be built to provide much needed transportation improvements for the West Hawai'i Community.

The project would not contribute to the improvement of the Department of Water Supply's system for the region. The development would provide connections to the northern end of the Department of Water Supply's system with additional storage tanks at appropriate elevations. This part of the system would service the State land, Kona International Airport at Keāhole and NELH. Other landowners would have to cover the amounts that the project could contribute to the improvement and the timing and feasibility of this happening in the near future is uncertain. Water service would remain difficult and expensive to provide to area property owners until those improvements can be made.

Recreational amenities associated with the golf course, the new active and passive parks and the bicycle paths would not be realized.

Given the very marginal return of the land for conventional agriculture, the lack of irrigation water and supporting infrastructure, there does not appear to be any prospect for starting ranching or any other active agricultural use of the property. The adverse impacts on the dry land forest area, the presence of significant tree species outside the dryland forest area

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complicates any efforts to clear land in the mauka parts of this property for agricultural use, especially for grazing.

The No-Action Alternative would result in the University's continued use of scattered existing facilities at the Kealakekua Business Plaza and elsewhere until public funding becomes available to build the new campus on the State's 500-acre parcel as a stand-alone development. The University would prefer to make the move in the near future and would like to expand its programs and student enrollment significantly as soon as the facilities are available. Since infrastructure funding for the campus has not been allocated the timing of this action would be uncertain without the assistance of Hiluhilu.

Continued use of the leased facilities would hamper the growth of student enrollment at the UHCWH where space is inadequate for existing Community College instructional programs. Student enrollment is now at 500. The University would like to expand that to 750 within a few years.

With no action, it would become increasingly difficult for the UHCWH to provide the diversity of courses and programs that are necessary to allow the West Hawai'i work force to prepare and adapt to changing technology affecting job development and growth.

The following inadequacies associated with the use of temporary facilities in Kealakekua for the UHCWH functions would be perpetuated with the No-Action Alternative:

- Facilities for higher education would continue to be located considerably south of the geographic center of the West Hawai'i region in an area that is not readily accessible via public transportation.
- The drive to the UHCWH would continue to require at least 40 minutes for more than half of the West Hawai'i population.
- The UHCWH would continue to be sited within an existing commercial office center that does not afford the image or surroundings befitting an institution of higher education.
- An overall lack of centralization and cohesive organization of the UHCWH functions would prevail as the UHCWH continues to use the available spaces that are separated by federal, state, and county offices and private businesses.
- Existing spaces utilized for the UHCWH programs and courses would continue to be under-sized, especially the classrooms, because the spaces in the commercial mall complex were not designed for this purpose.
- Support activities that require meeting spaces would continue to be held outdoors, at other locations or not at all due to the lack of ample and/or appropriate meeting areas within the Kealakekua Business Plaza.
- The educational experience would continue to worsen if classrooms are not soundproofed against the noise from commercial or business activities.

The following summarizes the impact of the No-Action Alternative:

- **Soils, Topography and Drainage:** The No-Action Alternative would have little or no impacts to soils, topography or drainage. Slow, natural erosion would continue to occur. Drainage will continue in its present condition with no improvements.
- **Water Resources/Water Quality:** Groundwater resources would not be used for the property. Hiluhilu will not contribute to the improvement of the County Department of

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Water Supply system for the region which would make potable water more readily available to the region.

- **Flora and Fauna:** Impact on flora and fauna would be neutral in that while the habitat would remain relatively undisturbed by man, trends in the current "natural" processes would result in the slow loss of habitat from alien species encroachment and grazing by introduced ungulates and predation from rats and feral animals. The dryland forest will retreat and the isolated clusters will slowly die away and disappear. The dry forest preserve and fenced exclosures would not be created and managed because there will be no income from a development to pay for its management. These resources would slowly deteriorate from lack of management and protection.
- **Culture and Archaeology:** Cultural and archaeological preserves would not be created and these resources will slowly deteriorate due to lack of management. These resources would remain inaccessible to practitioners and students.
- **Traffic and Transportation:** Traffic trip generation will not increase. This is a positive effect. However, traffic in the North Kona region will continue to increase from other developments and ambient increases due to population growth and development. The needed mauka-makai roadway would not be developed. To the extent that such growth occurs outside mixed use developments, the highways would have increased traffic between exclusively residential areas and supporting retail and commercial areas.
- **Infrastructure/Power/Communications:** This alternative would not generate the need for public or private infrastructure. There will be no need for power or telecommunication services.
- **Visual:** The No-Action alternative would retain visual resources in the area. Open space would be retained.
- **Public Services:** Police, fire, medical services and similar services would not be needed.
- **Population:** While the projected population increase from the project would not occur, the population of the region will continue to grow through in-migration and natural growth. The housing needed to accommodate the growth would not be provided.
- **Socio-Economic:** The anticipated \$300 million in investment and the ongoing economic activities and tax revenues that would have been generated would be foregone. There will be no increase in the need for public services.
- **Education:** The new concept envisioning a magnet campus for West Hawai'i would be delayed in its development due to insufficient Capital Improvement Program (CIP) funding. No new students will be generated and there will be no need for new public schools.
- **Conservation and Agricultural Land Use Designation:** The conservation district classification would not be changed. This would leave in place the legal restrictions on uses which may be conducted within the conservation district area and would require users to apply for conservation district use application (CDUA) permits. During the CDUA process, the Board of Land and Natural Resources could assess compliance with the conservation district rules and the potential impacts of the use on the archaeological sites and trail remnants located within the conservation district portion of the project site.

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7.2 ALTERNATIVE: MĀKĀLEI ESTATES EXPANSION

Another alternative is to continue the Mākālei Estates subdivision all the way down to Queen Ka'ahumanu Highway. This design alternative would have low density, 3-acre lots within the Kau ahupua'a with no golf course integrated with the subdivisions.

This alternative would result in approximately 150 new 3-acre lots. It results in a single housing type that serves a narrow market niche. This alternative does not integrate single and multi-family structures that would support a more diverse population and allow more equitable distribution of households of all income levels across the region. This alternative would result in a lower overall density of the community, but would have less public and regional benefits because it would be an upper income bedroom community rather than a regional urban node for the Kailua-Kona area.

There is strong market demand for this type of product. Housing and lot prices have continued to rise even in a slow national economy. Recent developments in West Hawai'i have highlighted many projects of this type. Mākālei Estates has sold well and is almost out of inventory. The location of the project site in the growing urban fringe of Kailua-Kona contributes to the strength of the market for this type of housing.

This alternative has the following impacts:

- **Soils, Topography and Drainage:** This alternative would have a lesser impact on topography and soils because the number of units would be less and the footprint for grading would be reduced. Based on the lower density (150 units as compared with 845 units) for the proposed project would result in a footprint that is about one fourth of the proposed project. Roadway lengths would be similar but the number of driveways and parking areas would be less because unit counts are less and there would be no University Village. This option will generate less offsite drainage than the proposed project as large lot developments typically have more open areas with landscaping than denser developments.
- **Water Resources/Water Quality:** Potable water demand for this option would be less due to the lower number of units. Impact on water quality (groundwater) and supply would be less as there would be a reduced level of demand due to the lower population numbers. Some of this will probably be offset by increased irrigation for larger lots. Lower densities will allow for better percolation of rainfall into groundwater aquifers when compared to the proposed action. Wastewater disposal systems need to be assessed for this option.
- **Flora and Fauna:** There will probably be less active management of the resources with this option. While the management plans, the measures to protect nesting pairs of 'Io during the breeding season, the dryland forest preserve, preservation of significant trees outside the dry land forest preserve and protection of critical cave habitats would still be done, a lower level of management would probably be necessary because the maintenance funding pool will be smaller.
- **Culture and Archaeology:** As with flora and fauna the management plans will be done and critical sites will be preserved, but the level of management will probably be less.
- **Traffic and Transportation:** A lower density development will generate less traffic. A dispersed development encourages the use of cars. Since there would be no University Village providing basic necessities, convenience items and food, residents would have to travel outside the development for these items. The only feasible means of transportation for those purposes would be cars.

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- **Infrastructure/Power/Communications:** The infrastructure, power and telecommunications services needed for this option would be less than the proposed action. Lower densities would lessen the demand for water, sewer and power.
- **Visual:** This lower density option would lessen potential visual impacts. Open spaces would be retained in the large lots.
- **Public Services:** This option will generate a need for public services such as police, fire and medical services. Existing services are probably adequate but not as convenient to the residents or the service providers.
- **Population:** 150 residences will probably average 3.0 people per household due to the higher income nature of the buyers for this type of development option. This would generate a population of about 450 people. The income requirement would limit this option to the higher income bracket. There would not be the mix of population that would have resided in the project area for the proposed plan.
- **Socio-economic:** As noted previously, this option meets a narrower market niche. As such the benefits of this alternative will accrue to those who are less in need.
- **Education:** There will be some increase in the need for school services due to the number of school-aged children that would occupy the estate lots. Jobs and support for the UHCWH would not materialize from this option.
- **Conservation Land Use Designation:** This alternative involves removal of land from the Conservation District. The effects of removal of the lower 274.9 acres of this land from the conservation district will include removal of the protective restrictions applicable to uses within the conservation district and the review of the Department of Land and Natural Resources under the CDUA process. This would have an impact on the archaeological sites and trails located within the conservation district.
- **Agriculture Land Use Designation:** This alternative involves removal of land from Agricultural District. The removal of this land from the agricultural district (450.3 acres) is not expected to have a significant effect on agricultural uses. The land was formerly used for ranching, but that use was discontinued many years ago. The land is very marginal for conventional agriculture, because of the lack of irrigation water and supporting infrastructure. There does not appear to be any prospect for starting ranching or other active agricultural use of the property. The presence of the dry land forest area, the possible significant tree species outside the dry land forest area complicates efforts to clear land within the areas in the agriculture district and to use it for activities like grazing.

7.3 ALTERNATIVE: CONVENTIONAL SUBDIVISION DEVELOPMENT WITHOUT GOLF COURSE

Another alternative would be a conventional residential subdivision without a golf course.

This alternative increases housing choice by developing a range of housing types. By integrating single and multi-family structures in new housing developments, the project would support a more diverse population and allow more equitable distribution of households of all income levels within the project. If the 180 acres for golf were developed for housing at a single family density of 5 units per acre, an additional 900 residential units could be added to the project. This would more than double the population as it represents a doubling of the number of residential units programmed.

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This alternative would create a slightly more urban University Village as the population density around the village would be denser and more people would come to the village on a routine basis.

The following are impacts that would be generated by this option:

- **Soils, Topography and Drainage:** This alternative would have an impact on soils, topography and drainage that would be greater than the proposed project. Residential development is more intensive than golf courses and requires more roads and infrastructure. Site work will require greater alteration of the land to develop individual house pads, fences and walls. There would be a greater impact on drainage as more roads and other impervious areas would be developed; thereby increasing runoff.
- **Water Resources/Water Quality:** There would be less percolation into the ground and more urban storm water runoff that needs to be filtered or settled out to minimize or avoid water quality impacts. Potable water demand would double as this plan represents a doubling of population. The availability of water from the Department of Water Supply would need to be evaluated. Brackish water demand would drop as there would be no golf course to irrigate. With less golf course irrigation there would be less recharge of the underlying aquifer. Potential sources of non-point source pollution would increase as there would be no centralized best management practices to control what percolates into the ground.
- **Flora and Fauna:** There would be a slightly greater adverse impact on flora and fauna as the open areas that could be incorporated into the golf course would not exist. This reduces some of the opportunities to plant native plant species from the area to support and enhance populations of native floral and faunal species. Unless managed properly, higher populations densities also tend to increase the presence of people in the preserves and may have a negative impact of increased disturbance to endangered species.
- **Culture and Archaeology:** The impacts to cultural and archaeological resources would be similar to the comments for flora and fauna. Unless they are managed properly, increased numbers of residents would increase negative impacts.
- **Traffic and Transportation:** This alternative would increase traffic to and from the site. In addition to doubling the residentially generated traffic more visitors would arrive to visit the greater number of residents. A larger local base would support a greater level of commercial activity which would increase traffic around the village and the major streets and intersections in the area including Māmālahoa Highway and Queen Ka'ahmanu Highway.
- **Infrastructure/Power/Communications:** This option would generate the most urbanized option we have considered. Consequently, infrastructure, power and communication services demands would be essentially double of the proposed project.
- **Visual:** This option would create a denser urban landscape than the proposed action. The open spaces that a golf course would have preserved would be filled with homes. This option would be visually more intrusive from the major highways as it would cover the slopes of Hualālai with more homes and streets.
- **Housing:** The increase in housing will generate an additional requirement for another 90 to 100 units of affordable housing. The housing market in North Kona is strong the increase in housing stock will be a benefit to those seeking homes. The range and inventory of homes would increase giving buyers more choices and possibly slowing the increase in housing

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prices. The proposed range of housing options would benefit a broad spectrum of the population.

- **Public Services:** The demand for public services generated by this option would be double that generated by the proposed project.
- **Population:** This option would more than double the population projected in the proposed plan. The mix of people would be similar as a broad range of housing types and family incomes would be involved.
- **Socio-economic:** This option would require a greater degree of investment to develop the additional 900 homes that would be developed. Economic diversity would be a little less as without the golf course the project would have a less regional attraction.
- **Education:** This option would increase the need for more schools. The doubling of population would double the need for school facilities. The DOE assumes a greater impact to public school needs from single-family residences than multi-family units based on the larger family sizes such units tend to house. Based on a projection of between one to two children per household the fully residential options would generate between 900 to 1800 students. This would generate the need for one to two new elementary schools.
- **Conservation Land Use Designation:** This alternative involves removal of land from the Conservation District. The effects of removal of the lower 274.9 acres of this land from the conservation district will include removal of the protective restrictions applicable to uses within the conservation district and the review of the Department of Land and Natural Resources under the CDUA process. This would have an impact on the archaeological sites and trails located within the conservation district.
- **Agriculture Land Use Designation:** This alternative involves removal of land from Agricultural District. The removal of this land from the agricultural district (450.3 acres) is not expected to have a significant effect on agricultural uses. The land was formerly used for ranching, but that use was discontinued many years ago. The land is very marginal for conventional agriculture, because of the lack of irrigation water and supporting infrastructure. There does not appear to be any prospect for starting ranching or other active agricultural use of the property. The presence of the dryland forest area, the possible significant tree species outside the dryland forest area complicates efforts to clear land within the areas in the agriculture district and to use it for activities like grazing.

7.4 ALTERNATIVE: NO LINKAGE WITH UNIVERSITY OF HAWAI'I

This project can proceed even if it has no linkage to the University of Hawai'i. Market studies show that the residential, golf course and commercial components are viable without the development of the University Village. If the University decides that it is not in the best interest of the University to do so, the Developer could proceed along these lines.

However, the linkage to the West Hawai'i campus offers the development, the University and the community so many cultural, educational and economic benefits that it is the developer's strong belief that the linkage should be maintained. Discussions with various University officials have indicated that the University is favorably inclined to proceed on this basis.

A new development at Palamanui without a linkage to the University will result in lost opportunities for synergistic development. In this alternative, the development would be a

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typical suburban development with no connectivity between the two large developments. There will be redundancy in basic infrastructure resulting in greater costs to the land owners.

The Learning Corridor planning and design targets educational resources is an essential component of any plan to meld the fabric of the neighborhood. Moreover, the Learning Corridor would provide education, culture, and the arts to the community and West Hawai'i region.

If the project develops without the UH, the spaces associated with the University would be filled primarily with commercial, retail and service providers that would be associated with the immediate residential and golf community. The commercial area would probably be smaller and more internal in its orientation. There would be less of a regional link though market studies indicate a significant demand for some regional commercial services in the area separate from the immediate community. Specialty shops catering to regional retired and second home residents may create some demand for arts, crafts and products related to the region. Medical and R&D uses are still possible. However, the location to the village off the main highways will probably mean a slow growth of commercial uses until regional development becomes much denser.

This development would have the following impacts:

- **Soils, Topography and Drainage:** For Palamanui, this alternative would have a similar impact on soils, topography and drainage as the proposed project. Developed areas would be similar in type and areas of impervious surfaces. The overall density of the project would be similar and acreages of grading and site work will be similar. There might be some reduction in density as the absence of the University would reduce the need for some commercial areas and support facilities that might otherwise be included.
- **Water Resources/Water Quality:** Impacts to water resources and water quality would be similar to the proposed project.
- **Flora and Fauna:** The impacts to flora and fauna are similar to the proposed project. There may be a loss in interpretive and educational programs related to natural resources as the natural pool of students who would otherwise have participated is missing and volunteer manpower and interest is likely to be less without university students.
- **Culture and Archaeology:** The impacts to culture and archaeology are similar to the proposed project. Again, the level of interpretive and educational programs is likely to be less because of the lack of interested students.
- **Traffic and Transportation:** There will be a decrease in traffic impact from this option in comparison with the proposed plan since the development of UHCWH will be delayed and not a direct part of the project. When the UHCWH eventually develops, if it develops without the Palamanui project, it will probably develop towards the center of the UH parcel with a separate access to the site. Palamanui would develop its own access to Queen Ka'ahumanu Highway along its own highway frontage. The University would develop separately through the Airport Access Road and a mid-level Main Street connection through the Kona Palisades subdivision. The traffic impacts of UH developments is likely to be delayed as the synergy of a partnership would not occur.
- **Infrastructure/Power/Communications:** The impact and demand on infrastructure, power and telecommunications would be similar to the proposed plan. However, there will be a slight lessening of demand and capacity for Palamanui since the utility lines (water, sewer,

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electrical, telecommunications), and wastewater treatment plant capacity would be sized without the addition of the University's needs. Therefore, there would be some reduction in pipe, wire and conduit sizes. The University would have to make its own arrangements on infrastructure. There would be some loss of efficiency with separate infrastructure systems for adjacent developments.

- **Visual:** Visual impact would not have been significantly different from the proposed action. The creation of two access roads instead of one would increase the urban character a little more from the highway.
- **Housing:** This alternative would generate a little less need for housing as UH students, faculty and staff would not be a significant part of the housing demand. The proposed housing to accommodate students in the village area would service a more general public. Affordable housing requirements would be similar as the total number of housing units remain roughly the same.
- **Public Services:** The need for fire, police and medical services would not differ much from the proposed action.
- **Population:** Population increase and demographic traits would not vary much from the proposed action. Defacto population would be less as fewer university students would be found on the site.
- **Socio-economic:** This option would forego the opportunity to create a village community with a unique identity for the Kona community. The opportunity to create a compatible mix of University and supporting uses for the convenience of students, faculty and Kona community residents participating in the University activities will be lost.
- **Education:** Impact to public school educational services will be similar to the proposed action. This option would preclude the development of a unique, supportive long-term relationship with the University. There will be a delay of the relocation of UHCWH to its permanent location. Impacts to the public education system would be similar to the proposed action as the total number of residents from the development would be similar.
- **Conservation Land Use Designation:** This alternative involves removal of land from the Conservation District. The effects of removal of the lower 274.9 acres of this land from the conservation district will include removal of the protective restrictions applicable to uses within the conservation district and the review of the Department of Land and Natural Resources under the CDUA process. This would have an impact on the archaeological sites and trails located within the conservation district.
- **Agriculture Land Use Designation:** This alternative involves removal of land from Agricultural District. The removal of this land from the agricultural district (450.3 acres) is not expected to have a significant effect on agricultural uses. The land was formerly used for ranching, but that use was discontinued many years ago. The land is very marginal for conventional agriculture, because of the lack of irrigation water and supporting infrastructure. There does not appear to be any prospect for starting ranching or other active agricultural use of the property. The presence of the dry land forest area, the possible significant tree species outside the dry land forest area complicates efforts to clear land within the areas in the agriculture district and to use it for activities like grazing.

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7.5 ALTERNATIVE: COMMERCIAL AND LIGHT INDUSTRIAL COMPLEX

General commercial and light industrial uses were considered for the lower half of the project area. These uses would have targeted support services to the airport, NELH and regional needs. It would have served as a job and income generator for the region. However, this alternative was dropped early in the planning process for several reasons. First, the character of such uses would not be the best match for the uses in the mauka section of Palamanui. We did not feel that such uses were compatible with the community concept of a learning community with a focus on health and recreation that we were planning. Second, it would be visually more intrusive and less desirable from a marketing standpoint. The makai area is highly visible from the Queen Ka'ahumanu Highway and this alternative would extend the sightline of industrial uses along the highway. Third, there are several existing industrial areas along the coast which will be available to meet existing demand for industrial space. The extent of additional demand for this type of space is uncertain. Finally, the potential for pollution and negative impacts to groundwater and natural resources was greater with this option relative to the others under consideration. Because of these reasons, this option never proceeded beyond the concept phase and no specific program or acreage summary was developed.

This alternative has the following impacts:

- **Soils, Topography and Drainage:** The impacts to soils, topography and drainage would be somewhat more detrimental than the proposed action. This option would have increased larger hard surface areas and larger paved areas to accommodate warehouses and parking lots. There would have to be more grading on the lower portions of the project site to accommodate these uses. There would have been an increase in runoff from the increased amount of impervious surfaces. This alternative has the potential for increased amounts of industrial pollutants due to the potential nature of such uses. The increase in impervious surfaces would have generated more runoff. Mitigation needs to control the above impacts would have been greater. These were some of the reasons why this option was dropped early on.
- **Water Resources/Water Quality:** There would be increased potential for negative impacts to water quality due to potential percolation of industrial solvents and agents and automotive residuals on the ground into the groundwater. Expensive solutions to mitigate these potential impacts would have been needed. Monitoring wells would have been required to monitor potential impacts to groundwater resources.
- **Flora and Fauna:** Impact to flora and fauna would be similar to the proposed action. The makai side of the project site is primarily barren lava fields with little or no vegetation. Development of these sites would not negatively affect native species of plants or animals. Cave environments have not been located on this section of the project site.
- **Culture and Archaeology:** Except for the settlement complex near Queen Ka'ahumanu Highway, this section of the project site has the least amount of archaeological features. Site development for this use would have minimal impact on cultural and archaeological resources.
- **Traffic and Transportation:** This alternative would increase the number of trucks and service vehicles traveling through the project site. Depending on the timing of deliveries it could impact the existing traffic congestion on Queen Ka'ahumanu Highway. This option would result in more trucks mixing with the residential vehicles and neighborhoods in the

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development. This was viewed as undesirable and did not fit the character of the community we were designing.

- **Infrastructure/Power/Communications:** Depending on the type of industries that would have relocated to the site there might have been an increased demand for power and/or water demand.
- **Visual:** This option would extend the visual impact of warehouse like structures visible from Queen Ka'ahumanu Highway. The location of industrial uses and warehouses from public views and the planned residential uses would not be ideal. Large industrial structures would have a more obtrusive visual impact than the proposed action. Visual screening with landscaping would mitigate, but not eliminate the visual impacts.
- **Public Services:** This alternative would have similar impacts on police, fire and medical services as the proposed action. Proposed health and residential developments would be replaced by commercial and industrial uses. The differences in service requirements would not have been significantly different.
- **Population:** There would have been a slight reduction in population density for the project site, as some residential units would be replaced by commercial and industrial uses. The de facto daytime population might be similar due to the presence of workers.
- **Socio-economic:** Overall investment would be similar to the proposed action. It is likely that this option would generate more jobs for the region through the greater development of commercial and industrial uses.
- **Education:** This option will have less impact on educational service needs than the proposed action due to the reduction in the number of residential units that would be developed.
- **Conservation Land Use Designation:** This alternative involves removal of land from the Conservation District. The effects of removal of the lower 274.9 acres of this land from the conservation district will include removal of the protective restrictions applicable to uses within the conservation district and the review of the Department of Land and Natural Resources under the CDUA process. This would have an impact on the archaeological sites and trails located within the conservation district.
- **Agriculture Land Use Designation:** This alternative involves removal of land from Agricultural District. The removal of this land from the agricultural district (450.3 acres) is not expected to have a significant effect on agricultural uses. The land was formerly used for ranching, but that use was discontinued many years ago. The land is very marginal for conventional agriculture, because of the lack of irrigation water and supporting infrastructure. There does not appear to be any prospect for starting ranching or other active agricultural use of the property. The presence of the dryland forest area, the possible significant tree species outside the dryland forest area complicates efforts to clear land within the areas in the agriculture district and to use it for activities like grazing.

7.6 ALTERNATE LOCATIONS

Alternate locations for the project were considered. However, this evaluation of alternative sites was limited by several factors. First, the project site is the remainder of an approximately 1,000 acre site. The focus of planning was to find the optimal use for the remainder (725.2 acres). Hiluhilu had developed the mauka portion of the site into Mākālei Estates and wanted to

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proceed with a development that was compatible with Mākālei Estates and would allow it to fulfill prior obligations to government agencies regarding the site. Second, the consideration was limited to lands that were available to or owned by the developer. Third, the project had to be in an area that had been recognized as suitable for this type of development. The location of Palamanui within an area identified in the County's General Plan for urban expansion was a significant factor. Fourth, there was a strong preference for a project that would provide community benefits over and above that of providing new housing. Given these factors, Hiluhilu did not identify any alternate locations for this project.

7.7 ALTERNATIVE: NO RECLASSIFICATION OF THE CONSERVATION LANDS

The project site consists of lands designated Agriculture and Conservation. *Figure 1-3* illustrates the land use classifications of the Palamanui project site. The lower portion of the project site is classified Conservation.

One alternative is to leave the conservation designated portion of the site in Conservation. This land use alternative would result in the preservation of the conservation land use classified inventory. The benefit of this alternative would be the preservation of the 274.9 acres of conservation district classified land in the state inventory.

Under this alternative, the proposed activities for Palamanui would shift mauka increasing the intensity of use in the agriculturally designated portion of the project site. Hiluhilu Development would continue to pursue a boundary amendment from the Land Use Commission to change the agriculturally designated lands to an urban classification. Plans to jointly develop the parcel with the University of Hawai'i would continue. Additional analysis would be conducted to find a suitable location for the wastewater treatment plant.

Access to the project site from Queen Ka'ahumanu Highway would continue to require some development through the conservation portion of the project site for the wastewater treatment facility and some access roadways. Thus a Conservation District Use Permit from the State Department of Land and Natural Resources would be required.

Under this alternative, there would be no need to petition the Land Use Commission for a reclassification of the Conservation lands to an urban designation.

Other uses permitted in the conservation district such as recreational or resource extraction activities may be pursued. Should the developer pursue these uses within the conservation district portion of the project site, Hiluhilu Development would go before the Board of Land and Natural Resources to request a Conservation District Use Permit based on a revised site plan. During the CDUA process, the Board of Land and Natural Resources could assess compliance with the conservation district policies and rules and the potential impacts of the use on the archaeological sites and trail remnants located within the conservation district portion of the project site. An Environmental Impact Statement would be required.

The conservation resources found in this area are primarily open space, an archaeological settlement site, some smaller archaeological features and sites, trail fragments and the aesthetic values of the barren lava landscape. Most of these resources and values will be preserved in the master plan for Palamanui. A 1000 foot buffer area will preserve most of the open space value from the highway. The only structures in this area will be the wastewater treatment plant set back about 500 feet from the highway. The plant will be screened and barely visible from the highway. All the significant archaeological features in this area are preserved under the plan. If

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anything, there will be greater care to the settlement site as it is expected to become part of an interpretive program that will be developed under the integrated natural cultural resource plan for the project. Some trail segments may be lost but the overall trail resource will be preserved with linkages through the project. The aesthetic values of the barren lava landscape will be preserved in the buffer zone and will also be respected in the golf course design that will include this area. The golf course will use predominantly native species and be designed to blend into the lava landscape and highlight its more dramatic features.

From an overall standpoint the project should enhance the preservation of conservation values. Natural and cultural resources of high value such as the significant archaeological sites and excellent cave environments will be preserved. A nearly pristine 65 acres dry, mesic forest will be protected as a special preserve. Also, large areas of the 180 acre golf course site will retain the lava landscape as a design feature incorporated into the course. Except for the settlement complex which will be preserved in any scenario, the resources located in the conservation district area are not the best examples of the resource and better examples and resources will be given active management and protection in other areas of the development. In many ways there is a net increase on the protection of conservation resources since much of that resource is located in the vulnerable agricultural district. The Plan for Palamanui protect these conservation resources in the agricultural district. Without the project these resources would at best receive benign neglect and at worst deteriorate through pot hunters, regular hunters, feral animals, alien species and the effects of weather and erosion. The proposed project is a better way to protect these resources.

8.0 SUMMARY OF UNRESOLVED ISSUES

The consultation process for this project has yielded substantial input from government agencies, private interest groups, and individuals. However, there are several issues that remain unresolved at this time, pending further planning studies and design, and agency and community interaction.

8.1 ACCESS TO PALAMANUI

The preferred access to Queen Ka'ahumanu Highway for Palamanui is the alignment connecting to the Airport Access Road. However, that alignment passes through lands that are not owned by Hiluhilu Development. Preliminary discussions indicate this option is feasible with potential benefits to all parties involved. However, no binding agreement for easements or access has yet been negotiated and the Department of Transportation has not approved any intersection design changes. Consequently, Hiluhilu Development has retained the option of a direct access to Queen Ka'ahumanu Highway from its permitted access on its own property to Queen Ka'ahumanu Highway. This uncertainty will be resolved when written agreements are negotiated.

8.2 INJECTION WELLS

There is a possibility that back-up injection wells may be needed for disposal of treated wastewater when conditions restrict the use of the treated wastewater for golf course irrigation. During such occasions the treated effluent will have to be disposed in injection wells. There is no site on the property that is below the UIC line and therefore an offsite location may be needed. We are currently looking at various options. If some of the alternative treatment options such as the living machine system is selected this may not be necessary.

8.3 LONG-TERM MAUKA-MAKAI ROAD ALIGNMENT AND EXTENT OF TRAFFIC IMPROVEMENTS AND FAIR SHARE CONTRIBUTIONS

The Keāhole to Kailua ("K-to-K") Plan calls for a mauka-makai roadway through the Palamanui site. The alignment shown on the current plan indicates a winding roadway through the Palamanui site that links to the existing Drive through Mākālei Estates. Another mauka-makai alignment is shown as University Drive through State lands. Preliminary agreements are being discussed with the Department of Hawaiian Homelands (DHHL) and the Department of Land and Natural Resources (DLNR) to plan an access route through their lands to create the University Drive/Palamanui Access Road. Additionally, conceptual layouts for the intersection at University Drive have been prepared and are being circulated for review with, HELCO, State DLNR, State DOT and DHHL. Two issues create difficulties with the options shown on the Plan. First, the grade of the road through Mākālei Estates is very steep and does not meet grade standards for a collector street. Second, the State Department of Transportation has a general preference toward reducing the number of intersections onto major highways such as Queen Ka'ahumanu Highway. As such, the preferred option is to consolidate the Hiluhilu Access point with University Drive. However, the substandard nature of Mākālei Drive remains a problem. Ideally, an alternate route with a gentler slope should be developed but such a route will require adjustments that involve other landowners and alternate financing methods. Recent comments from the County Planning Department and other agencies indicate that another alignment may be considered. The new alignment follows more favorable terrain by heading north along contour lines before connecting to Māmalahoa Highway. This issue remains

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unresolved. In the interim, a connection will be made from Mākālei Drive through the University Village to Queen Ka'ahumanu Highway by way of the University Drive/Palamananui Access Road. The projected impact on the mid-level roads was not included because these roads do not currently exist. There are no existing conditions from which to project future impact. It is anticipated that additional discussion of the impact of the project on the proposed mid-level roads will be ongoing. However, even with the development of the Kaloko Industrial Park and the Kaloko Honokōhau Business Park, the mid-level roads will not connect with the project site. Any regional impact will be related to impacts on Māmalahoa Highway and Queen Ka'ahumanu Highway. Hiluhilu Development has revised the site plan to include the extension of three mid-level roads through the project property. These roadways segment the project site into three sections. The degree of segmentation will depend on how wide the roadways are and the width of the right of ways. The project would obviously add to the traffic utilizing these roads when they are built. The magnitude of the impact would depend largely on the timing of the mid-level road construction and the timing of other developments linked by the mid-level roads. There are additional conclusions and technical questions remaining to be resolved related to the traffic impact resulting in mitigation and cost issues. Mitigation measures for the Airport Road intersection include installing an on-demand traffic signalization system, and providing left-turn and right-turn lanes for vehicle deceleration and red-light/yield storage space. The costs for these mitigative measures are currently undetermined.

Fair share contributions for traffic improvements are unresolved at this time. Discussions with state department of transportation are currently in process.

The new intersection with Queen Ka'ahumanu Highway requires that an agreement be reached with the State Department of Transportation on design, phasing and construction. If the preferred alignment is the new University Drive alignment from the Keāhole Airport access road, the Department of Hawaiian Home Lands and Department of Land and Natural Resources must also agree since the road will go through their land. The developer has spoken to both agencies and has tentative verbal approval to begin planning for this alignment. Discussions regarding conceptual design of the intersection are ongoing with State DOT Highways. Several alternative concepts are being considered. A primary objective of DOT is to accommodate future highway and intersection improvements as the region grows. Intersection improvements constructed for the University Drive/Palamananui Access Road will be designed to accommodate future improvements that are envisioned by DOT's long-term planning for the area. The extent of specific improvements within State right-of-way constructed for the University Drive/Palamananui Access Road will be considered in negotiating regional fair share contributions to other off-site improvements that DOT will be implementing in the North Kona region to address the need for highway improvements as the area continues to grow.

A mauka-makai connection from Mākālei Drive to Queen Ka'ahumanu Highway will be made. The roadway dimension and specific alignments will be finalized with the County Department of Public Works before construction begins. This connection will create a new mauka-makai route for the region.

Queen Ka'ahumanu Highway, Māmalahoa Highway and Palani Road all serve regional needs. Palani Road and Queen Ka'ahumanu Highway already experience severe traffic congestion during peak periods. The traffic study for the project identifies impacts to these roadways and to specific intersections such as the Queen Ka'ahumanu Highway intersection with Ka'iminani Drive and the Queen Ka'ahumanu Highway intersection with Palani Road. Specific turning movements such as the left turn on Palani Road from Queen Ka'ahumanu Highway

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southbound are identified for changes in level of service as a result of the project and other developments in the region. The TIAR recommends some mitigation recommendations for these intersections and roadway segments. The SDOT must determine each developer's fair share of the various regional improvements that will be needed to accommodate traffic generated by Palamanui and other planned developments in the region. The State Department of Transportation must also plan for the design, phasing and construction of the regional improvements. The discussion on fair share is dependent on the SDOT identifying each developer's proportional contribution to impacts at specific intersections and along sections of the affected highways. These proportional contributions to impacts can then be applied to project costs to determine each developer's fair share of each project that will be needed. This issue is currently unresolved, because DOT's regional highways plan needs to be updated and proportional contributions from specific developments to the need for various highway projects needs to be determined.

8.4 CULTURAL AND ARCHAEOLOGICAL CONCERNS

Hiluhilu Development is aware that preservation and management of archaeological and cultural resources is an ongoing process. Specific management plans for the historic sites, cave environments and trails are being developed. Inventory surveys have been conducted. A cultural advisory committee for Palamanui has been formed and will continue to advise the developer. Mitigation plans will be part of a larger Integrated Natural and Cultural Resources Management Plan (INCRMP) that are being developed with the project teams consultants and the advisory committee. Additionally, Hiluhilu Development will work with the State Historic Preservation Division (SHPD), other local kūpuna, interested government officials, area residents, and the administration and students of the UHCWH to ensure that the management plans are responsive to both public and agency concerns. The development of interpretive programs is being deferred until a later date to allow the students and staff of the UHCWH to become directly involved with those actions. A detailed inventory map will be utilized in the siting of buildings to avoid impacting significant sites. These sites will be available as an overlay map to be used in future site planning as the various increments of the project are developed.

When the project is completed, there are several potential impacts to the sites that may occur in the future. These impacts include, but may not be limited to, damage to sites due to removal of surface rock from site features for landscaping efforts by homeowners; unintentional disturbance to site features by visitors, especially children; and intentional destruction of site features and deposits, by artifact collectors or vandals. Another impact is the continued deterioration of the sites due to natural processes, especially destructive vegetation growth within and on the architectural features of dry-laid stone. These issues can be addressed in the Covenants, Conditions and Restrictions (CC&Rs). Hiluhilu Development can work with the Homeowners' Association (HOA) to draft these CC&Rs to establish preservation/conservation easements for environmental, archaeological, and cultural areas on this property.

8.5 WATER USE AND DEVELOPMENT

Regional coordination related to water issues is ongoing and the Developer is working with the State DLNR, County Department of Water Supply, and major landowners in the area. Studies suggest that sources are adequate but that storage and transmission facilities are inadequate to meet the growing demand in North Kona. Hiluhilu Development has already agreed to

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dedication of two wells in the Mākālei subdivision to the County Department of Water Supply. Also, as noted previously Hiluhilu Development will also drill three new brackish wells for irrigation purposes. Use of recycled effluent will help to reduce consumption of groundwater resources and contribute to recharge of the water table. Fair share contributions have not yet been agreed upon. Discussions are ongoing with UH to determine whether or not reclaimed water will be used for UH landscaping.

A North Kona well siting and acquisition study by R.M. Towill has been commissioned by the Department of Land and Natural Resources. The preliminary report dated February 9, 2004 confirms the overall conclusions mentioned in this report (*Appendix S*). Additionally the report states that the existing demand is 1.0784 mgd. The 2020 potable water demand for North Kona is projected to be 14.2226 mgd. Overall regional infrastructure improvements needed to service all projects are estimated at \$78,270,000. (*Appendix S*) The overall increase in demand for potable water in the region is 13.1442 mgd. Palamanui represents a potable water demand for about 0.801 mgd or approximately 6% of the projected 20-year increase in demand. While estimating impacts on complex systems such as the water delivery system is not an exercise in simple proportions, it may provide an order of magnitude understanding of impacts. If overall cost is \$78, 270,000, then a proportional 6% value would be about 4.7 million dollars. These costs accrue over the 20-year timetable.

Hiluhilu Development will pay for all onsite water costs to its development and will also design its system to accommodate the development of the University of Hawai'i Center at West Hawai'i. Golf course and common area (roadside landscaping, parks and village green) irrigation water will be supplied by wastewater effluent and the three brackish wells that will be developed at the mauka end of the project site. The developer anticipates that portions of the internal system will be designed to serve and integrate with the overall regional infrastructure and count as a credit to Hiluhilu's fair share contribution. Those sections will be dedicated to the Department of Land and Natural Resources or the County Department of Water Supply.

8.6 ENDANGERED SPECIES

The site has many natural resources and rare species that need protection. Broad concepts for preservation and protection have been identified by the plan. Specific preservation and management plans are still pending. The creation of the dry mesic forest preserve is a positive impact. The management plan for the Dry Forest area will be developed in consultation with the North Kona Dry Forest Working Group. Smaller clusters outside the preserve will also be protected and incorporated into the landscape. The sites surveyed but specific plans have not yet been developed. They will be completed before site grubbing commences. A management plan for construction during the nesting season of the 'Io (Hawaiian hawk) is also a pending item. A monitoring program will be a part of the management plan. A cave protection plan is also being developed and will be completed before grading begins.

8.7 TIMING WITH UNIVERSITY DEVELOPMENT

There have been questions about the timing of the development of the University of Hawai'i Center West Hawai'i and whether it matches with the timing of Hiluhilu. Questions have also been raised about the viability of Palamanui without the West Hawai'i Campus development. Hiluhilu has been in discussions with the University of Hawai'i since the inception of the project. It is clear that the University is committed to establishing a permanent site for the UHCWH. The major obstacles that were identified in establishing the UHCWH permanent site

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were the development of supporting infrastructure, particularly potable water and roads, and CIP funding for the initial buildings and related improvements. After reviewing the situation with the University, Hiluhilu decided that it could proceed with including office and classroom buildings within the Palamanui side of the University Village so that the University could move. These buildings would be supported by all necessary infrastructure installed by Hiluhilu and leased to the University. Discussion to date with the University indicates that this is a viable option for the University. This would allow the University to relocate to the UHCWH site. At some point, the University will have the funding to start construction on its land and at that point, it can move out of the buildings it no longer needs on the Palamanui side of the University Village. Hiluhilu could then convert those buildings to other uses.

The market studies that were conducted for the project showed that the project is feasible without the linkage to the University. Although there was a strong positive response to the University linkage, the growth projections for the area show sufficient demand to support the planned residential units without the University linkage. The commercial component was scaled to support the residential development, so the market study supports that level of development as well.

8.8 EXTENT OF FAIR SHARE CONTRIBUTIONS FOR THE DEPARTMENT OF EDUCATION

Hiluhilu Development will contribute to the development, funding and / or construction of school facilities, on a fair share basis, as determined by and to the satisfaction of the Department of Education. Terms of the contribution will be agreed upon in writing by Hiluhilu Development and the Department of Education prior to obtaining county subdivision and building permits.

Fair share contributions are unresolved at this time. Preliminary discussions with State Department of Education regarding current fair share policies and development towards an agreement are ongoing. Hiluhilu Development is currently reviewing the State Department of Education Fair Share program.

Using the DOE formula for impact and assessment it is projected that Palamanui will generate 379 students from grades K to 12 who will need school services. Senior citizen housing and the University Inn do not count toward the DOE impact. Acreage standards for DOE schools vary from 8 acres for elementary schools to 50 acres for high schools. Elementary school populations are generally planned for campuses up to 800 students. Clearly Palamanui will not generate enough students to fill one elementary school campus. However, school planning is by school service district and school complexes focused on the high school in the region. Also, the formula for fair share that is adopted by the DOE is not linked to the school size but to potential numbers of students generated and a pro rata cost associated with that student. How this pro rata cost share is met is subject to negotiation in an agreement with the DOE. The DOE will decide whether a school site is needed. The value of any land dedication clearly needs to be in proportion to the potential impact from the development. The nexus for the impact will be clarified in the agreement.

Hiluhilu Development will offer a school site to meet all or part of its fair share contribution if that is the Department's wish. The agreement between the DOE and Hiluhilu will be in place before the start of housing construction.

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If the DOE determines that land dedication is required, Hiluhilu Development would provide the land within the Palamanui project site. Such a requirement, however, would involve additional planning, site design analysis and negotiations with the DOE to determine facility needs and siting requirements. If the DOE determines that a fee in-lieu is required, clarification will be needed to clarify fair share calculations.

8.9 AFFORDABLE HOUSING REQUIREMENT

The County of Hawai'i Affordable Housing Code requires 10 percent of total units to be affordable. Per Section 11-4 of the County Affordable Housing Code, alternatives to the provision of on-site affordable housing units are available. These options include payment of in-lieu fees; provision of affordable housing units on property other than the project site; provision of developable land; and provision of infrastructure / services.

Hiluhilu Development is committed to contribute to the provision of affordable housing units. Approximately 100 affordable housing units will be provided within the Palamanui project site to support families with incomes up to 140% of the median income in the county of Hawai'i. Fifty units will be made available for sale and fifty units will be made available for rent. Affordability will be based on Federal, State and County standards and guidelines. Sales and rental affordability guidelines are provided in *Appendix N*.

Formal agreements with the County of Hawai'i regarding the affordable housing provision are still pending.

Should the need arise to entertain the option of payment of in-lieu fees instead of the provision of affordable housing units on site, Hiluhilu Development will discuss the amount of subsidy required with appropriate state and county officials.

8.10 DEVELOPMENT OF PALAMANUI WITHOUT A LINKAGE WITH THE UNIVERSITY OF HAWAII

Consideration has been given to developing Palamanui without a linkage with the University of Hawai'i Center West Hawai'i. This alternative was discussed in Section 7.4 of this EIS. Since this issue is unresolved at this time, we would like to repeat it in this section.

Palamanui can proceed even if it has no linkage to the University of Hawai'i. Market studies show that the residential, golf course and commercial components are viable without the development of the University Village. If the University decides that it is not in the best interest of the University to do so, the Developer could proceed along these lines.

However, the linkage to the West Hawai'i campus offers the development, the University and the community so many cultural, educational and economic benefits that it is the developer's strong belief that the linkage should be maintained. Discussions with various University officials have indicated that the University is favorably inclined to proceed on this basis.

A new development at Palamanui without a linkage to the University will result in lost opportunities for synergistic development. In this alternative, the development would be a typical suburban development with no connectivity between the two large developments. There will be redundancy in basic infrastructure resulting in greater costs to the land owners.

The Learning Corridor planning and design targets educational resources are an essential component of any plan to meld the fabric of the neighborhood. Moreover, the Learning

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Corridor would provide education, culture, and the arts to the community and West Hawai'i region.

If the project develops without the UHCWH, the spaces associated with the University would be filled primarily with commercial, retail and service providers that would be associated with the immediate residential and golf community. The commercial area would probably be smaller and more internal in its orientation. There would be less of a regional link though market studies indicate a significant demand for some regional commercial services in the area separate from the immediate community. Specialty shops catering to regional retired and second home residents may create some demand for arts, crafts and products related to the region. Medical and R&D uses are still possible. However, the location to the village off the main highways will probably mean a slow growth of commercial uses until regional development becomes much denser.

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Section 9.0
Required Approvals and Permits

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9.0 REQUIRED APPROVALS AND PERMITS

This section includes a description of the required approvals and permits to implement the Hiluhilu Development. The necessary entitlements include approvals from several state, and county agencies and entities. All necessary ministerial permits such as grading and building will be obtained prior to construction.

Permit or Approval	Authority	Proposed Date of Filing
Land Use Boundary Amendment	State of Hawai'i Land Use Commission	12/20/03
Wastewater Treatment Facility and Irrigation with Treated Effluent	State of Hawai'i Department of Health	12/1/04
Highway entrance from Queen Ka'ahumanu Highway	State Department of Transportation	9/1/04
Subdivision and Plan Approvals	Hawai'i County Planning Department	6/1/05
Water Source and Distribution System	Hawai'i County Department of Water Supply	8/1/04
Building Permits	Hawai'i County Planning Department	As needed by phase 12/1/04
Grading Permits	Hawai'i County Department of Public Works	As needed by phase 12/1/04
Rezoning	Hawai'i County Planning Department	10/1/04
National Pollutant Discharge Elimination System (NPDES) permit	Hawai'i Department of Health	12/1/04
Brackish and Potable Wells Permit	Water Resources Management	8/1/04
Underground Injection & Control Permit (UIC)	Department of Health	As needed
Notice of Proposed Construction or Alteration	Federal Aviation Administration	As needed
ADA Title II HRS 103-50 Review	Disability and Communication Board	As needed

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Section 10.0
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- Hart, Patrick, Ph.D. (October 2003). *Botanical Reconnaissance, Lands of Kau, North Kona, Hawai'i.*
- Hawai'i Biological Survey (December 2003) *Hiluhilu Cave Fauna Survey.*
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- State of Hawaii. Department of Business, Economic Development & Tourism. Office of Planning. (January 2004). *Tenth Annual Report for Land Use Commission Docket No. BR92-685 Office of State Planning / Keāhole to Kailua State Lands.*

PALAMANUI – A HILUHILU DEVELOPMENT PROJECT

Final Environmental Impact Statement

Tamimi, Yusuf N., Ph.D. (July 2003). *Lands of Kau, North Kona, Soil Report.*

THK Associates, Inc. (December 2002) *Residential and University of Hawai'i Town Center Market Analysis Update.*

THK Associates, Inc. (July 2003) *Fiscal Impact Analysis.*

University of Hawai'i, Hawai'i Community College (1997). *University of Hawai'i Center: West Hawai'i Development Plan, 1998-2007.*

U.S. Green Building Council (May 2003). *LEED Leadership in Energy and Environmental Design Reference Package for New Construction & Major Renovations. Version 2.1*

Waimea Water Services, Inc. (June 2003) *Groundwater Resources of Kau. A Water Study for Hiluhilu Development.*

Section 11.0
Agencies and Parties Consulted

PALAMANUI – A HILUHILU DEVELOPMENT PROJECT

Final Environmental Impact Statement

11.0 AGENCIES AND PARTIES CONSULTED

The following agencies, organizations and individuals were contacted during the preparation of the Environmental Impact Statement Preparation Notice (EISPN) and this Draft Environmental Impact Statement (DEIS) for the proposed Palamanui project. Copies of the written comment letters and responses are included in this report. In addition, comments and responses made on earlier EIS reports are included in this document.

Local area experts consulted in regards to natural and cultural resources, include Ruby McDonald, Hawai'i County Native Hawaiian Chamber of Commerce, Kohanaiki 'Ohana, Hannah Springer and the North Kona Forest Working Group. An advisory committee has been established to provide future consultation needs regarding these matters. In addition, parties affected by the Land Use Commission petition have been informed of the project, including the State Attorney General, Time Warner Enter. Co., Verizon Hawai'i, Inc., County Planning Commission, K-W Kau, LLC., K-W Kohanaiki and Mākālei Estates Community Association.

Respondents and Distribution	Received and or Commented on earlier EIS reports	Received May 2004 EISNP	Comments Received on EISPN	Received July 2004 DEIS	Comments Received on July 2004 DEIS	Will Receive 2004 FEIS
A. Federal Agencies						
Dept. of Agriculture -- Natural Resources Conservation Service	X	X				
U.S. Department of the Interior - Fish and Wildlife Service	X	X		X		
U.S. DOI - U.S. Geological Service		X	X			
B. State Agencies						
OEQC - Office of Environmental Quality Control	X	X	X	5 copies	X	5 copies
LUC - Land Use Commission	X	X		Accepting Authority		Accepting Authority
Department of Agriculture	X	X		X		
DAGS - Department of Accounting and General Services	X	X	X	X	X	
DBEDT - Department of Business, Economic Development & Tourism	X	X		X	X	X
DBEDT - Strategic Industries Division	X	X	X	X		
DBEDT - Planning Office	X	X	X	X		
DOD - Department of Defense	X	X		X		
DOE - Department of Education	X	X	X	X	X	X
DHHL - Department of Hawaiian Home Lands	X	X		X		X
Department of Health (DOH)	X	X		3 copies		X
DOH, Clean Air Branch	X	X				
DOH, Safe Drinking Branch	X					
DOH, Wastewater Branch	X					
DOH, Noise Branch	X	X				
Department of Land and Natural Resources	X	X		X		X
DLNR, Historic Preservation Division	X	X		X		X

PALAMANUI – A HILUHILU DEVELOPMENT PROJECT

Final Environmental Impact Statement

Respondents and Distribution	Received and or Commented on earlier EIS reports	Received May 2004 EISNP	Comments Received on EISPN	Received July 2004 DEIS	Comments Received on July 2004 DEIS	Will Receive 2004 FEIS
DLNR, Land Management Division Planning and Technical Services, Engineering Branch, Hawai'i District Land Office	X				X	
DLNR, Division of Forestry & Wildlife	X					
DLNR, Na Ala Hele Program	X					
DLNR, Commission on Water Resources Management						
DLNR, Division of State Parks	X				X	
Department of Transportation (DOT)	X	X	X	X		X
DOT - Airports Division	X	X	X	X		
DOT - Highway Division	X	X				
Office of Hawaiian Affairs (OHA)	X	X	X	X		X
OHA – Kona Office	X	X		X		
University of Hawai'i	X	X		X		
University of Hawai'i – Environmental Center	X	X		4 copies	X	2 copies
University of Hawai'i Water Resources Research Center	X	X		X		
Disability & Communication Access Board	X	X	X	X	X	
C. County of Hawai'i						
Department of Parks and Recreation	X	X		X		X
Planning Department	X	X	X	X		X
Department of Public Works	X	X	X	X		X
Department of Water Supply	X	X		X		X
Office of Housing and Community Development	X	X		X		X
D. Elected Officials						
E. Media						
Honolulu Advertiser	X			X		X
Honolulu Star Bulletin	X			X		X
Hawai'i Tribune Herald	X			X		X
West Hawai'i Today	X			X		X
F. Public Libraries						
Hōlualoa Public Library	X			X		X
Kailua-Kona Public Library	X			X		X
Thelma Parker Memorial Public Library	X			X		X
Kealahou Public Library	X			X		X
Hilo Regional Library	X			X		X
Kaneohe Regional Library	X			X		X
Lihue Regional Library	X			X		X
Kahului Regional Library	X			X		X
Hawai'i Kai Regional Library				X		X
Pearl City Regional Library	X			X		X
Kaimuki Regional Library	X			X		X
DBEDT Library	X			X		X

PALAMANUI – A HILUHILU DEVELOPMENT PROJECT

Final Environmental Impact Statement

Respondents and Distribution	Received and or Commented on earlier EIS reports	Received May 2004 EISNP	Comments Received on EISPN	Received July 2004 DEIS	Comments Received on July 2004 DEIS	Will Receive 2004 FEIS
Hawai'i State Library	X			X		X
Legislative Reference Bureau	X			X		X
UH Mānoa Hamilton Library	X			X		X
UH Hilo Library	X			X		X

**G. Community Organizations, Non-Profit
Special Interest Organizations &
Individuals**

Bonnie Bator & Ohana	X					
Eden Pearl	X					
Hawaii Forest Industry Association	X					
Hawaiian Electric Company	X	X		X		
PASH President – Jerry Rothstein			X	X		
Josephine Keliipio			X	X		
Jerry Schneyere – Mākālei Estates					X	X
NELHA					X	X

**May 2004 Palamanui EISPN
Comment and Response Letters**

Written Comment and Response Letters Regarding the May 2004 EISPN

US Geological Service

DAGS

DBEDT

DOE

DOT – Director

DOT – Airports (email)

OHA

Hawaii County Planning

Hawaii County Public Works

PASH

Josephine Keliipio



United States Department of the Interior

U.S. GEOLOGICAL SURVEY
WATER RESOURCES
677 Ala Moana Blvd., Suite 415
Honolulu, HI 96813
Phone: (808) 587-2400/Fax: (808) 587-2401

June 25, 2004

Mr. George Atta, AICP
Chief Community Planner,
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

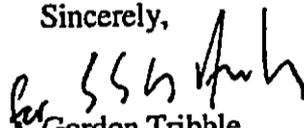
Dear Mr. Atta:

Subject: Palamanui – A Hiluhilu Development Project
Environmental Impact Statement Preparation Notice (EISPN)
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii
TMK: 3-7-2-05:01

Thank you for forwarding the subject EISPN for review and comment by the staff of the U.S. Geological Survey, Water Resources, Hawaii District office. We regret however, that due to prior commitments and lack of available staff, we are unable to review this document and are returning it for your future use.

We appreciate the opportunity to participate in the review process.

Sincerely,


Gordon Tribble
District Chief

Enclosure



July 12, 2004

Mr. Gordon Tribble, District Chief
United States Department of the Interior
U.S. Geological Survey
Water Resources
677 Ala Moana Boulevard, Suite 415
Honolulu, Hawaii 96813

**Subject: Palamanui – A Hiluhilu Development Project
EIS Preparation Notice (EISPN), May 2004
TMK: (3) 7-2-05:1
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii**

Francis S. Oda, Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Atta, AICP
Paul P. Chorney, AIA
Philip T. Cuccia
Pete C. Galvez, AIA
Sutobin Hallim
Roy A. Inouye, AIA, CSI
Charles Y. Kaneshiro, AIA
Stephen H. Kelly, AICP
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Dorna D. Pennington, AIA
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimari, AIA

Dear Mr. Tribble:

We have received your letter of June 25, 2004 regarding your inability to review the May 2004 Environmental Impact Statement Preparation Notice (EISPN) for Palamanui – A Hiluhilu Development Project.

Your comment letter and this response letter will be included in the Draft EIS. We appreciate your participation in the environmental review process.

Sincerely,

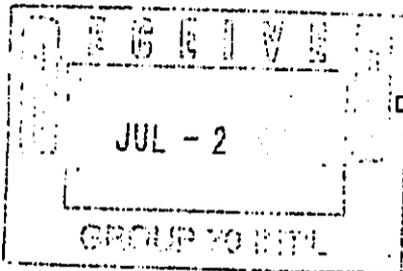
George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR



RUSS K. SAITO
COMPTROLLER
KATHERINE H. THOMASON
DEPUTY COMPTROLLER



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

(P)1231.4

JUL - 1 2004

Mr. George Atta, AICP, Chief Community Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Atta:

Subject: Palamami: Hiluhilu Development Project
Environmental Impact Statement Preparation Notice
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii
TMK: 3-7-2-05:01

Thank you for the opportunity to review the subject project's Environmental Impact Statement Preparation Notice. The project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

If there are any questions regarding the above, please have your staff call Mr. David DePonte of the Planning Branch at 586-0492.

Sincerely,

A handwritten signature in cursive script, appearing to read "Ernest Y. W. Lau".

ERNEST Y. W. LAU
Public Works Administrator

DD:jp

c: Ms. Genevieve Salmonson, OEQC



July 12, 2004

Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hido, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Atta, AICP
Paul P. Chomey, AIA
Phillip T. Cuccia
Pete C. Gelvez, AIA
Sutobin Halim
Roy A. Inouye, AIA, CSI
Charles Y. Kaneshiro, AIA
Stephen H. Kelly, AICP
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Donna D. Pennington, AIA
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

Mr. Ernest Y. W. Lau, Public Works Administrator
State of Hawaii
Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810

**Subject: Palamanui – A Hiluhilu Development Project
EIS Preparation Notice (EISPN), May 2004
TMK: (3) 7-2-05:1
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii**

Dear Mr. Lau:

We have received your letter on July 1, 2004, regarding your review of the May 2004 Environmental Impact Statement Preparation Notice (EISPN) for Palamanui – A Hiluhilu Development Project.

As you state, this project does not impact any of the Department of Accounting and General Services' project or existing facilities.

Your comment letter and this response letter will be included in the Draft EIS. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

RECEIVED AS FOLLOWS

JUL 08 09 11:08AM From: +1 808 587 3820 Page: 2/3 Date: 7/9/2004 11:15:46 AM
FROM: DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM TO: P. 002/003 P. 002



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

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
STEVE BRETSCHNEIDER
DEPUTY DIRECTOR

Strategic Industries Division
235 South Beretania Street, Lelopapa A Kamohameha Bldg., 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-3807
Fax: (808) 587-3820
Web site: www.hawaii.gov/dbedt/sid

July 6, 2004

Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Attn: George Atta

**Subject: Environmental Impact Statement Preparation Notice (EISPN)
Palamanui – A Hiluhilu Development Project
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii
Tax Map Key: 3-7-2-05:01**

Thank you for the opportunity to comment on the EISPN for Palamanui, a project in North Kona with residential units, mixed uses, an 18-hole golf course, and a university village center. Our comments are addressed to (1) State energy conservation goals, (2) energy saving design practices and technologies, and (3) recycling and recycled-content products.

(1) **Energy conservation goals.** Project buildings, activities, and site grounds should be designed with energy saving considerations. The mandate for such consideration 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 energy conservation through adoption of energy-efficient practices and technologies. We suggest that you contact Hawaii Electric Light Co, Inc., which may offer demand-side management rebates for energy efficient technologies.

(2) **Energy saving design practices and technologies.** Methods and technologies to be considered during the design phase of the project include:

- a. Use site shading, orientation, and use of naturally ventilated areas to reduce cooling load;
- b. Maximize use of day lighting;
- c. Use high efficiency compact fluorescent lighting;
- d. Exceed Hawaii County Energy Code requirements;

RECEIVED AS FOLLOWS

Group 70
July 6, 2004
Page 2

- e. Use technologies such as solar water heating systems, roof and wall insulation, radiant barriers, and energy efficient windows
 - f. Use solar parking lot lighting;
 - g. Use light color or "green" roofs;
 - h. Use roof and gutter to divert rainwater for landscaping;
 - i. Limit or eliminate the use of potable water for golf course irrigation;
 - j. Use landscaping for dust control and to minimize heat gain to area; and
 - k. Use photovoltaics, fuel cells and other renewable energy sources.
- (3) **Recycling and recycled-content products.**
- a. Develop a job-site recycling plan for the construction phase of the project and recycle as much construction and demolition waste as possible;
 - b. Incorporate provisions for recycling into the project – a collection system and space for bins for recyclable;
 - c. Specify and use products with recycled-content such as: steel, concrete aggregate fill, drywall, carpet and glass tile; and
 - d. Specify and use locally produced products such as plastic lumber, hydromulch, soil amendment and glass tile.

Please do not hesitate to call on us for clarification of any of the above.

Sincerely,



Maurice H. Kaya
Chief Technology Officer

c: OEQC



Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
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Pete C. Galvez, AIA
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Donna D. Pennington, AIA
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

July 12, 2004

Mr. Maurice H. Kaya, Chief Technology Officer
State of Hawaii
Department of Business, Economic Development and Tourism
235 S. Beretania Street, 5th Floor
Honolulu, Hawaii 96813

**Subject: Palamanui – A Hiluhilu Development Project
EIS Preparation Notice (EISPN), May 2004
TMK: (3) 7-2-05:1
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii**

Dear Mr. Kaya:

Thank you for your letter of July 6, 2004, regarding your review of the May 2004 Environmental Impact Statement Preparation Notice (EISPN) for Palamanui – A Hiluhilu Development Project.

We appreciate you calling attention to the following items: (1) State energy conservation goals, (2) energy saving design practices and technologies, and (3) recycling and recycled-content products. We have the following responses to your comments.

The Palamanui project will use Leadership in Energy and Environmental Design (LEED) sustainable design principles to maximize the efficient use of energy and resources throughout the project. LEED is a building rating system developed and managed by the U.S. Green Building Control which evaluates environmental performance from a whole building perspective over a building's life, providing a definitive standard for what constitutes a "green" building. LEED strategies include a multi-tiered comprehensive approach to provide the best results for the occupants, project developer, community and environment.

The synergistic effect of integrating energy efficient solutions in all three areas of Passive, Infrastructure and Building strategies multiplies its positive results.

Passive Strategies for Energy Efficiency: Palamanui will employ passive strategies, which are those indirect programs and design elements that encourage a reduction in energy consumption as well as provide opportunities for them to become mainstreamed and convenient for users. One such strategy is providing Public Transportation Access, be it a pedestrian friendly campus design, bicycle lane or shuttle bus. Reducing the number of cars and associated trips reduces dependence on energy and creates a cleaner environment. Also providing programs and facilities such as bicycle storage, changing rooms, and reduced parking capacities encourage the use of the alternatives that are energy efficient and environmentally friendly. Reducing and recycling our waste is also

Letter to Mr. Maurice H. Kaya
July 12, 2004
Page 2 of 3

a passive strategy for energy efficiency, for it reduces the quantity of new products needed and the production and transportation costs involved. Passive strategies will also include site design concepts and landscaping that will orient buildings for maximum use of cross ventilation and minimization of solar heat gain. Building orientation and location of trees, hedges and fences will consider these factors in their design.

Infrastructure Design Strategies for Energy Efficiency: The second category to be considered is in the design of the infrastructure. These are those renewable energy sources such as wind and solar, but through technological advances include more elaborate green power sources such as heat transfer and ice plants. Equally important is designing the infrastructure to reduce heat island loads through such measures as grass block parking lots and landscaping.

Building Design Strategies for Energy Efficiency: The last category is the specific building strategies that are the most visible in achieving an energy efficient design. Optimizing Energy Performance is the main approach for using energy efficient fixtures and facilities. Smart monitoring and switching allow facilities to activate when used and kept dormant when not. The building itself can be sheathed in an energy efficient skin as well as insulation to mitigate heat loss or gain. The building can be sited to maximize day lighting while minimizing exposure to radiant heat. Roofs can be designed to face south so that solar panels can be placed on the roofs. Also through building measurement and commissioning the buildings controls and equipment can be correctly calibrated and the maintenance staff trained to keep the facility running at optimum efficiency through the life cycle of the project. The use of solar energy for heating and co-generation for facilities where this optimizes energy performance will be considered. Photovoltaic uses will be considered where practicable. Lastly, showcasing all the elements that have rendered the facility, as energy efficient can become a learning vehicle for all occupants and visitors to become more environmentally conscious and make energy efficient choices daily.

Sustainable Building Techniques: Hawai'i law calls for efforts to conserve natural resources, promote efficient use of water and energy and encourage recycling of waste products. Planning a project to include sustainable design concepts can be a critical step toward meeting these goals. A sustainable building is built to minimize energy use, expense, waste, and impact on the environment. It seeks to improve the region's sustainability by meeting the needs of Hawai'i's residents and visitors today without compromising the needs of future generations. Compared to conventional projects, a resource efficient building project will:

- Use less energy for operation and maintenance;
- Contain less *embodied energy* (e.g. locally produced building products often contain less *embodied energy* than imported products because they require less energy-consuming transportation);

Letter to Mr. Maurice H. Kaya
July 12, 2004
Page 3 of 3

- Protect the environment by preserving/conserving water and other natural resources and by minimizing impact on the site and ecosystems;
- Minimize health risks to those who construct, maintain, and occupy the building;
- Minimize construction waste;
- Recycle and reuse generated construction wastes;
- Use resource-efficient building materials (e.g. materials with recycled content and low embodied energy, and materials that are recyclable, renewable, environmentally benign, non-toxic, low VOC (Volatile Organic Compound) emitting, durable, and that give high life cycle value for the cost);
- Provide the highest quality product practical at competitive (affordable) first and life cycle costs.

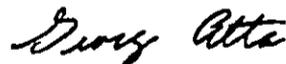
With the use of recycling and LEED sustainable design efforts, we estimate a 40% reduction in the amount of solid waste generated. Specifically, LEED technologies and strategies seek to minimize the waste generated by construction activity and building occupants. Strategies include provision of easily accessible areas that serve the entire building and are dedicated to the separation, collection and storage of materials for recycling including at a minimum, paper, glass, plastics, and metals. The provision and use of the collection bins should be able to accommodate a 75% diversion rate when easily accessible to custodial staff and recycling collection workers. In addition, LEED solutions regarding recycling and or salvaging of construction waste can result in at least a 50% (by weight) reduction of construction and land clearing waste hauled to the landfill.

In addition, Hiluhilu Development is consulting with HELC to discuss energy efficient strategies.

The master plan design will also consider designing a collection system for longer term recycling throughout the project site and in keeping with a more substantial lifestyle. The strategies listed in your letter will be considered in greater detail.

Your comment letter and this response letter will be included in the Draft EIS. We appreciate your participation in the environmental review process.

Sincerely,



George Atta, AICP
Chief Community Planner

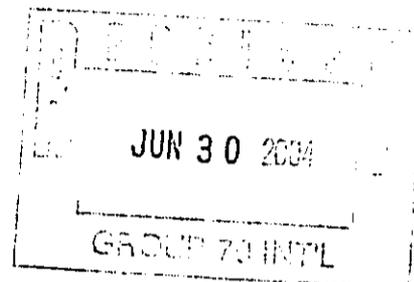
cc: Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

PATRICIA HAMAMOTO
SUPERINTENDENT



OFFICE OF THE SUPERINTENDENT

June 28, 2004

Mr. George Atta
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Subject: Environmental Impact Statement Preparation Notice
for Palamanui Residential Development
Kau, North Kona, Hawaii, TMK: 3-7-2-05:01

The Department of Education (DOE) has reviewed the Environmental Impact Statement Preparation Notice (EISPN) for the Palamanui residential community.

The DOE will request that the State Land Use Commission include a condition with the standard fair-share language used in decisions on land use boundary amendments. The proposed wording is:

The Applicant shall contribute to the development, funding, and/or construction of school facilities, on a fair-share basis, as determined by and to the satisfaction of the Department of Education. Terms of the contribution shall be agreed upon in writing by the Applicant and the Department of Education prior to obtaining county rezoning.

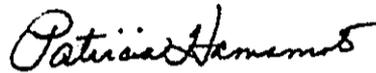
The DOE's formula for determining a school fair-share contribution is based on the number of residential units to be built. The DOE will need to know the number of single family units, including ohana units and duplexes, being planned, and the number of multi-family units with three or more adjoining units.

The DOE will also need clarification as to whether the proposed student housing, senior housing, or short-term faculty housing would permit the residence of school-aged students.

Mr. George Atta
Page 2
June 28, 2004

Should you have any questions, please call Rae M. Loui, Assistant Superintendent of the Office of Business Services, at 586-3444 or Heidi Meeker of the Facilities and Support Services Branch at 733-4862.

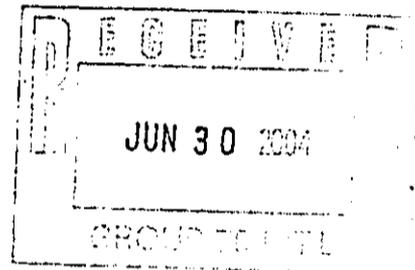
Very truly yours,



Patricia Hamamoto
Superintendent

PH:jmb

c: Rae M. Loui, OBS
Genevieve Salmonson, OEQC





GROUP 70
INTERNATIONAL

Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Atta, AICP
Paul P. Chomey, AIA
Philip T. Cuccia
Pete C. Gaivez, AIA
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Roy A. Inouye, AIA, CSI
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Donna D. Pennington, AIA
Christine M. Ruotola, AICP
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July 12, 2004

Ms. Patricia Hamamoto, Superintendent
State of Hawaii
Department of Education
P.O. Box 2360
Honolulu, HI 96804

**Subject: Palamanui – A Hiluhilu Development Project
EIS Preparation Notice (EISPN), May 2004
TMK: (3) 7-2-05:1
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii**

Dear Ms. Hamamoto:

Thank you for your letter of June 28, 2004 regarding your review of the May 2004 Environmental Impact Statement Preparation Notice (EISPN) for Palamanui – A Hiluhilu Development Project.

The following are offered in response to your comments:

Hiluhilu Development will contribute to the development, funding, and/or construction of school facilities, on a fair-share basis, as determined by and to the satisfaction of the Department of Education. Terms of the contribution will be agreed upon in writing by Hiluhilu Development and the Department of Education prior to obtaining counting rezoning. This language is explicitly stated in the project description, Chapter 3, of the Draft EIS report and expanded on in Appendix M of the Draft EIS report.

The Palamanui units subject to the DOE fair share calculation involve the planned 590 single-family housing units, 100 multi-family apartment housing units and 75 multi-family student housing units. We will review the policy of school-aged children in the senior housing and student housing units and clarify this in the process of discussions with the Department of Education. Non-residential development components of Palamanui like the research and development offices, commercial center, parks, preservation areas, and golf amenities are not subject to the DOE fair share calculations. The senior housing component planned for Palamanui is also exempt from the DOE fair share policy.

Fair share contributions are unresolved at this time. Hiluhilu Development will work with DOE to determine if the fair-share contribution should be paid in land, in fees, or a combination of both.

Letter to Ms. Patricia Hamamoto
July 12, 2004
Page 2 of 2

If DOE determines that land dedication is required, Hiluhilu Development would provide the land within the Palamanui project site. Such a requirement, however, would involve additional planning, site design analysis and negotiations with DOE to determine facility needs and siting requirements. If DOE determines that a fee in-lieu is required, clarification will be needed to clarify fair share calculations.

Attached is a general assessment of the DOE Fair Share Contribution for this project. This material is presented in the Draft EIS as Appendix M.

Your comments and this response letter will be included in the Draft EIS. We appreciate your participation in the environmental review process.

Sincerely,



George Atta, AICP
Chief Community Planner

cc: Guido Giacometti; Roger Harris; Alan Okamoto
Encl: Appendix M, DOE Fair Share Contribution

Appendix M
Department of Education (DOE) Fair Share Policy

Appendix M: DOE Fair Share Contribution

Appendix M: DOE Fair Share Contribution

DOE Fair Share Contribution

Hiluhilu Development will contribute to the development, funding and / or construction of school facilities, on a fair share basis, as determined by and to the satisfaction of the Department of Education. Terms of the contribution will be agreed upon in writing by Hiluhilu Development and the Department of Education prior to obtaining county subdivision and building permits.

Fair share contributions are unresolved at this time. Preliminary discussions with State Department of Education regarding current fair share policies and development towards an agreement are ongoing. Hiluhilu Development is currently reviewing the State Department of Education Fair Share program.

Hiluhilu Development will work with the DOE to determine if the fair-share contribution should be paid in land, in fees, or a combination of both. At minimum, Hiluhilu Development can expect to contribute a fair share towards the construction cost of future educational facilities.

If the DOE determines that land dedication is required, Hiluhilu Development would provide the land within the Palamanui project site. Such a requirement, however, would involve additional planning, site design analysis and negotiations with the DOE to determine facility needs and siting requirements. If the DOE determines that a fee in-lieu is required, clarification will be needed to clarify fair share calculations.

On July 11, 2003, the Department of Education (DOE) implemented a revised method for calculating the fair-share contribution it receives from the developers of new dwelling units in Hawaii. Certain aspects of the program remain the same:

- The contribution is only required for housing developments of 50 or more units;
- It doesn't apply to non-residential developments like shopping centers, hotels, or offices; and
- It doesn't apply to senior citizen housing.

The Palamanui project involves development of more than 50 housing units and therefore is subject to contributing a fair share in costs of providing needed public educational facilities to the state of Hawaii.

The Palamanui units subject to the DOE fair share calculations involve the planned 590 single family housing units, 100 multi family apartment housing units and 75 multi family student housing units. Non-residential development components of Palamanui like the research and development offices, commercial center, parks, preservation areas, and golf amenities are not subject to the DOE fair share calculations. The senior housing component planned for Palamanui is also exempt from the DOE fair share policy.

For projects that comprise 50 acres or more, the DOE determines whether to require a

- dedication of land
- payment of standard fee in-lieu
- or a combination of both.

Appendix M: DOE Fair Share Contribution

Hiluhilu Development will work with the DOE to determine if the fair-share contribution should be paid in land, in fees, or a combination of both. At minimum, Hiluhilu Development can expect to contribute some fair share towards the construction cost of future educational facilities.

Construction Cost Component: Hiluhilu Development can expect to contribute over 2 million dollars to support construction costs for future educational facilities in Kona. The construction cost component for the period of July 2003 to June 2005 is estimated at \$2,193,905. After July 1, 2005, construction cost component is estimated at \$3,656,370.

The DOE fee per single family unit in Kona is set at \$3,332 and the fee for a multi family unit in Kona is set at \$1,303 until June 2005. As of July 2005, the fee charged per single family unit in Kona will increase to \$5,553 and the fee charged per multi family unit in Kona will be \$2,172. Again, Palamanui proposes to develop 590 single family units and 175 multi family units.

Fair-Share Worksheet	Location of New Dwelling Units	Fee per Single-Family Unit	Fee per Multi-Family Unit	Benefit District
July '03 to June '05	Kona	\$3,332	\$1,303	Hawaii
July '05	Kona	\$5,553	\$2,172	Hawaii

Land dedication. If the DOE determines that land dedication is required, Hiluhilu Development can expect to dedicate 5.9 acres of land.

The acreage to be dedicated by the developer is calculated using the following formula: (0.00899 acres x proposed number of single-family dwellings) + (0.00356 acres x proposed number of multi-family dwellings) = total school acres required. Where 0.00899 is the number of school acres required to cover the number of students generated by one new single-family, townhouse, or duplex dwelling unit and 0.00356 is the number of school acres required to cover the number of students in one new multi-family dwelling unit. Where 590 single family dwelling units and 175 multi family dwelling units are planned at Palamanui.

Hiluhilu Development will provide the land within the Palamanui project site. Such a requirement would involve further negotiation with the DOE to determine facility needs and revisions to the site plan to accommodate the school facility.

Fee in-lieu: If DOE determines that a fee in-lieu is required, the fee amount will involve the actual appraised value of the project's land.

The fee in-lieu calculation involves the (acres per single family unit of 0.00899 x the 590 single family units proposed x the average cost per acre of the subdivision per the developers' appraisal) + the (acres per multi family unit of 0.00356 x the 175 multi family units proposed x the average cost per acre of the subdivision per the developers' appraisal). The last variable is unclear as to how it is to be determined.

Appendix M: DOE Fair Share Contribution

The policy guidelines suggest that the actual appraised value of the project's land will be used. The 2004 assessed market land value of the property according to the Hawaii County Real Property Tax Office is \$1,887,000 for the parcel. This figure reflects the existing land use designations of agriculture and conservation. If we use this figure and divide it over the total 725 acres of the parcel, the average cost per acre of the subdivision is \$2,603. Hiluhilu Development can expect to pay a Fee In Lieu in the amount of \$15,427.

We do not know what the market value of the parcel will be after the lands are reclassified to an Urban designation.

The DOE worksheet involves the average cost per acre of the subdivision per the developers' appraisal. If we define the "developer's cost per acre" to mean the cost of an acre of land ready for building with all services to the boundary etc, under this definition, Hiluhilu Development can expect to pay a Fee In-Lieu in the amount of \$761,939. This assumes \$93,200,000 cost to ready the residential components divided by 725 total acres for a sum of \$128,550 per acre.

To reiterate, Hiluhilu Development is prepared to enter into discussion with the Department of Education to determine a fair share contribution to support future public education facilities in Kona. Some of the variables in the DOE formula need further clarification.

The following represent estimates of fair share contributions towards educational facilities:

Construction Cost Component:	\$2,193,905	Prior to July 2005
	\$3,656,370	(After July 2005)
Land Component:	5.9 acres	
Fee In Lieu (unclear)	range from \$15,427 to \$761,939	(unclear)
Single Family units:	590	
Multi Family units:	175	

Implementation Schedule: The DOE is phasing in the revisions of the fair share policy. For the two-year period starting from initial implementation (Phase I) the amount of the contribution covering school construction costs will be approximately 30% of the per pupil cost for school construction. Two years after implementation (Phase II), the school construction cost will increase to approximately 50% of the per pupil construction costs. There are no plans for further adjustments beyond the date for 50% implementation. These phases have been taken into account in the calculations for Hiluhilu's estimated fair share contributions.

Hiluhilu recognizes that a signed, written Educational Contribution Agreement can be finalized at any point prior to the deadline imposed by conditions of the State Land Use Commission or the counties.

POWERED BY AKANDA

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**HAWAII COUNTY
REAL PROPERTY
TAX OFFICE**

Home Property Search

RECORD DETAILS

Owner Address Parcel Number Advanced

- Parcel Data
- Sales
- Permits
- Land
- Residential
- Commercial
- Det. Structures
- Sketch
- ▶ Values
- Tax Bill
- 2003 Tax History
- 2002 Tax History
- 2001 Tax History
- 2000 Tax History
- 1999 Tax History
- Map

720050010000

NA

HILUHILU DEVELOPMENT LLC

Values - 2004 Assessment Yr

Property Class	Override Class	Market Land Value	Dedicated / Use Value	Land Exemption	Net Taxable Land Value	Assessed Building Value	Building Exemption	Net Taxable Building Value
Parcel Summary		\$1,887,000	\$0	\$0	\$1,887,000	\$0	\$0	\$0
Totals		\$1,887,000	\$0	\$0	\$1,887,000	\$0	\$0	\$0
AGRICULTURAL		\$1,629,300	\$0	\$0	\$1,629,300	\$0	\$0	\$0
CONSERVATION		\$257,700	\$0	\$0	\$257,700	\$0	\$0	\$0

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Table A: July '03 to June '05

	Location of New Dwelling Units	Fee per Single-Family Unit	Fee per Multi-Family Unit	Benefit District	
Oahu	Honolulu	\$2,541	\$997	Honolulu	
	Ewa	\$2,541	\$997	Central	
	Wahiawa	\$2,739	\$1,074	Central	
	Waialua	\$2,936	\$1,150	Central	
	Koolaupoko	\$2,541	\$997	Windward	
	Koolauloa	\$2,936	\$1,150	Windward	
	Ewa	\$2,541	\$997	Leeward	
	Waianae	\$2,936	\$1,150	Leeward	
	Hawaii	Hilo	\$3,134	\$1,227	Hawaii
		Puna	\$3,332	\$1,303	Hawaii
Kona		\$3,332	\$1,303	Hawaii	
Hamakua		\$3,332	\$1,303	Hawaii	
South Kohala		\$3,332	\$1,303	Hawaii	
North Kohala		\$3,529	\$1,380	Hawaii	
Pohakuloa		\$3,529	\$1,380	Hawaii	
Kau		\$3,727	\$1,457	Hawaii	
Maui	Waituku	\$3,134	\$1,227	Maui	
	Makawao	\$3,529	\$1,380	Maui	
	Lahaina	\$3,727	\$1,457	Maui	
	Hana	\$3,924	\$1,533	Maui	
Molokai	Molokai	\$3,727	\$1,457	Molokai	
Lanai	Lanai	\$3,924	\$1,533	Lanai	
Kauai	Lihue	\$3,134	\$1,227	Kauai	
	Koloa	\$3,332	\$1,303	Kauai	
	Kawaihau	\$3,332	\$1,303	Kauai	
	Waimea	\$3,529	\$1,380	Kauai	
	Hanalei	\$3,529	\$1,380	Kauai	

Fair-Share Worksheet
(Enter data into yellow cells only)

July '03 to June '05

Enter number of single-family units:

Enter number of multi-family units:

Enter fee per single-family unit: Varies by Location. See Table A Below.

Enter fee per multi-family unit: Varies by Location. See Table A Below.

A. Less Than 50 Acres (Fee In-Lieu)

Land Component (Uses Standard Land Value of \$100,000 per acre):

Fee per single-family unit: \$899
Fee per multi-family unit: \$356

Total Land Component Amount: \$592,710
Total Construction Cost Component: \$2,193,905

TOTAL FAIR-SHARE REQUIREMENT: \$2,786,615

B. More than 50 Acres and DOE Determines That Land is Required

Land Component:

Acres per single-family unit: 0.00899
Acres per multi-family unit: 0.00356

Total Acres Required: 5.9

Construction Cost Component: \$2,193,905

TOTAL FAIR-SHARE REQUIREMENT: 5.9 Acres plus \$2,193,905

C. More than 50 Acres and DOE Determines That Land is Not Required

Enter average cost per acre of the subdivision (per developer's appraisal):
assumes 2004 Hawaii County property assessment of \$1,887,000
divided by 725 total acres

Land Component (fee in-lieu): \$15,427
Construction Cost Component: \$2,193,905

TOTAL FAIR-SHARE REQUIREMENT: \$2,209,332

Fair-Share Worksheet
(Enter data into yellow cells only)

July '03 to June '05

Enter number of single-family units:

Enter number of multi-family units:

Enter fee per single-family unit: Varies by Location. See Table A Below.

Enter fee per multi-family unit: Varies by Location. See Table A Below.

A. Less Than 50 Acres (Fee In-Lieu)

Land Component (Uses Standard Land Value of \$100,000 per acre):

Fee per single-family unit: \$899
Fee per multi-family unit: \$356

Total Land Component Amount: \$592,710
Total Construction Cost Component: \$2,193,905

TOTAL FAIR-SHARE REQUIREMENT: \$2,786,615

B. More than 50 Acres and DOE Determines That Land is Required

Land Component:

Acres per single-family unit: 0.00899
Acres per multi-family unit: 0.00356

Total Acres Required: 5.9

Construction Cost Component: \$2,193,905

TOTAL FAIR-SHARE REQUIREMENT: 5.9 Acres plus \$2,193,905

C. More than 50 Acres and DOE Determines That Land is Not Required

Enter average cost per acre of the subdivision (per developer's appraisal):
\$93 million to ready residential component / 725 total acres

Land Component (fee in-lieu): \$761,939
Construction Cost Component: \$2,193,905

TOTAL FAIR-SHARE REQUIREMENT: \$2,955,844

Table A: July '05

	Location of New Dwelling Units	Fee per Single-Family Unit	Fee per Multi-Family Unit	Benefit District	
Oahu	Honolulu	\$4,236	\$1,662	Honolulu	
	Ewa	\$4,236	\$1,662	Central	
	Wahiawa	\$4,565	\$1,790	Central	
	Waialua	\$4,894	\$1,917	Central	
	Koolaupoko	\$4,236	\$1,662	Windward	
	Koolauloa	\$4,894	\$1,917	Windward	
	Ewa	\$4,236	\$1,662	Leeward	
	Waianae	\$4,894	\$1,917	Leeward	
	Hawaii	Hilo	\$5,223	\$2,045	Hawaii
		Puna	\$5,553	\$2,172	Hawaii
Kona		\$5,553	\$2,172	Hawaii	
Hamakua		\$5,553	\$2,172	Hawaii	
South Kohala		\$5,553	\$2,172	Hawaii	
North Kohala		\$5,882	\$2,300	Hawaii	
Kau		\$6,211	\$2,428	Hawaii	
Maui		Wailuku	\$5,223	\$2,045	Maui
	Makawao	\$5,882	\$2,300	Maui	
	Lahaina	\$6,211	\$2,428	Maui	
	Hana	\$6,540	\$2,555	Maui	
	Molokai	Molokai	\$6,211	\$2,428	Molokai
Lanai	Lanai	\$6,540	\$2,555	Lanai	
Kauai	Lihue	\$5,223	\$2,045	Kauai	
	Koloa	\$5,553	\$2,172	Kauai	
	Kawaihau	\$5,553	\$2,172	Kauai	
	Waimea	\$5,882	\$2,300	Kauai	
	Hanalei	\$5,882	\$2,300	Kauai	

Fair-Share Worksheet
(Enter data into yellow cells only)

July'05

Enter number of single-family units:

Enter number of multi-family units:

Enter fee per single-family unit: Varies by Location. See Table A Below.

Enter fee per multi-family unit: Varies by Location. See Table A Below.

A. Less Than 50 Acres (Fee In-Lieu)

Land Component (Uses Standard Land Value of \$100,000 per acre):

Fee per single-family unit: \$899
Fee per multi-family unit: \$356

Total Land Component Amount: \$592,710
Total Construction Cost Component: \$3,656,370

TOTAL FAIR-SHARE REQUIREMENT: \$4,249,080

B. More than 50 Acres and DOE Determines That Land is Required

Land Component:

Acres per single-family unit: 0.00899
Acres per multi-family unit: 0.00356

Total Acres Required: 5.9

Construction Cost Component: \$3,656,370

TOTAL FAIR-SHARE REQUIREMENT: 5.9 Acres plus \$3,656,370

C. More than 50 Acres and DOE Determines That Land is Not Required

Enter average cost per acre of the subdivision (per developer's appraisal):
\$1,887,000 2004 market value of parcel / 725 acres of parcel

Land Component (fee in-lieu): \$15,427
Construction Cost Component: \$3,656,370

TOTAL FAIR-SHARE REQUIREMENT: \$3,671,797

Fair-Share Worksheet
(Enter data into yellow cells only)

July'05

Enter number of single-family units:

Enter number of multi-family units:

Enter fee per single-family unit: Varies by Location. See Table A Below.

Enter fee per multi-family unit: Varies by Location. See Table A Below.

A. Less Than 50 Acres (Fee In-Lieu)

Land Component (Uses Standard Land Value of \$100,000 per acre):

Fee per single-family unit: \$899
Fee per multi-family unit: \$356

Total Land Component Amount: \$592,710
Total Construction Cost Component: \$3,656,370

TOTAL FAIR-SHARE REQUIREMENT: \$4,249,080

B. More than 50 Acres and DOE Determines That Land is Required

Land Component:

Acres per single-family unit: 0.00899
Acres per multi-family unit: 0.00356

Total Acres Required: 5.9

Construction Cost Component: \$3,656,370

**TOTAL FAIR-SHARE REQUIREMENT: 5.9 Acres plus
\$3,656,370**

C. More than 50 Acres and DOE Determines That Land is Not Required

Enter average cost per acre of the subdivision (per developer's appraisal):
\$93 million to ready residential component / 725 total acres

Land Component (fee in-lieu): \$761,939
Construction Cost Component: \$3,656,370

TOTAL FAIR-SHARE REQUIREMENT: \$4,418,309

An Explanation of Revisions to DOE Fair Share Contribution Formula

On July 11, 2003, the Department of Education (DOE) implemented a revised method for calculating the fair-share contribution it receives from the developers of new dwelling units in Hawaii. Certain aspects of the program will remain the same:

- the contribution is only required for housing developments of 50 or more units;
- it doesn't apply to non-residential developments like shopping centers, hotels, or offices; and
- it doesn't apply to senior citizen housing.

Contributions will continue to be deposited in trust accounts reserved for construction, repair or expansion of school facilities in the school complex area where the new housing is located.

Prior to the revision, the DOE collected either \$1,011 per unit or a contribution of land for new school sites. The amount was based on the average per pupil cost of land for a school site during the 1990's.

Major Changes

There are three major changes with the revised program:

- 1) contributions will depend on whether the new homes are single-family or multi-family;
- 2) contributions will depend on the geographic location of the new housing; and
- 3) the calculation of the contribution amount will be based on the cost of constructing school facilities as well as land costs.

Single Family vs. Multi-Family

The revisions of the fair-share program are based on the recommendations of a study commissioned by the Department of Education and completed in 2001. The "School Fair Share Contribution Study" (conducted by Group 70 International of Honolulu, Hawaii and Duncan Associates, of Austin, Texas) recommended one contribution amount for single-family housing and a separate, lower amount, for multi-family housing. The recommendation was based on national and statewide data that indicate the average number of children per multi-family dwelling is considerably less than the number of children living in single-family housing. The developer of 100 units of multi-family housing can expect to make a smaller contribution than a neighboring developer of 100 units of single-family housing because the multi-family project is expected to generate fewer students.

Geographic Location

The second major change in the revised program was adjusting contribution amounts to account for regional differences in construction costs. The DOE is using the Department of Accounting and General Services (DAGS) Regional Cost Factors that divides the state into 26 districts and gives each district a construction cost factor that is a multiple of the cost of construction in Honolulu. The Lanai area has a construction cost factor that is 35% more than the cost of the same construction in central Honolulu. Fair-share contributions from Lanai housing developments will reflect the higher construction cost. Schools across the state will have roughly the same amount of construction buying power when we use fair-share contributions to improve their campuses.

Construction Costs

The previous fair-share contribution amount was based solely on the cost of school land. Developers were able to pay with land for school campuses or fees-in-lieu of land. The revised fair-share amount is based on both the cost of land and the cost of school construction. Developers of projects on less than 50 acres will pay fees-in-lieu of land and construction. The DOE will work with developers of larger projects to determine if the fair-share contribution should be paid in land, in fees, or a combination of both.

The Implementation Schedule

The DOE is following the recommendation of the *School Fair Share Contribution Study* to phase-in the revision. For the two-year period starting from initial implementation (Phase I) the amount of the contribution covering school construction costs will be approximately 30% of the per pupil cost for school construction. Two years after implementation (Phase II), the school construction cost will increase to approximately 50% of the per pupil construction costs. There are no plans for further adjustments beyond the date for 50% implementation.

Developers can meet with the DOE to discuss fair-share contribution requirements at any time in their development phase. A signed, written Educational Contribution Agreement can be finalized at any point prior to the deadline imposed by conditions of the State Land Use Commission or the counties.

Financial Summary of Fair Share Contributions

The DOE has received a total of \$1.02 million dollars in fair-share cash contributions from 11 different residential projects. It has also received 135 acres of land for schools. There are signed agreements with other landowner/developers that should bring in an additional \$3.84 million dollars and 225 acres of land when the residential units in those projects are sold.

A Fact Sheet on Revisions to the Educational Fair Share Contribution

Part 1 - Formula Revisions

On July 11, 2003, the Department of Education (DOE) implemented a revised method for calculating the Fair-Share contribution it receives from the developers of new dwelling units in Hawaii. Certain aspects of the program will remain the same:

- the contribution is only required for housing developments of 50 or more units;
- it doesn't apply to non-residential developments like shopping centers, hotels, or offices; and
- it doesn't apply to senior citizen housing.

Contributions will continue to be deposited in trust accounts reserved for construction, renovation or expansion of school facilities in the school complex area where the new housing is located.

Prior to the revision, the DOE collected either \$1,011 per unit or a contribution of land for new school sites. The amount was based on the average per pupil cost of land for a school site during the 1990's.

Major Changes

There are three major changes with the revised program:

- 1) contributions will depend on whether the new homes are single-family or multi-family;
- 2) contributions will depend on the geographic location of the new housing; and
- 3) the calculation of the contribution amount will be based on the cost of constructing school facilities as well as land costs.

Single Family vs. Multi-Family or Accessory Units

The revisions of the Fair-Share program are based on the recommendations of a study commissioned by the Department of Education and completed in 2001. The "*School Fair Share Contribution Study*" (conducted by Group 70 International of Honolulu, Hawaii and Duncan Associates, of Austin, Texas) recommended one contribution amount for single-family housing and a separate, lower amount, for multi-family housing. The recommendation was based on national and statewide data that indicate the average number of children per multi-family dwelling is considerably less than the number of children living in single-family housing. The developer of 100 units of multi-family housing can expect to make a smaller contribution than a neighboring developer of 100 units of single-family housing because the multi-family project is expected to generate fewer students.

For the purposes of determining a Fair-Share contribution, a single family unit is the primary residence on a site, or two similar size units with a shared roof or common walls, otherwise called a duplex. A multi-family unit is three or more units that share common walls or roof. An accessory residential unit, or ohana unit, shares the same site with a primary residence but is smaller in square footage. Ohana or accessory units can be attached to the primary residence or

free standing. Accessory units are considered the same as multi-family units in calculating a Fair-Share contribution.

Geographic Location

The second major change in the revised program was adjusting contribution amounts to account for regional differences in construction costs. The DOE is using the Department of Accounting and General Services (DAGS) Regional Cost Factors that divides the state into 26 districts and gives each district a construction cost factor that is a multiple of the cost of construction in Honolulu. The Lanai area has a construction cost factor that is 35% more than the cost of the same construction in central Honolulu. Fair-Share contributions from Lanai housing developments will reflect the higher construction cost. Schools across the state will have roughly the same amount of construction buying power when we use Fair-Share contributions to improve their campuses.

Construction Costs

The previous Fair-Share contribution amount was based solely on the cost of school land. Developers were able to pay with land for school campuses or fees-in-lieu of land. The revised Fair-Share amount is based on both the cost of land and the cost of school construction. Developers of projects on less than 50 acres will pay fees-in-lieu of land and construction. The DOE will work with developers of larger projects to determine if the Fair-Share contribution should be paid in land, in fees, or a combination of both.

Timing

The DOE is following the recommendation of the *School Fair Share Contribution Study* to phase-in the revision. For the two-year period starting from initial implementation (Phase I) the amount of the contribution covering school construction costs will be discounted 40%. Two years after implementation, July 1, 2005, the school construction cost will increase.

Developers can meet with the DOE to discuss Fair-Share contribution requirements at any time in their development phase. A signed, written Educational Contribution Agreement can be finalized at any point prior to the deadline imposed by conditions of the State Land Use Commission or the counties.

Financial Summary of Fair-Share Contributions

The DOE has received a total of \$1.02 million dollars in Fair-Share cash contributions from 11 different residential projects. It has also received 135 acres of land for schools. There are signed agreements with other landowner/developers that should bring in an additional \$3.84 million dollars and 225 acres of land when the residential units in those projects are sold.

Part 2 - The Process

Policy and Practice

DOE Policy

The basis for requesting a contribution for schools is DOE Policy No. 6700: Facilities Standards Policy. The applicable subsection (f.) is titled: "Assistance for school sites and facilities requirements" and permits the DOE to request assistance from landowners or developers whenever necessary.

State/County

The DOE makes a request to the State Land Use Commission (LUC) or county planning departments if, after reviewing a Draft Environmental Impact Statement (DEIS) or application to change zoning or other land use, DOE determines the development will impact area schools.

HCDA

Developments that are located in areas under the control of the Hawaii Community Development Authority (HCDA) make contributions for public facilities as a condition for receiving development permits. Although schools are considered public facilities, the HCDA does not require developers to sign agreements with the DOE for school contributions. The HCDA has indicated a willingness to use its public facility funds for the design and construction of a new school at the site of the former Pohukaina School site in Kakaako.

DHHL

The Department of Hawaiian Home Lands (DHHL) projects on lands held in the Home Lands Trust are not required to go through the standard state and county land approval processes. So the DOE is unable to ask the LUC or counties to impose conditions for school contributions. However the DOE has asked DHHL to consider making contributions to schools directly impacted by new DHHL residential development. The requests are being considered by the Hawaiian Homes Commission.

Imposition of Conditions

The standard state or county condition requiring a Fair-Share contribution always requires a written agreement signed between the petitioner and the DOE. Generally, in the document, the parties mutually agree that the contribution satisfies a particular condition set by the LUC or county. Some agreements signed in advance of land use decisions spell out that the contribution will meet the DOE Fair-Share requirements for any public education condition set by county or state government.

There have been some development projects that received state land use approvals before school Fair-Share requirements were requested. A few of these projects have then had to meet Fair-Share conditions imposed at the county level when they have requested zoning or other land use changes.

Fair-Share conditions generally require that a written agreement be signed by the developer/petitioner and the DOE prior to a specified development "event." In the past the event has included "final plan approval", "obtaining county zoning", or "obtaining building permits."

Application

Excluded Property

The DOE only requests Fair-Share school contributions for new residential units. No contributions are requested for commercial or industrial land uses. The DOE is only able to request conditions on those projects that require state or county land use approvals. There is no comprehensive way to request conditions on individual homes on property already approved for housing. No contributions are requested for remodeling or repair work of existing housing, unless such work involves the creation of additional units and the total number of units in the application for land use change is greater than 50. If 50 or more new housing units are being created out of a structure that wasn't previously housing, a Fair-Share contribution would be requested.

Because of the difficulty and resources needed to identify, track and administer small projects; and the reduced impact on schools, the request for Fair-Share contributions only applies to projects of 50 or more units. The unit count includes accessory or 'ohana units. For example, if a subdivision project with 25 single family lots applies for land use approval to build 25 primary units and 25 accessory units, the DOE would request a contribution. If that 25-lot project has two lots that are prohibited from having accessory units, and the maximum number of residential units to be built is 48, the DOE would not request a contribution. The determination of the likely number of total residential units often relies on an open and honest discussion between the DOE and the landowner/developer.

No requests for Fair-Share contributions are made for projects with a written prohibition of children under the age of 18. This includes housing for the elderly, student dorms, or other types of group housing. Fair-Share would apply to student housing designed for families.

Fair-Share contributions are not requested for hotels or other projects where the units are expected to generate payment of the transient accommodation room tax. There have always been residential projects in Hawaii that were initially designed and marketed to part-time residents but over time these projects have become year round homes for resident families. The DOE has only one opportunity at the land approval stage to request contributions to offset the school impacts of a project throughout its existence as a residence.

Payment

The DOE sets the terms of the school payment with the project developer in the written educational contribution agreement. In most recent cases, where a cash contribution is required, payment is made upon the closing of the sale of each lot or residential unit. In some cases, payments are grouped according to the number of units sold, for instance, each check covers the payments for 100 units sold.

Contributions of land are synchronized with the schedules for construction of schools on the donated sites.

Enforcement of conditions

When a developer signs an agreement with the DOE, there is generally an acknowledgement that payments must be made and we do not experience difficulty in the payment process. Where the condition set by the state or county does not require compliance prior to a specific development event, such as rezoning or issuance of building permits, the DOE faces great difficulty in enforcing compliance. That is one of the reasons that the wording of the Fair-Share condition is so important to the DOE. In cases where disagreements arise, the DOE's only option is to ask the state or county to enforce the condition they placed on the project.

In some cases, due to the complexity of land changing ownership and different conditions placed on different parcels of the same project, a developer can unintentionally overlook the existence of a school contribution requirement. For LUC approvals, an annual report states how the developer is meeting each stated condition. If the condition requires a written agreement, the annual report can easily state whether that condition has been met or not.

In recent years when there has been a question over a project developer meeting the Fair-Share condition set by the LUC, the LUC has asked both the developer and the DOE to appear before them.

Transition

The formula for calculating the amount of Fair-Share contribution request by the DOE was revised on July 11, 2003. The revision has no effect on any completed educational contribution agreements. The amounts set in those agreements will not change. For projects which have not yet begun discussion with the DOE, the process has not changed. Developers can meet with the DOE at any time in the development process to get an estimate of the amount of Fair-Share contribution that will be requested. A written educational contribution agreement can be signed at anytime, provided that sufficient detail about the project is available.

Developers of projects which have to meet both state and county conditions can settle on an agreement that the DOE will certify meets both sets of conditions. Projects that do not have a state imposed educational Fair-Share condition will still have to come to an agreement with the DOE on educational conditions placed by the counties.

Part 3 - Working the Formula

DOE's Fair-Share Contribution consists of a land component and a construction cost component which, when added together, comprise the total Fair-Share Contribution amount. The specific requirements for each proposed development is determined by the procedures outlined below and will be documented in a written Fair-Share Agreement between each developer and DOE.

Land Component

A. Projects Comprised of Less than 50 Acres

Projects comprised of less than 50 acres shall pay a standard fee in-lieu of land. The fee is \$899 per single-family unit and \$356 per multi-family unit. These dollar amounts are determined by first calculating the school acres required per housing unit. The number of school acres required per housing unit is calculated by multiplying the number of public school students generated by each unit of housing by the actual number of acres per student in 16 new DOE schools built between 1988 and 1998.

$$(\# \text{ of public school students per housing unit}) \times (\text{actual school acres per student}) = \text{school acres required per housing unit}$$

The school acres required per housing unit is then multiplied by \$100,000, the average cost of an acre of school land from 1988 to 1998, to determine the fee in-lieu amount.

$$(\text{school acres required per housing unit}) \times (\$100,000) = \text{fee in-lieu of land}$$

Multi-family projects generate roughly 40% of the number of students generated in a single-family, townhouse or duplex project containing the same number of units. All calculations take that difference into account.

B. Projects Comprised of 50 Acres or More

For projects comprised of 50 acres or more, DOE determines whether to require a dedication of land, payment of a standard fee in-lieu, or a combination of both.

If DOE determines that a fee in-lieu is required, the fee amount shall be calculated as prescribed in Section A. above but the actual appraised value of the project's land will be used, instead of the \$100,000 used in calculations for projects under 50 acres in size.

If DOE determines that a land dedication is required, the acreage to be dedicated by the developer is calculated using the following formula:

$$(0.00899 \text{ acres} \times \text{proposed number of single-family dwellings}) + (0.00356 \text{ acres} \times \text{proposed number of multi-family dwellings}) = \text{total school acres required}$$

where 0.00899 is the number of school acres required to cover the number of students generated by one new single-family, townhouse, or duplex dwelling unit and 0.00356 is the number of school acres required to cover the number of students in one new multi-family dwelling unit.

For example, 100 new single-family units would require 0.899 acres of school land while 1,000 new single-family units would require 8.99 acres. Likewise, 100 new multi-family units would require 0.356 acres of school land while 1,000 new multi-family units would require 3.56 acres.

Construction Cost Component

Currently during Phase I, the Honolulu construction cost component of the Fair-Share Contribution is \$2,541 per single-family unit and \$997 per multi-family unit. On July 1, 2005, Phase II begins and the contribution amounts will be \$4,236 per single-family unit and \$1,662 per multi-family unit. For the purposes of formula, the Phase II figures were used, and then the figures were reduced for the two-year Phase I period.

The Honolulu figures are adjusted according to geographic region to account for higher construction costs in outlying areas. The construction cost component is based on the actual costs of building the permanent (not portable) facilities of 15 schools constructed from 1989 to 1998. It also factors in a credit for state taxes that will be paid by new residential units.

The 1989 to 1998 actual school construction cost per new housing unit used in the Fair-Share formula is \$13,169 for single-family, townhouse, and duplex homes and \$5,102 for multi-family homes (in Honolulu, which is the baseline district for cost purposes). These figures are obtained by multiplying the average school construction cost per student by the number of students generated by each new housing unit.

The formula then provides a revenue credit based on the actual average amount of funding for construction provided by the State Legislature in recent years. Use of the credit eliminates the possibility that a new housing project pays twice for the same facility; once with Fair Share and again with taxes. The credit amount is the present value of a stream of \$608 per year (the Legislature's past average annual funding per student) over 25 years (the life span of a school facility). The credit of \$8,156 per student is then multiplied by the number of students generated by each new unit, resulting in a single-family revenue credit of \$4,698 per unit and a multi-family credit of \$1,778 per unit.

$$(net\ school\ construction\ costs\ per\ new\ housing\ unit) - (revenue\ credit\ per\ unit) = (net\ cost\ per\ unit)$$

The single-family school construction cost of \$13,169 is reduced by the revenue credit of \$4,698, leaving a net cost of \$8,471. The multi-family school construction cost of \$5,102 is reduced by the revenue credit of \$1,778, leaving a net cost of \$3,324.

The net cost is then halved, based on the assumption that net cost of new schools should be shared equally between the new development and taxpayers statewide. The resulting figure is the construction cost component of the Fair-Share Contribution: \$4,236 per single-family unit and \$1,662 per multi-family.

$$(net\ cost\ per\ unit) / (2) = (construction\ cost\ component)$$

The construction cost component is adjusted based on the location of the housing project. Single-family fees range from \$4,236 in Honolulu to \$6,540 in Hana, Maui or Lanai. See the attached Table B for the Phase II amounts. For the two year period from July 2003 to July 2005, the amounts were reduced by 40% to serve as a graduated method of introducing the new contribution amounts. Phase I amounts are listed in Table A.

The land and construction cost components of the Fair-Share Contribution will be collected according to terms specified in the Fair-Share Agreement between the developer and DOE. Fees will be deposited into a trust fund designated for the benefit district where the new housing is being built. The state is divided into nine benefit districts: Honolulu, Central, Leeward, Windward, Hawai'i, Maui Island, Molokai, Lanai and Kauai. The fees collected in the trust fund will only be used to construct, expand or improve schools within the benefit district.

What's the cost of school facilities for a new subdivision?

Welcome to Maui 2030, a planned community, in Lahaina, with a mixture of residential, recreational, open space, golf course, public/quasi-public and commercial uses. The community will contain 857 single family homes and 1,154 multi-family homes on a total of 1,154 acres.

Maui 2030's estimated stabilized student population:

375 students in grades K-8	172 students in grades 6-8	218 students in grades 9-12
-------------------------------	-------------------------------	--------------------------------

DOE's cost to provide Maui 2030 with school facilities:

	<u>Land</u>	<u>Construction</u>
1 elementary school	12.0 acres	\$25 million
10% of a middle school	1.8 acres (10% of 18 acres)	\$4.0 (10% of 40 million)
9% of a high school	4.5 acres (9% of 50)	\$8.1 (9% of 90 million)
TOTAL:	18.3 acres	\$37.1 million

The developer/homeowners' Share of school facility costs
at Maui 2030

	Land in acres	Construction in million \$
DOE's Total Cost to serve the development	18.3	37.1
Fair-share Contribution from the developer/homeowners	11.8	4.79
Developer/homeowners' share	65.0% (2/3)	12.9% (less than 1/8)
Hawaii taxpayers' share	35.0%	87.1%

The land and construction cost variables used in the formula

The land calculation (11.8 acres):

Multiply the number of single family units by .00899

Multiply the number of multi-family units by .00356

Where .00899 is # of school acres per new single-family unit needed

Generated by the number of public school children per single-family unit

multiplied by

the # of acres per student provided in the 16 DOE schools built from '89 to '98.

and

.00356 is # of school acres per new multi-family unit needed

Generated by the number of public school children per multi-family units

multiplied by

the # of acres per student provided in the 16 DOE schools built from '89 to '98.

The construction cost calculation (4.79 million):

Multiply the number of single-family units by \$3,727 (Lahaina area amt.)

Multiply the number of multi-family units by \$1,380 (Lahaina area amt.)

DOE's facilities cost for each new single-family residential unit

Number of students per unit:

	1 unit	100 units
Elementary K-5	.279	27.9
Middle 6-8	.143	14.3
High School 9-12	.154	15.4
Total	.576	57.6

Number of school acres required per unit:

	Students per unit	Acres per student	Acres per unit
Elementary K-5	.279	.0122	.00340
Middle 6-8	.143	.0114	.00163
High School 9-12	.154	.0257	.00396
Total	.576		.00899

Honolulu school construction required per unit:

	Students per unit	Adjusted cost per student	Adjusted cost per unit
Elementary K-5	.279	18,105.	5,051.
Middle 6-8	.143	21,112.	3,019.
High School 9-12	.154	33,110.	5,099.
Total	.576		13,169.

DOE's facilities cost for each new multi-family residential unit

Number of students per unit:

	1 unit	100 units
Elementary K-5	.109	10.9
Middle 6-8	.040	4.0
High School 9-12	.069	6.9
Total	.218	21.8

Number of school acres required per unit:

	Students per unit	Acres per student	Acres per unit
Elementary K-5	.109	.0122	.00133
Middle 6-8	.040	.0114	.00046
High School 9-12	.069	.0257	.00177
Total	.218		.00356

Honolulu school construction required per unit:

	Students per unit	Adjusted cost per student	Adjusted cost per unit
Elementary K-5	.109	18,105.	1,973.
Middle 6-8	.040	21,112.	844.
High School 9-12	.069	33,110.	2,285.
Total	.218		5,102.

RECEIVED AS FOLLOWS

LINDA LINGLE
GOVERNOR



RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKIGUCHI

JUN 25

GROUP 70

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

IN REPLY REFER TO:

STP 8.1204

June 14, 2004

TO: GENEVIEVE SALMONSON, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL (OEQC)

FROM: RODNEY K. HARAGA *Rodney Haraga*
DIRECTOR OF TRANSPORTATION

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
(EISPN) PALAMANUI - A HILUHILU DEVELOPMENT PROJECT
TMK: 3-7-2-05: 01

In response to the June 1, 2004, letter from Group 70 International, Inc. transmitting an EISPN dated May 2004 for the subject project, this is to advise you that our comments on the earlier environmental assessments for the project are still valid and applicable.

The subject project will have a significant impact on our transportation facilities. We believe there are important issues that warrant a careful examination of the effects this development project will have on our airport and highways and in the future growth of the area.

We appreciate the notice that the project is again going through the environmental review process. Please keep us apprised.

c: Mary Lou Kobayashi, Office of Planning
George Atta, Group 70 International, Inc.



GROUP 70
INTERNATIONAL

Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
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Donna D. Pennington, AIA
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujiliori, AIA

July 12, 2004

Rodney K. Haraga, Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Hilo, Hawaii 96813

**Subject: Palamanui – A Hiluhilu Development Project
EIS Preparation Notice (EISPN), May 2004
TMK: (3) 7-2-05:1
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii**

Dear Mr. Haraga:

Thank you for your letter of June 14, 2004 regarding your review of the May 2004 Environmental Impact Statement Preparation Notice (EISPN) for Palamanui – A Hiluhilu Development Project.

A Traffic Impact Assessment Report (TIAR) has been conducted for this project. Potential impacts on transportation facilities including the airport and highways are presented in the TIAR along with mitigative strategies to minimize possible impacts. A copy of the TIAR has been forwarded to your office for review and approval, and a full copy of the TIAR report will also be part of the Draft EIS report technical appendices for public review.

We will refer to your earlier comments provided for the first DEIS, as they are still applicable. Copies of your earlier comments and our responses to those earlier comments are included in the Draft EIS. In addition, this comment letter and this response letter will be included in the Draft EIS. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

From: George Atta
Sent: Wednesday, June 30, 2004 6:04 PM
To: 'david.hein@hawaii.gov'
Cc: Kim Evans
Subject: RE: FEIS Comments on Palamanui by Hiluhilu Development, Keahole
Dear Mr. Hein:

Thank you for your comments:

1. Regarding the full name of the Kona International Airport at Keahole, we will make the changes in appropriate places in the draft EIS.
2. Regarding the configuration of the airport in figure 1, we will update the figure with a newer base to provide a better current depiction of the runway configuration and its proximity to our proposed development. We appreciate your citation of the newer USGS reference map.

Thank you again for your comments

Sincerely,

George I. Atta

-----Original Message-----

From: david.hein@hawaii.gov [mailto:david.hein@hawaii.gov]
Sent: Wednesday, June 30, 2004 4:28 PM
To: George Atta
Cc: chauncey.wongyuen@hawaii.gov
Subject: FEIS Comments on Palamanui by Hiluhilu Development, Keahole

Mr. Atta,

In looking over the full set of documents for the EIS Preparation Notice for the Hiluhilu project again, I noted a couple of additional (minor) items worth your attention:

1. The correct full name for the airport at Kona is: Kona International Airport at Keahole. The name was formally changed several years ago.
2. The airport configuration shown on Fig 1 is significantly dated, and shows the runway in its pre-1995 (original) length of 6,500 ft. The current runway was extended to the north to a final overall length of 11,000 ft in the mid-1990's. as measured from the south end shown on the old drawings. This is only significant to the extent that aircraft landings and takeoffs will be further to the north, and more proximate to the proposed development, than might be implied by the drawing provided.

Reference

<http://www.topozone.com/map.asp?z=4&n=2185007&e=809697&s=100&size=1&u=6&datum=nad83&layer=DRG25> for an updated USGS map of the area and airport configuration.

Please let me know if you have any additional questions.

David Hein, P.E.
District Engineer
Airports Division, Kona International Airport

PHONE (808) 594-1888

FAX (808) 594-1865



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

JUN 17 2004

HRD04-1086C

June 16, 2004

George Atta, AICP
Chief Community Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307

Subject: Palamanui – A Hiluhilu Development Project, Environmental Impact Statement Preparation Notice (EISPN), Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii, TMK: (3) 7-2-05: Parcel 1

Dear Mr. Atta:

Thank for your letter dated June 1, 2004 regarding the Palamanui – A Hiluhilu Development Project, Environmental Impact Statement Preparation Notice (EISPN), located in Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii, TMK: (3) 7-2-05: Parcel 1.

Your letter notes,

“Hiluhilu Development LLC., proposes to develop Palamanui, a 725.2 acre vacant parcel in North Kona with residential units, mixed uses, an 18-hole golf course, and a university village center. The applicant is engaged in joint planning with the University of Hawaii to provide supporting infrastructure located on the Hiluhilu parcel for the proposed West Hawaii campus on adjacent State land.”

Additionally, your letter indicates,

“The various land use elements of the Master Plan include single and multiple family residential units, an 18-hole golf course with clubhouse and driving range, commercial and university residential features, health facilities, research and development facilities, archaeological preserves, cave and lava tube preserves, a dry-forest preserve, passive and active parks, open space and parking areas.

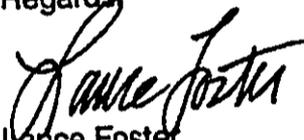
Infrastructure facilities to support the development includes access and internal circulation roadway networks, a wastewater treatment and disposal system, a potable water supply and fire protection system, a non-potable water irrigation system and other utility systems."

OHA in its previous letters to Group 70 International, Inc., the State Land Use Commission, the State Historic Preservation Division, County of Hawai'i Water Supply and Planning Department, and the Bishop Museum expressed concern and requested additional clarification and information on several issues including availability of water supply, importance of archaeological sites (as a cultural landscape), flora and fauna and funding sources.

OHA looks forward to your Draft EA for the proposed project, which should clarify the project scope and define the project more clearly.

If you have questions or concerns please contact Matthew Myers, Policy Advocate at 594-1945 or matthewm@oha.org.

Regards



Lance Foster
Director, Native Rights Land and Culture
Office of Hawaiian Affairs



July 12, 2004

Lance Foster
State of Hawaii
Office of Hawaiian Affairs
722 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

**Subject: Palamanui – A Hiluhilu Development Project
EIS Preparation Notice, May 2004**

Dear Mr. Foster:

Thank you for your letter of June 16, 2004 regarding your review of the May 2004 Environmental Impact Statement Preparation Notice (EISPN) for Palamanui – A Hiluhilu Development Project.

The following are offered in response to your comments:

1. We have received previous letters from OHA expressing concerns and requesting additional clarification and information on several issues including the availability of water supply, importance of archaeological sites, flora and fauna and funding sources. Copies of these letters and our responses will be published in the Draft EIS.
2. The Draft EIS will provide more clarification of the project scope, probable impacts and mitigative strategies.

Your comments and this response letter will be included in the Draft EIS. We appreciate your participation in the environmental review process.

Sincerely,

A handwritten signature in cursive script that reads 'George Atta'.

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

Francis S. Oda, Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
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James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimoto, AIA

Harry Kim
Mayor



Christopher J. Yuen
Director

Roy R. Takemoto
Deputy Director

County of Hawaii
PLANNING DEPARTMENT
101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-3043
(808) 961-8288 • Fax (808) 961-8742

June 23, 2004



JUN 25 2004

Mr. George Atta
Group 70 International
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307

Dear Mr. Atta:

Palamanui – A Hiluhilu Development Project
Environmental Impact Statement Preparation Notice (EISPN)
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii
TMK: (3) 7-2-05:1

Thank you for the opportunity to comment in the preparation of the Draft Environmental Impact Statement (DEIS) for the Palamanui Development Project. Please refer to our earlier comments provided for the first DEIS since they are still applicable.

Should you have any questions, please feel free to contact Norman Hayashi of this office at 961-8288.

Sincerely,

A handwritten signature in cursive script, appearing to read "Chris Yuen".

CHRISTOPHER J. YUEN
Planning Director

P:\wpwin60\norm\sluc\atta palamanui deis 6-23-04



July 12, 2004

Christopher J. Yuen, Planning Director
County of Hawaii
Planning Department
101 Pauahi Street, Suite 3
Hilo, Hawaii 96720-3043

**Subject: Palamanui – A Hiluhilu Development Project
EIS Preparation Notice (EISPN), May 2004
TMK: (3) 7-2-05:1
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii**

Francis S. Oda, Arch. D., FAIA, AICP
Norma L.G.Y. Hong, AIA
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Donna D. Pennington, AIA
Christine M. Ruotolo, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

Dear Mr. Yuen:

Thank you for your letter of June 23, 2004 regarding your review of the May 2004 Environmental Impact Statement Preparation Notice (EISPN) for Palamanui – A Hiluhilu Development Project.

We will refer to your earlier comments provided for the first DEIS, as they are still applicable. Copies of your earlier comments and our responses to those earlier comments are included in the Draft EIS.

In addition, this comment letter and this response letter will be included in the Draft EIS. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

Harry Kim
Mayor



Bruce C. McClure
Director

Ronald K. Takahashi
Deputy Director

County of Hawaii
DEPARTMENT OF PUBLIC WORKS

Aupuni Center
101 Pauahi Street, Suite 7 · Hilo, Hawaii 96720-4224
(808) 961-8321 · Fax (808) 961-8630

July 8, 2004

George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813

Subject: Environmental Impact Statement Preparation Notice-Palamananui
Applicant: Hiluhilu Development, LLC
TMK: 7-2-005:001

We reviewed the subject EISPN and have the following comments. At the same time we acknowledge and appreciate your December 17, 2003 response to our comments on the previous Draft EIS. Since then the alignments of Main Street, Midlevel Road and Waena Drive have undergone reevaluation and realignment. Please verify with the Planning Director the corrected alignments.

In addition, it has come to our attention that an 88-foot wide roadway (as opposed to 80 feet) with 6-foot wide utility corridors on both sides should be provided for 4-lane facilities called for in the K to K Plan. Thus the total corridor width should be revised to 100 feet in future planning documents for Main Street and possibly for other collectors described as 80 feet wide where capacity of four through-lanes will be needed. Eighty (80) feet should be reserved where two through-lanes with turn lanes and utility corridors will be needed. This may be reduced where the road bed is to be improved by landowner/developer and exclusive easements are provided for overhead utilities.

Proposed Roadway System

We defer to the Planning Director regarding conformance to the K to K Plan and Ordinance 93-45, however have made the following observations regarding conformance to the K to K, the recent discussions and Figure 4 in the subject notice:

University Drive in the K to K plan, is to be an 80-foot wide mauka-makai collector mentioned as the **Airport Access Road Alternative** in the subject. It would serve as the major collector until north-south collectors are constructed. Makalei Drive, which is proposed in this study to provide the mauka connection to Mamalahoa Highway through Makalei Subdivision, was not designed and constructed to County collector street standards. It is constructed to local street standards with a 50-foot wide right-of-way, maximum grades of 18 percent and with individual

Comments on EISPN-Hiluhilu Deveopment- Palamanui
TMK: 7-2-005:001
July 9, 2004
p. 2 of 2

parcels taking direct access from it. Construction of University Drive from the Airport Access connection at Queen Kaahumanu Highway to Mamalahoa Highway, bypassing Makalei Drive is recommended. Although shown on Figure 4 of the subject application it is not as depicted within the subject property in the K to K Plan. Rather, it is shown on the adjacent property. We appreciate the discussion in the subject notice.

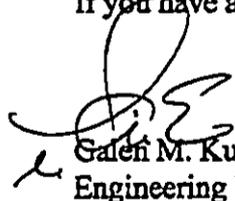
Kau Drive is described in the K to K plan as "a secondary mauka makai road that links the Lands of Kau directly with the Queen Kaahumanu Highway corridor." Kau Drive is the Northern Project Access Road. As recommended above, the Airport Access Road Alternative is the preferred makai connection.

Mid Level Road (Ane Keohokalole Hwy), a 120-foot wide arterial has been relocated to the original alignment through the study area where Main Street is shown on Figure 4. We defer to the Planning Director.

Kealakaa Street Extension, an 80-foot wide collector is provided through the study area as recommended in the K to K Plan.

Main Street (Kamanu street Extension), an 80-foot wide collector street in the K to K Plan, may not be as indicated in the Figure 4. We defer to the Planning Director.

The TIAR in the Draft EIS should discuss the capacity of the existing arterials to for additional development. The K to K Plan Implementation Strategy shows the subject area being incrementally developed along with the University Drive collector. Queen Kaahumanu Highway would be completed to four and then six lanes to and the segment of the Midlevel Road is incrementally connected from Palani Road to Kealakehe Parkway and then to University Drive while the University and subject development occurs. Motorists are even now experiencing unacceptable delays during extended peak periods on the existing arterials. Approvals should not anticipate the government arterial road construction to justify the additional traffic volume. Government roadway projects have been delayed recently for various reasons. If you have any questions, please contact Kiran Emler of our Kona office at 327-3530.


Salehi M. Kuba, Division Chief
Engineering Division

KE
c: Hawaii State Land Use Commission
Office of Enviromental Quality Control
Planning Director
ENG-HILO/KONA



July 12, 2004

Francis S. Odo,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hirosni Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Mika, AIA

Mr. Galea Kuba, Division Chief
Department of Public Works
County of Hawaii
101 Pauaki Street, Suite 7
Hilo, Hawaii 96720-4224

**Subject: Palamanui – A Hiluhilu Development Project
TMK: 7-2-005:001, EIS Preparation Notice, May 2004**

George I. Atta, AICP
Paul P. Chorney, AIA
Philip T. Cuccia
Pete C. Galvez, AIA
Surobin Halim
Roy A. Inouye, AIA, CSI
Charles Y. Kaneshiro, AIA
Stephen H. Kelly, AICP
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Donna D. Pennington, AIA
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimon, AIA

Dear Mr. Kuba:

Thank you for your letter of July 8, 2004 regarding your review of the May 2004 Environmental Impact Statement Preparation Notice (EISPN) for Palamanui – A Hiluhilu Development Project.

The following are offered in response to your comments:

1. We will review the revised alignments of Main Street, Midlevel Road and Waena Drive with the County Planning Director. Additionally, we will work with the Planning Director to meet requirements of the K to K Plan and Ordinance 93-45.
2. We will review the right of way widths according to your letter. The specific dimensions of the secondary roads will comply with the necessary County standards.
3. University Drive: Your comments about the collector road status of this roadway is noted. It will be designed to this standard up to the University Village site. Beyond this point the mauka-makai connection to Makalei Drive is an interim mauka-makai connection. We recognize that Makalei Drive is not built to collector road standards. The alignment and completion of the main collector connection to Mamalahoa Highway is one of the unresolved issues related to our project and will be discussed in greater detail in the EIS.
4. Kau Drive: Kau Drive will only be a service and emergency access. We are proceeding with the plan to make the Airport Access Roadway the main access to the project.
5. Mid-Level Road (Ane Keohokalole Hwy), Kealakaa Street Extension & Main Street (Kamanu Street Extension): We will work with the Planning Director to resolve alignment issues related to these roadways

Letter to Mr. Galen Kuba
July 12, 2004
Page 2 of 2

6. TIAR: The TIAR will discuss capacities of existing arterials. We find the comment that approvals should not anticipate government arterial construction to justify additional traffic volumes disturbing since traffic is a systemic issue and no developer has either the resources or authority to make many of the system improvements necessary. If government projects cannot be relied upon it may make many traffic projections and mitigation actions unreliable. We understand the difficulty of this issue and hope to discuss it further and come to some solution as project approvals and development proceeds.

Your comments and this response letter will be included in the Draft EIS. We appreciate your participation in the environmental review process. Please call me at 808-523-5866 if you have any questions.

Sincerely,



George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

-----Original Message-----

From: PASH [mailto:PASH.Hawaii@turquoise.net]

Sent: Thursday, July 08, 2004 10:50 PM

To: Charles Schwab; Guido Giacometti; Land Use Commission; George Atta

Cc: Curtis Tyler; Natalie Archambault Audubon International; Jerry Rothstein; Glenn Shepherd; Isaac Harp; Mike Varney; Rick Schulze; Mayor Harry Kim; Chris Yuen; Rep.Cindy Evans; Sen. Paul Whalen; Sen.Russell Kokubun; Sen.Lorraine Inouye; Rep.Bob Herkes; Bob Jacobson; Leningrad Elarianoff; Joel Gimpel; Angel Pilago; Jim Rath

Subject: Re: Palamanui Development (formerly Hiluhilu) EISPN

July 8, 2004

State Land Use Commission
Charles Schwab
Guido Giacometti, Hiluhilu Dev.
George Atta, Group 70 Int.

Re: EISPN input for Palamanui Development (formerly Hiluhilu Development)

Gentlemen,

PASH is a coastal zone public interest advocacy organization.

OUR CONCERN

Our concern with the Palamanui Development is not only the quality of near shore water and coral reefs that may be impacted by golf course chemical and nutrient runoff, but also with the adverse environmental impacts of golf course chemicals to human and terrestrial animals when not built and maintained to the highest standards possible.

STATE STANDARDS INSUFFICIENT AND NO ENFORCEMENT

Ordinary state standards as were applied to Hokulia and other golf courses have proven to be ineffective. Furthermore state standards rely on self-monitoring and are not enforced. They are merely words on paper that have little if any meaning in the field.

HIGHEST AND BEST STANDARD WITH ENFORCEMENT

There is a standard of golf course planning, construction and maintenance that is the highest quality, through a most reputable non-profit organization, providing the most qualified consultants, that is also enforceable. It is the Audubon International Gold Signature Sustainable Development Program. PASH respectfully requests that the applicant gives this option a thorough evaluation and its most favorable consideration in its Environmental Impact Statement.

AUDUBON INTERNATIONAL SIGNATURE SUSTAINABLE DEVELOPMENT PROGRAM

While the program is used by golf courses, it can be applied to the entire development as well. Here is a brief overview of the Audubon Signature Program: It is an environmental education and development assistance program designed to help landowners and managers follow sustainable resource management principles in the development and management of the project. It fosters a stewardship ethic that fosters environmental values in land management decision making rather than just cost.

Audubon consultants may be involved in design, construction and management of the project including a Natural Resource Management Plan, educational support, on-site technical advice and assistance in sustainable development and best management practices including pest management, water conservation and water quality management,

waste management and energy planning, landscaping, wildlife, etc. including up to 20 on-site visits by their consultants and annual recertification to uphold standards.

While non-Audubon golf courses are dumping chemicals onto their dying golf courses and polluting the near shore waters, Palamanui will be thriving using an Audubon Gold Sustainable Development Program.

PASH can provide the LUC, the applicant, and their consultant Mr. Geo Atta with relevant Audubon International material, or it can be obtained directly from Natalie Archambault of Audubon International at 919-380-9640 or by e-mail at natarc@audubonintl.org.

TWO ALREADY IN WEST HAWAII

There are already two golf courses in West Hawaii that voluntarily adopted Audubon Sustainable Development programs: A Gold at Pauoa Bay in S.Kohala and a Silver at nearby Kohanaiki. A development the magnitude of Palamanui (on 725 acres, located below intensively developed Kona Palisades, providing residential units, commercial units, athletic fields, medical facilities, a cultural center, community facilities, adjacent to a college campus and mauka of the Natural Energy lab which is involved in mariculture) calls for a Gold standard sustainable golf course.

GOLD IS GOOD FOR BUSINESS AND REPUTATION

The Audubon International Gold program would be a public relations triumph for Charles Schwab. It would be a good investment that provides excellent dividends as potential buyers are attracted to the development because of its environmental integrity, and the public becomes aware of his high standards in relation to the environment, near shore waters, and public health. Mr. Schwab, who no doubt cares about such environmental issues, would be recognized for Palamanui's affiliation with Audubon International.

COUNTY COUNCIL AND MAYOR: ADOPT AUDUBON STANDARDS

With three golf courses voluntarily on board, it may interest the County Council and the mayor to require all future golf courses on Hawaiiisland to be built to Audubon International Sustainable Development standards. The planning director and the mayor are already considering it having documentation that there are about 20 counties whose governments already require Audubon Sustainable Development standards as conditions of approval.

Palamanui development could help provide the momentum for all future golf course development on Hawaiiisland to be built and maintained to Audubon International standards by becoming the third major development to voluntarily embrace such high standards.

The idea of high quality, low impact golf courses that actually cost less to maintain, may even spread to other islands.

TO LUC and MESSRS. SCHWAB, GIACOMETTI, AND ATTA

This letter is to ask Mr. Chas. Schwab, Guido Giacometti, and George Atta to review the cost and benefits of the Audubon International Gold Sustainable Development program and to voluntarily include it as a condition of approval for the CDUP for their Palamanui development.

If not, then we ask that the LUC require it as a condition of the CDUP approval. Similar requests will be made throughout the permitting process including county rezoning, subdivision, wastewater treatment facility and irrigation, grading and building permits, irrigation well permits, National Pollution Discharge Elimination System (NPDES) and underground injection control (UIC) until we bring home the Gold.

ALTERNATIVE TO TOXIC TERMITICIDES

Another environmental issue is the potential damage to the marine environment from the use of termiticides. While pre-construction termite control is a requirement, the use of poison isn't.

Approximately 125 gallons of termiticide solution is poured around every new single family home. Inevitably this will seep through the porous lava, through any anchialine ponds that may be between the development and the ocean below it, and reach the near shore waters where it is likely to harm the marine environment. There are other non-toxic methods of termite prevention that can be used i.e. a wire mesh barrier and basaltic termite barrier. Palamanui could rightfully claim to be a poison-free development.

COMPLETE WATER MONITORING PROGRAM

Furthermore, a complete water monitoring program should be a condition of approval. This would include a pre-construction base line study of quarterly sampling of three days within two weeks, dry season sampling, similar sampling during construction, and regular post-construction sampling.

CUMULATIVE IMPACTS

When you consider the cumulative impacts of this development with others that are coming, golf course and termiticide pollution becomes an even greater threat to people and the environment. That's why it's so important that Palamanui goes for the Gold.

Yours for a better way,

Jerry Rothstein

Jerry Rothstein, pres. PASH
Hawaii Island 96740
329-1568



July 12, 2004

Mr. Jerry Rothstein, President
PASH
76-123 Royal Poinciana Drive
Kailua-Kona, Hawaii 96740

**Subject: Palamanui – A Hiluhilu Development Project
EIS Preparation Notice, May 2004**

Francis S. Oda, Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Dear Mr. Rothstein:

Thank you for your e-mail of July 8, 2004 regarding your review of the May 2004 Environmental Impact Statement Preparation Notice (EISPN) for Palamanui – A Hiluhilu Development Project.

We appreciate your concerns about the potential impacts of golf course design and management on the coastal and terrestrial environments and acknowledge your comments about the insufficiency of existing regulations.

The following are offered in response to your comments:

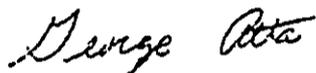
1. Your advocacy of the Audubon International Signature Sustainable Development Program is noted. As Mr. Giacometti mentioned in his conversation with you, we will review the costs and benefits of the program and its possible use in the development of the Palamanui Golf Course. We look forward to continuing discussions with you and other representatives of the Audubon Program as we evaluate its applicability to our project.
2. We understand your concern about the use of toxic termiticides in construction projects. We also acknowledge the availability of other methods of control for termites. We will review the options and discuss our conclusions in the EIS.
3. Water monitoring Program: Your comments about a complete monitoring program were general and vague in terms of the location, design and type of monitoring program you are recommending. Palamanui will monitor conditions in the immediate local of the golf course through the use of lysimeters. Our irrigation wells will also be monitored periodically for contaminants. We have also indicated our willingness to participate, along with other landowners, in a regional water quality-monitoring program for coastal water quality that may be conducted by a State agency; possibly the Department of Land and Natural Resources or the Department of Health.

George I. Atta, AICP
Paul P. Chorney, AIA
Philip T. Cuccia
Pete C. Galvez, AIA
Sutobin Halim
Roy A. Inouye, AIA, CSI
Charles Y. Kaneshiro, AIA
Stephen H. Kelly, AICP
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Katrryn A. Nam
Jeffrey H. Overton, AICP
Donna D. Pennington, AIA
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimon, AIA

Letter to Mr. Jerry Rothstein
July 12, 2004
Page 2 of 2

Your comments and this response letter will be included in the Draft EIS. We appreciate your participation in the environmental review process. Please call me at 523-5866 if you have any further questions or comments.

Sincerely,



George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

From: Josephine Keliipio
To: Guido Giacometti
Sent: Wednesday, July 07, 2004 9:53 PM
Subject: PALAMANUI Development EIS Draft

Dear Mr. Giacometti,
I understand that you are the developer representative of the Palamanui /Hiluhilu project in Kona.

Therefore, I would like to be a consulting party to the Draft EIS for Palamanui.
I look forward to receiving the Draft EIS.

Mahalo,
Josephine Keliipio
P.O. Box 368
Kealahou, HI 96750



July 12, 2004

Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihel, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Milk, AIA

Ms. Josephine Keliipio
P.O. Box 368
Kealahou, HI 96750

**Subject: Palamanui – A Hiluhilu Development Project
EIS Preparation Notice (EISPN), May 2004
TMK: (3) 7-2-05:1
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii**

George I. Atta, AICP
Paul R. Chorney, AIA
Philip T. Cuccia
Pete C. Galvez, AIA
Sutobin Halim
Roy A. Inouye, AIA, CSI
Charles Y. Kaneshiro, AIA
Stephen H. Kelly, AICP
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Donna D. Pennington, AIA
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujiliori, AIA

Dear Ms. Keliipio:

Thank you for your email of July 7, 2004 requesting to be a consulting party to the Draft EIS for the Palamanui – Hiluhilu Development Project.

Your email request and this response letter will be included in the Draft EIS. A copy of the Draft EIS report will be mailed to you. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

**July 2004 Palamanui DEIS
Comment and Response Letters**

Written Comment and Responses to July 2004 Draft EIS for Palamanui

OEQC
DAGS
DBEDT *Energy*
DOE
DLNR – Land Division
DLNR – State Parks Division
DLNR – Engineering Division
OHA
UH Environmental Center
DCAB
Makalei Estates
NELHA

2004

Late comments received from May 2004 EIS Preparation Notice that was not included in the Draft EIS report.

OEQC
DBEDT
Disability

LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4185
E-mail: oeqc@health.state.hi.us

August 13, 2004

Anthony Ching
Land Use Commission
PO Box 2359
Honolulu, HI 96804

Dear Mr. Ching:

Subject: Draft Environmental Impact Statement (EIS), Palamanui Development

We have the following comments to offer:

1. Inclusion of comment letters: EISPN comment letters from several agencies and individuals were not reproduced in the draft EIS, nor were their responses. The following is a list along with the letter dates, if known. Copies of these letters are attached.

- OEQC (6/10/04)
- Director of Transportation (6/14/04)
- DBEDT Office of Planning (OP) (7/14/04)
- Disability & Communication Access Board (DCAB) (7/19/04)

The following were listed in section 11.0 as having commented on the EISPN but their letters and responses are missing:

- Office of Hawaii Affairs
- Hawaii County Planning Department
- Hawaii County Dept. of Public Works

Include copies of these letters in the final EIS and, as appropriate, responses to them. Even though the letters from OP and DCAB were late, we encourage you to respond to them.

2. Title page signature: The applicant rather than the applicant's agent should sign the final EIS, noting that all ancillary documents were under his/her direction. The FEIS copy with the original signature should be submitted to the accepting authority. Copies of the FEIS with a photocopied signature can be distributed elsewhere, including OEQC.

Anthony Ching
August 13, 2004
Page 2

3. Figures and tables: Inclusion of north arrows in your close-up figures would be helpful for the reviewer. In Tables 3-8 to 3-10, 3-12 and 3-13 indicate the monetary units, e.g. dollars, hundreds of dollars, thousands of dollars, etc.

4. Fauna: Section 4.12 mentions the feral Kona donkeys. Will they have any impact on the project? Will the project affect them in any way?

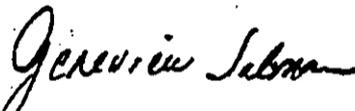
5. Alternatives:

Section 7.3 discusses subdivision development without the golf course. With no golf course both a recreational resource and open space will be lost. With subdivision development there are likely to be park and open space requirements. How much of the acreage in this alternative would be dedicated to parks and open space?

Section 7.4 describes the project without the UH linkage. Since a final decision has not yet been made on this option, the discussion more appropriately belongs in Section 8, *Unresolved Issues*. Section 7 should only contain alternatives that have been considered and rejected.

If you have any questions call Nancy Heinrich at 586-4185.

Sincerely,



GENEVIEVE SALMONSON
Director

Enc.

c: George Atta

LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

June 10, 2004

Anthony Ching
Land Use Commission
PO Box 2359
Honolulu, HI 96804

Dear Mr. Ching:

**Subject: Environmental Impact Statement (EIS) Preparation Notice
Palamanui Development, North Kona**

In order to reduce bulk and save on paper, please print on both sides of the pages in the EIS. In addition we have the following comments to offer:

Figures: All figures should include a north arrow and a scale in order to indicate orientation and magnitude.

Community Contacts:

Will you give any public presentations or workshops on the development? If so include a synopsis of the topics raised during these events in the draft EIS.

Be sure to document all contacts in the draft EIS, including those made during the scoping phase, and include copies of any correspondence.

Visual impacts: Identify public viewpoints of the project site from which visual impacts may occur, especially of mauka and makai viewplanes. Show these impacts by superimposing a rendering of the proposed facilities onto photographs taken from public vantage points.

Cumulative impacts: The cumulative impact that this development will have on the region should be done treating it and the UH Center West Hawaii campus as a whole. You will undoubtedly be asked this many times over the course of the review period.

Terms, abbreviations and acronyms: It would be helpful for the reviewer if the draft EIS included a glossary of terms, abbreviations and acronyms.

Landscaping: The EISPN discusses golf course landscaping. Do you have a landscaping plan for the non-golf course areas? Does it include irrigation with reclaimed water?

Anthony Ching
June 10, 2004
Page 2

Permits: In the table in section 3.7 indicate the status of the various permits. If permit applications have not yet been filed, list the anticipated dates of filing.

Senior housing: Senior housing is one of the residential components. During the design phase consult with the Area Office on Aging or other seniors advocacy group to make sure the design elements do not inadvertently discourage "aging in place."

If you have any questions call Nancy Heinrich at 586-4185.

Sincerely,


GENEVIEVE SALMONSON
Director

c: George Atta

LINDA LINGLE
GOVERNOR



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

RECEIVED

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRUNN H. SEKIGUCHI

IN REPLY REFER TO:

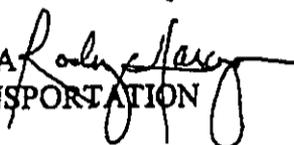
STP 8.1204

'04 JUN 29 A9:36

June 14, 2004

RECEIVED
QUALITY CONTROL

TO: GENEVIEVE SALMONSON, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL (OEQC)

FROM: RODNEY K. HARAGA 
DIRECTOR OF TRANSPORTATION

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
(EISPN) PALAMANUI - A HILUHILU DEVELOPMENT PROJECT
TMK: 3-7-2-05: 01

In response to the June 1, 2004, letter from Group 70 International, Inc. transmitting an EISPN dated May 2004 for the subject project, this is to advise you that our comments on the earlier environmental assessments for the project are still valid and applicable.

The subject project will have a significant impact on our transportation facilities. We believe there are important issues that warrant a careful examination of the effects this development project will have on our airport and highways and in the future growth of the area.

We appreciate the notice that the project is again going through the environmental review process. Please keep us apprised.

c: Mary Lou Kobayashi, Office of Planning
George Atta, Group 70 International, Inc.



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

OFFICE OF PLANNING

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

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
STEVE BRETSCHEIDER
DEPUTY DIRECTOR
MARY LOU KOBAYASHI
ADMINISTRATOR
OFFICE OF PLANNING

Telephone: (808) 587-2848
Fax: (808) 587-2824

Ref. No. P-10530

July 14, 2004

'04 JUL 20 P3:50

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Subject: Hiluhilu Development, LLC
Environmental Impact Statement Preparation Notice (EISPN)

Hiluhilu Development, LLC, proposes to develop 590 single-family lots and 255 multi-family residential units on 725.2 acres in North Kona. The community (Palamanui), will include an eighteen-hole golf course, clubhouse, driving range, and commercial facilities, and further integrate these proposed uses around a "University Village Center." Hiluhilu Development will develop university facilities and supporting infrastructure on the Hiluhilu parcel to facilitate future hook-up to the proposed campus for the University of Hawaii Center at West Hawaii (UHCWH). The project will also include a 120-unit hotel or University Inn.

In addition to the proposed uses identified above, the Palamanui Community will include commercial and university residential facilities, health facilities, athletic fields, research and development facilities, archaeological preserves, cave and lava tube preserves, a dry forest preserve, passive and active parks, open space, and parking areas.

Given the sensitive native botanical ecosystems within the dry forest preserve, we question the efficacy in establishing the area as a preserve while providing residents and the public, open space and low intensity outdoor wildness opportunities. The proposed use may conflict with efforts proposed by the developer to prevent introduction of alien species.

The developer will provide 100 affordable housing units according to the "agreements established" with County and State housing agencies. The County of Hawaii is in the process of revising its affordable housing policy. The Draft Environmental Impact Statement (DEIS) should provide discussion as to whether the project's affordable housing requirement was determined under the County's present affordable housing policy or the proposed revisions.

According to the information provided in the EISPN, "...the design (of University Village) would not work as well if only one side of the village were to be developed." In light of this, the DEIS should discuss the feasibility of Hiluhilu Development constructing a signature anchor building, and leasing it back to UH and/or the progress made by the University to build a "signature structure" at the southern end of the Main Street axis.

Mr. George Atta
Page 2
July 14, 2004

According to the EISPN, Hiluhilu Development will reserve the necessary corridor for the County's Midlevel Road, Main Street, and the Kealakaa Street Extension right of ways, and will construct major arterial roadways servicing the project area. Hiluhilu will configure the infrastructure to allow expansion of UHCWH operations along the "Main Street" corridor onto the 500-acre parcel to the south.

The EISPN indicates that a through road connecting to the project access road from Queen Kaahumanu Highway will continue through the parcel to the east end of the parcel. At the eastern boundary, the mauka-makai road will connect to the existing mauka-makai road through Makalei Estates that connects to Mamalahoa Highway. Mauka-makai roads are an important component of effective traffic circulation in this region. The DEIS should fully discuss the availability of this accessway.

The State has an interest in assuring right-of-ways for planned County regional roadways such as the Midlevel Road and Main Street (Keahole to Kailua Development Plan) and mauka to makai accessways because these roadways contribute to a state-county traffic circulation network for the region. Adequate county roadways will help to support Queen Kaahumanu Highway's functions as a high speed regional thoroughfare.

The primary access to the project site will be provided either at the western boundary of the Hiluhilu parcel or by means of a new roadway intersecting Queen Kaahumanu Highway at its intersection with the existing Keahole Access Road. Hiluhilu Development will provide more information on these alternative project access roadways in the DEIS. Coordination with the Department of Transportation and other affected State agencies should continue on the alignment of the project access roadway.

Thank you for the opportunity to comment on the subject EISPN. Should you have any questions, please call Judith Henry at 587-2803.

Sincerely,

Mary Lou Kobayashi

Mary Lou Kobayashi
Administrator

c: Anthony Ching, LUC
✓ Genevieve Salmonson, OEQC



DISABILITY AND COMMUNICATION ACCESS BOARD

919 Ala Moana Boulevard, Room 101 • Honolulu, Hawaii 96814
Ph. (808) 586-8121 (V/TDD) • Fax (808) 586-8129

July 19, 2004

JUL 20

Mr. George Atta
Chief Community Planner
Group 70 International, Inc.
925 Bethel Street
Fifth Floor
Honolulu, HI 96813-4307

Regarding: Palamanui - A Hiluhilu Development Project
Environmental Impact Statement Preparation Notice (EISPN)
TMK Nos: 3-7-2-05:01
Ahupua'a of Kau, North Kona Judicial District
Island of Hawaii

Dear Mr. Atta,

Thank you for providing us the opportunity to review and respond to the Environmental Impact Statement Preparation Notice (EISPN) prepared by Group 70 International, Inc. The notice is for the Master Planned Community of Palamanui, a Hiluhilu Development Project, located in the ahupua'a of Kau between Queen Kaahumanu Highway and Makalei Estate in North Kona on the Island of Hawaii. The purpose of our comments are to ensure that the Hiluhilu Development, LLC, will take into account accessibility design requirements for persons with disabilities during the preparation of the EISPN and in the Draft Environment Impact Statement (DEIS).

We offer the following comments:

1. It is anticipated that the Project arterial roadways, connector roadways, walkways, and other types of pedestrian and vehicular access to service the residential, retail and commercial lots being created will be dedicated to the County of Hawaii or State as part of the public right-of-way system. It is also anticipated that parts of the initial phases of University Village including, but not limited to, buildings for college use, parking facilities, and parks being created will be dedicated to the County or State. In addition, major infrastructure improvements such as electrical switching and transformer substations, a sewage treatment plant system, university leases, student housing, assisted living facilities may be dedicated. These types of dedications will fall within the scope of the Americans with Disabilities Act (ADA) Title II covering state and local governments, and the Hawaii Revised Statutes (HRS) §103-50. Although the technical requirements are nearly identical, there may be areas of difference. If this is the intent, HRS §103-50 contains a requirement for a review process by the Disability and Communication Access Board for this portion of the site.
2. Any proposed private infrastructure systems and amenities for commercial and public use within the boundaries of this site, however, will not be subject to the requirements of HRS §103-50. They will be subject to the requirements of Title III of the ADA, which covers privately owned places of public accommodation and commercial facilities. Accessibility will need to be addressed for elements, including but not limited to, elements such as the proposed

George Atta, AICP
Group 70 International, Inc.
Regarding: Palamanui EISPN
July 19, 2004
Page 2

semi-public 18-hole golf course, research laboratories, commercial retail spaces, commercial residential spaces, and public walking surfaces.

The Disability and Communication Access Board incorporates the following guidelines in the review process:

- a. The "Americans with Disabilities Act Accessibility Guidelines" (Department of Justice (DOJ), published July 1, 1994 revised).
 - b. The "Fair Housing Act Accessibility Guidelines" (Department of Housing and Urban Development published March 13, 1991 and supplement published June 28, 1994).
 - c. The "State of Hawaii's Residential Accessibility Guidelines" (published September 1995).
 - d. The "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities; State and Local Government Facilities; Final Rule" (Federal Register published January 13, 1998).
 - e. The "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities; Building Elements Designed for Children's Use; Final Rule" (Federal Register published January 13, 1998).
 - f. The Disability and Communication Access Board's (DCAB) "Interpretive Opinions" addressing clarification of the various accessibility guidelines.
3. For additional recommended references in planning, the U.S. Architectural and Transportation Barriers Compliance Board has available the following documents:
- a. The "Regulatory Negotiation Committee on Access to Outdoor Developed Areas; Final Report", published September 1999.
 - b. "Designing Sidewalks and Trails for Access" Part I & II, published July 1999.
 - c. "Accessibility Guidelines for Public Rights of Way -- Draft Guidelines", June 17, 2002. These documents will provide this project with information that may be helpful in the long range planning of the site.
 - d. The "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities; Recreation Facilities; Final Rule", published September 3, 2002.

For further information, contact the Office of Technical and Informational Services, U.S. Architectural and Transportation Barriers Compliance Board, 1331 F Street, N.W., Suite 1000, Washington, D.C. 20004-1111; phone numbers (800) 872-2253 (V), (202) 272-0080 (TTY), (202) 272-0082 (Fax); and e-mail address to access publications www.access-board.gov.

George Atta, AICP
Group 70 International, Inc.
Regarding: Palamanui EISPN
July 19, 2004
Page 3

4. If parking is provided the project must comply with Hawaii's Administrative Rules (HAR) Title 11, Chapter 219, "Parking for Persons with Disabilities", that became effective January 23, 2003. Section 11-29-14. Further information about "The Administrative Rules and Exhibits" can be obtained from our web site: www.hawaii.gov/health/dcab/. If you do not have access to the Internet, please call us for a copy of the rules and exhibits.
5. We recommend including a general accessibility statement in the final master plan:

"All facilities will be designed to meet the requirements of the Americans with Disabilities Act, the Fair Housing Act, and the requirements of Hawaii Revised Statutes (HRS) §103-50. Parking for facilities will be designed to comply with Hawaii's Administrative Rules (HAR) Title 11, Chapter 219, Parking for Persons with Disabilities, Section 11-219-14. Buildings, facilities, and sites will also incorporate the best design practices as recommended by the U.S. Department of Transportation for designing sidewalks and trails and the U.S. Access Board for designing outdoor developed areas, recreation areas, or other current documents providing for accessibility".

The above reflects staff's technical assistance comments. They do not reflect our Board's approval or disapproval of the Plan. Again, thank you for giving us this opportunity to provide comment.

Should you have any questions or concerns, please feel free to contact Mr. Gary L. Batcheller, Facility Access Specialist, or Mr. Curtis Motoyama, Access Coordinator, at 586-8121.

Sincerely,



FRANCINE WAI
Executive Director

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



Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihel, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miko, AIA

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Jeffrey H. Overton, AICP
Donna D. Pennington
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

September 9, 2004

Geneveive Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

**RE: Draft Environmental Impact Statement (DEIS), July 2004
Palamanui - A Hiluhilu Development Project
TMK 3-7-2-05:01
North Kona, Island of Hawaii**

Dear Ms. Salmonson:

Thank you for the letter of August 13, 2004 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Palamanui - Hiluhilu Development project.

1. **Inclusion of comment letters:** Comment and response letters to the EISPN from OEQC (6/10/04), DOT (6/14/04), DBEDT-OP (7/14/04) and DCAB (7/19/04) will be included in the Final EIS. We did not receive a copy of the OEQC letter dated June 10, 2004 earlier. Thank you for providing this copy. Concerns will be addressed and included in the Draft EIS. The DOT June 14, 2004 letter was included in the Draft EIS in Chapter 11. The DBEDT and DCAB letters were received after the preparation of the Draft EIS and therefore was not included in the Draft EIS report. Responses to their concerns have been made and copies of their letters will be included in the Final EIS report.

Copies of the comment and response letters from OHA, Hawaii County Planning Department and Hawaii County Department of Public Works regarding the EISPN will be included in the Final EIS. These letters were included in the Draft EIS in chapter 11.

2. **Title page signature:** The applicant rather than the applicant's agent will sign the final EIS, noting that all ancillary documents were under his/her direction. The FEIS copy with the original signature will be submitted to the accepting authority (LUC). Copies of the FEIS with a photocopied signature will be distributed elsewhere, including OEQC.
3. **Figures and tables:** North arrows will be included in the close-up figures. Monetary units have been added to Tables 3-8 to 3-10, 3-12 and 3-13.

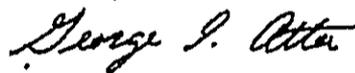
Letter to Ms. Geneveive Salmonson
September 9, 2004
Page 2 of 2

4. Fauna: Feral Kona donkeys are known to be found in the general region of the project site. The donkeys do not currently impact the proposed project. They do not reside within the project site. The development of Palamanui will reduce the availability of 725 acres of wilderness area for the feral donkeys to roam.
5. Alternatives: The alternative of a subdivision development without the golf course would still include parks and open space elements. Open space and parks acreages have not been calculated in detail. At minimum, acreages would be set aside to meet county and state standards.

The alternative of developing Palamanui without the UH linkage continues to remain unresolved. As you suggest, this alternative will be added to Section 8, Unresolved Issues.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process. Please contact me if you have any further questions or comments.

Sincerely,
Group 70 International, Inc.



George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR



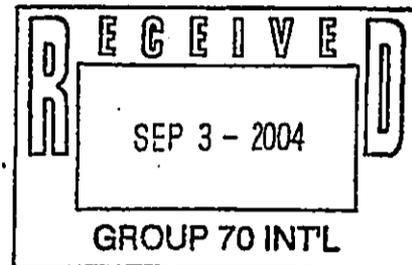
RUSS K. SAITO
COMPTROLLER

KATHERINE H. THOMASON
DEPUTY COMPTROLLER

(P)1294.4

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

SEP - 2 2004



Mr. George Atta, AICP, Chief Community Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Atta:

Subject: Palamaniu: Hiluhilu Development Project
Draft Environmental Impact Statement
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii
TMK: 3-7-2-05:01

Thank you for the opportunity to review the subject project's Draft Environmental Impact Statement. The project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

If you have any questions, please have your staff call Mr. David DePonte of the Planning Branch at 586-0492.

Sincerely,


ERNEST Y. W. LAU
Public Works Administrator

DD:mo

c: Ms. Genevieve Salmonson, OEQC
Mr. Anthony Ching, SLUC



September 9, 2004

Francis S. Oda, Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Mr. Ernest Y. W. Lau, Public Works Administrator
State of Hawaii
Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810

**Subject: Palamanui – A Hiluhilu Development Project
DEIS Preparation Notice, July 2004
TMK: (3) 7-2-05:1
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii**

George I. Atta, AICP
Paul P. Chomey, AIA
Phillip T. Cuccia
Pete C. Galvez, AIA
Sutobin Halim
Roy A. Inouye, AIA, CSI
Charles Y. Kaneshiro, AIA
Stephen H. Kelly, AICP
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Donna D. Pennington
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimoto, AIA

Dear Mr. Lau:

Thank you for the letter of July 29, 2004 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Palamanui - Hiluhilu Development project.

As you state, this project does not impact any of the Department of Accounting and General Services' project or existing facilities.

Your comment letter and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto



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

LINDA LINGLE
GOVERNOR
THEODORE E. LEE
DIRECTOR
STEVE BRETSCHNEIDER
DEPUTY DIRECTOR

Strategic Industries Division
235 South Beretania Street, Leio papa A Kamehameha Bldg., 5th Floor, Honolulu Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-3807
Fax: (808) 587-3820
Web site: www.hawaii.gov/dbedt/sid

July 30, 2004

Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Attn: George Atta

Subject: Draft Environmental Impact Statement (DEIS)
Palamanui – A Hiluhilu Development Project
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii
Tax Map Key: 3-7-2-05:01

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for Palamanui, a project in North Kona with residential units, mixed uses, an 18-hole golf course, and a university village center. The comments we submitted on July 6, 2004, for the review of the May 2004 Environmental Impact Statement Preparation Notice (EISPN) remain relevant. We will not be submitting further comments on this project.

We commend you for the planned use of sustainable design principles to maximize the efficient use of energy and resources throughout the project as outlined in your July 12, 2004, letter responding to our comments on the May 2004 Environmental Impact Statement Preparation Notice (EISPN).

Sincerely,

Maurice H. Kaya
Chief Technology Officer

c: OEQC
Hawaii Land Use Commission



September 9, 2004

Mr. Maurice H. Kaya, Chief Technology Officer
State of Hawaii
Department of Business, Economic Development and Tourism
235 S. Beretania Street, 5th Floor
Honolulu, Hawaii 96813

RE: **Draft Environmental Impact Statement (DEIS), July 2004**
Palamanui – A Hiluhilu Development Project
TMK 3-7-2-05:01
North Kona, Island of Hawaii

Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hiroshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Atta, AICP
Paul P. Chorney, AIA
Philip T. Cuccia
Pete C. Galvez, AIA
Sutobin Halim
Roy A. Inouye, AIA, CSI
Charles Y. Kaneshiro, AIA
Stephen H. Kelly, AICP
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Donna D. Pennington
Christine M. Ruotolo, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimoto, AIA

Dear Mr. Kaya:

Thank you for your letter of July 30, 2004, regarding your review of the July 2004 Draft Environmental Impact Statement (DEIS) for Palamanui – A Hiluhilu Development Project.

We appreciate your recognition of our efforts to use sustainable design principles to maximize the efficient use of energy and resources throughout the project.

Your comments submitted on July 6, 2004 for the review of the May 2004 Environmental Impact Statement Preparation Notice (EISPN) remain relevant. Your concerns have been addressed in an earlier response letter.

Your comment letter and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

RECEIVED AS FOLLOWS

From: FACILITIES* VZ Page: 172 Date: 9/7/2004 9:18:37 AM

LINDA LINGLE
GOVERNOR

PATRICIA HAMAMOTO
SUPERINTENDENT



ADVANCE COPY

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

September 8, 2004

Mr. George Atta
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Post-it* Fax Note	7671	Date	9/7/04	# of pages	2
To	George Atta	From	Hadi Wecker		
Cc./Dept.	Group 70	Co.	Facilities Branch, DOE		
Phone #		Phone #	735-6290		
Fax #	683-5874	Fax #			

Dear Mr. Atta:

**SUBJECT: Draft Environmental Impact Statement for Hiluhilu Development
Kau, North Kona, Hawaii, TMK: 3-7-2-05:01**

The Department of Education (DOE) has reviewed for a second time the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development, LLC master-planned community called Palamanui.

Based on the DEIS count of 590 single-family residential units and 175 multi-family units, the DOE estimates a total of 378 students could reside in the project once it has been fully built out. Palamanui students would probably attend Kealakehe Elementary School, Kealakehe Middle School, and Kealakehe High School.

The DOE's enrollment projections for each of its schools currently go as far as the 2009-2010 school year. To get a very rough idea of the impact of Palamanui students on the Kealakehe schools, we have compared enrollment projections with the current facility capacity number we use as a guideline for the number of students the school can accommodate. We project that in 2009-2010, Kealakehe Elementary's enrollment will be 84 students under the 2003-2004 facility capacity. We also project that Kealakehe Middle will be 37 students under the 2003-2004 capacity figure and Kealakehe High School will be 23 students over the 2003-2004 capacity figure. The enrollment projections take into account actual growth in enrollment over the past few years but do not specifically include any estimates of additional students residing in Palamanui.

We anticipate that the Palamanui students will increase enrollments at the Kealakehe schools that are expected to have reached their facility capacities around the 2009-2010 school year.

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

RECEIVED AS FOLLOWS

From: FACILITIES* vz Page: 2/2 Date: 9/1/2004 9:18:37 AM

Mr. George Atta
Page 2
September 8, 2004

The DOE requests that the State Land Use Commission include a condition with the standard fair-share language used in decisions on land use boundary amendments. The proposed wording is:

The Applicant shall contribute to the development, funding, and/or construction of school facilities, on a fair-share basis, as determined by and to the satisfaction of the Department of Education. Terms of the contribution shall be agreed upon in writing by the Applicant and the Department of Education prior to obtaining county rezoning.

The DOE's formula for determining a school fair-share contribution would be based on the actual number of units to be built and the assessed value of the residential land within the Palamanui project.

If you have any questions, please call Rae Loui, Assistant Superintendent of the Office of Business Services, at 586-3444 or Heidi Meeker of the Facilities and Support Services Branch at 733-4862.

Very truly yours,

Patricia Hamamoto
Supintendent

PH:jmb

c: Rae Loui, OBS
Mary Correa, CAS, Kau/Keaau/Pahoa Complex Area
Anthony Ching, SLUC
Nancy Heinrich, OEQC

RECEIVED AS FOLLOWS



Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
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Donna D. Pennington
Christine M. Ruotolo, AICP
James L. Stone, AIA
Scott Tengonan
Wesley N. Ujimori, AIA

September 9, 2004

Ms. Patricia Hamamoto, Superintendent
State of Hawaii
Department of Education
P.O. Box 2360
Honolulu, HI 96804

**Subject: Palamanui – A Hiluhilu Development Project
Draft Environmental Impact Statement (DEIS), July 2004
TMK: (3) 7-2-05:1
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii**

Dear Ms. Hamamoto:

Thank you for your letter of September 8, 2004 regarding your review of the July 2004 Draft Environmental Impact Statement (DEIS) for Palamanui – A Hiluhilu Development Project.

According to your letter, DOE estimates a total of 378 students could reside in the project once it has been fully built out. Palamanui students would probably attend Kealakehe Elementary School, Kealakehe Middle School, and Kealakehe High School.

According to DOE projections, by the year 2009 – 2010, Kealakehe Elementary enrollment will be 84 students under 2003-2004 facility capacity; Kealakehe Middle enrollment will be 37 students under the 2003-2004 facility capacity and; Kealakehe High will be 23 students over the 2003-2004 facility capacity. Full capacity of the Kealakehe schools are expected around 2009-2010.

The proposed Palamanui project will increase enrollments at the Kealakehe schools.

Hiluhilu Development will contribute to the development, funding, and/or construction of school facilities, on a fair-share basis, as determined by and to the satisfaction of the Department of Education. Terms of the contribution will be agreed upon in writing by Hiluhilu Development and the Department of Education prior to obtaining county rezoning. This language is explicitly stated in the project description, section 3.2.6 of the EIS report.

We understand that the DOE's formula for determining a school fair-share contribution will be based on the actual number of units to be built and the assessed value of the residential land within the Palamanui project.

Hiluhilu Development has scheduled a meeting with DOE on September 22, 2004 to discuss this matter.

RECEIVED AS FOLLOWS

Letter to Ms. Patricia Hamamoto
September 9, 2004
Page 2 of 2

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,

George J. Atta

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

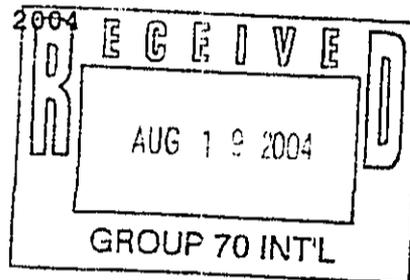
YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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

August 17, 2004

HILUHIDEIS.RCM6-2
A03-744

ATTN: George Atta
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307



LD-NAV

Dear Mr. Atta:

SUBJECT: Draft Environmental Impact Statement for the Palamanui
A Hiluhilu Development Project
Petition: A03-744
Applicant: Hiluhilu Development, LLC
TMK: (3) 7-2-005: 001

Thank you for the opportunity to review and comment on the subject matter.

A copy of the Draft Environmental Impact Statement pertaining to the subject matter was made available to the following Department of Land and Natural Resources' Divisions for their review and comment:

- Division of Forestry & Wildlife
- Division of State Parks
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Hawaii District Land Office

The Department of Land and Natural Resources has no additional comment to offer on the subject matter.

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at (808) 587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: HDLO

RECEIVED AS FOLLOWS

LINDA LINGLE
GOVERNOR OF HAWAII



ADMINISTRATOR
ASST ADMIN
DEV BR
PLAN BR
RES MGT BR
CLERICAL
ADMIN ASST
INTERP BR



AUG 3 - REC'D

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAH DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809
July 30, 2004

LD/NAV
Ref.: HILUHILU-7-2-5-1.CMT2

Suspense Date: 8/13/04

MEMORANDUM:

TO:

- *XXX Division of Forestry & Wildlife
- *XXX Division of State Parks
- *XXX Engineering Division
- *XXX Commission on Water Resource Management
- *XXX Office of Conservation and Coastal Lands
- XXX Land-Hawaii District Land Office (DD)

FROM: Deirdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Impact Statement for Hiluhilu
Development North Kona Judicial District, Island Of
Hawaii, Hawaii TMK: (3) 7-02-005: 001 *Wahalaia - Kona*

Please review the document pertaining to the subject matter
and submit your comments (if any) on Division letterhead signed and
dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro
at 587-0384.

Note: One (1) copy of the document is available for your review in
the Land Division Office, Room 220.

If this office does not receive your comments by the suspense
date, we will assume there are no comments.

(/) We have no comments.

() Comments attached.

Division State Parks

Signed:

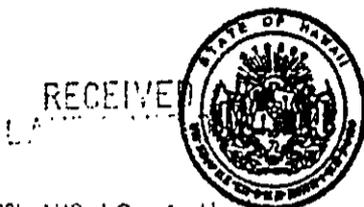
Date: AUG. - 9 2004

Title: State Parks Administrator

2004 AUG 11 A 10:51
C:\Program Files\...

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LINDA LINGLE
GOVERNOR OF HAWAII



2004 AUG 12 A.H.T.

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 30, 2004

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

YVONNE Y. IZU
DEPUTY DIRECTOR - WATER

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

LD/NAV

Ref.: HILUHILU-7-2-5-1.CMT2

Suspense Date: 8/13/04

MEMORANDUM:

TO:

- *XXX Division of Forestry & Wildlife
- *XXX Division of State Parks
- *XXX Engineering Division
- *XXX Commission on Water Resource Management
- *XXX Office of Conservation and Coastal Lands
- XXX Land-Hawaii District Land Office (DD)

FROM: Deirdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Impact Statement for Hiluhilu
Development North Kona Judicial District, Island Of
Hawaii, Hawaii TMK: (3) 7-02-005: 001

Please review the document pertaining to the subject matter
and submit your comments (if any) on Division letterhead signed and
dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro
at 587-0384.

Note: One (1) copy of the document is available for your review in
the Land Division Office, Room 220.

If this office does not receive your comments by the suspense
date, we will assume there are no comments.

We have no ^{additional} comments. Our comment (s) comments attached.
was incorporated in the Draft EIS document.

Division Engineering

Signed:

Date: 8/16/04

Title: ERIC T. HIRANO, CHIEF ENGINEER



GROUP 70
INTERNATIONAL

Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Atta, AICP
Paul P. Chomey, AIA
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Pete C. Galvez, AIA
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Stephen H. Kelly, AICP
Katherine M. MacNeil, AIA
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Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Donna D. Pennington
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

September 9, 2004

Diedre S. Mamiya, Administrator
Land Division
Department of Land and Natural Resources
State of Hawaii
Post Office Box 621
Honolulu, Hawaii 96809

RE: **Draft Environmental Impact Statement (DEIS), July 2004**
Palamanui - A Hiluhilu Development Project
TMK 3-7-2-05:01 North Kona, Island of Hawaii

Dear Mr. Mamiya:

Thank you for the letter of August 17, 2004 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Palamanui - Hiluhilu Development project.

We acknowledge that a copy of the Draft EIS was made available to the following DLNR Divisions for their review and comment:

- Division of Forestry and Wildlife
- Division of State Parks
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands and
- Land- Hawaii District Land Office.

We acknowledge that the Division of State Parks has no comments.

We acknowledge that the Engineering Division has no additional comments. Their comments were incorporated in the Draft EIS document.

These comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process. Please contact me if you have any further questions or comments.

Sincerely,
Group 70 International, Inc.

George I. Atta
George Atta, AICP
Chief Community Planner

cc: Guido Giacometti, Roger Harris, Alan Okamoto



September 15, 2004

Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Mr. Clyde W. Namu'o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

**Subject: Palamanui - A Hiluhilu Development Project
Environmental Impact Statement
TMK: (3)-7-2-05:01
Kau Ahupua'a, North Kona, Island of Hawai'i**

George I. Atta, AICP
Paul P. Chomey, AIA
Philip T. Cuccia
Pete C. Galvez, AIA
Sutobin Hallim
Roy A. Inouye, AIA, CSI
Charles Y. Kaneshiro, AIA
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Donna D. Pennington
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

Dear Mr. Namu'o:

This letter is provided to acknowledge that the Office of Hawaiian Affairs has previously raised various concerns regarding the proposed Palamanui project, to which we have responded in detail. The concerns included those over the adequacy of ground water resources and preservation of archaeological features and natural resources.

As we had covered in detail previously, the groundwater study showed that the potable water needs for this project can be met by the groundwater resources in this area. Hiluhilu is working with the Department of Water Supply to reach agreement on mutually acceptable terms for completion of Kau Well 1 and for suitable improvements to the Department of Water Supply transmission and storage systems.

Hiluhilu will not be using potable water for the golf course. The course will be planted with salt tolerant grass and irrigated with a combination of brackish water from wells to be developed on the project site and the treated wastewater from this site and the adjacent University land once development proceeds. The study shows that there is adequate brackish water for this purpose. Irrigation will be controlled to avoid excessive watering. Hiluhilu will be taking all appropriate measures to limit fertilizer and pesticide uses and to monitor the groundwater for adverse impacts as the development proceeds.

Studies have identified significant archaeological features, the existence of a regenerating lama forest, the presence of endangered tree species and biologically significant cave systems. We are proceeding with an Integrated Natural and Cultural Resource Management Plan (INCRMP) to address the issues presented. The plan will incorporate the work being done with the SHPD on the archaeological features and with the North Kona Dry Forest Working Group on a plan for the preservation of the lama forest. The development plans will include bicycle and pedestrian access throughout the project area. To the

Letter to Mr. Namu'o
September 15, 2004
Page 2 of 2

extent possible, these will incorporate access to the trail remnants that have been noted. Protection of significant caves and cave environments are a part of the INCRMP. Hiluhilu will continue to consult with Dr. Howarth on preservation of the biologically significant cave systems. Hiluhilu will also continue consulting with the Advisory Committee on the INCRMP and on its implementation.

We hope this letter provides you with sufficient degree of security in knowing that a substantial non-competing source of water, and a larger percentage of archaeological sites will be preserved, and affords the Office of Hawaiian Affairs the opportunity to remove its reservations regarding Hiluhilu Development LLC's petition to reclassify 725.2 acres of Conservation and Agricultural District into the Urban District.

We respectfully submit this letter to acknowledge your concerns and to provide a professional response as part of the environmental review process.

Sincerely,
Group 70 International, Inc.

George J. Atta

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto
Anthony Ching, LUC

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From: 9955398U Page: 2/4 Date: 9/7/2004 8:21:13 PM

UNIVERSITY OF HAWAII AT MANOA
Environmental Center

September 7, 2004

Mr. George Atta
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307

Dear Mr. Atta:

Draft Environmental Impact Statement
Palamanui – A Hiluhilu Development Project
North Kona, Hawai'i

The Hiluhilu Development proposes to develop a 725.2 acre vacant parcel in North Kona with residential units, a university village center and an 18-hole golf course. The site is located within the ahupua'a of Ka'u, near the Keahole International Airport, mauka of Queen Ka'ahumanu Highway and makai of the Makalei Estates. The property is privately owned by Hiluhilu Development, LLC.

The applicant has partnered with the University of Hawai'i in developing a University Village to support the proposed West Hawai'i Campus, located adjacent to the subject property. The Palamanui Development seeks to provide a mixed density of residential units, residences for the University and the community, a mixture of classroom and teaching labs, a cultural center, commercial areas, conference facilities, facilities for community outreach and commercial training support, parking, athletic fields and medical wellness facilities.

Infrastructure facilities to support the development include an internal circulation roadway network, a wastewater treatment and disposal system, a potable water supply and fire protection system, a non-potable water irrigation system and other utility systems. An airport access and mauka road will connect the village center to the main Ke'ahole Airport intersection on Queen Ka'ahumanu Highway.

The project involves the use of conservation district lands and will involve the reclassification of these conservation lands. The applicant will be seeking a Land Use Boundary Amendment to reclassify the existing Conservation and Agricultural District designations to an Urban District Designation.

2600 Dole Street, Krauss Annex 19, Honolulu, Hawai'i 96822-2913
Telephone: (808) 956-7361 • Facsimile: (808) 956-3980

An Equal Opportunity/Affirmative Action Institution

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From: 99563980 Page: 3/4 Date: 9/7/2004 6:21:14 PM

September 7, 2004
Page 2 of 2

This review was conducted with the assistance of Mark Merlin, Biology; George Curtis, UH Hilo Natural Sciences; and Dave Sims, Environmental Center.

General Comments

Our reviewers note extensive amplification of descriptive elements of the project (§3.0) that address concerns previously voiced in our review of the prior Draft EIS (RE: 0737; October 7, 2003). We commend the preparers of this draft for their attention to these concerns, and our only comment in this regard is that the present descriptive scope of the document if anything somewhat exceeds what is required in a project of this type. We also appreciate the elimination of irrelevant information, such as the substance of §6.2.2 in the prior document relating to tsunami hazards. Our reviewers specifically applaud the inclusion of market estimates and valuation projections in §3.2.1 as exemplary of information necessary to permit a meaningful evaluation of market feasibility for the proposed project. However, we continue to harbor concerns regarding questions of cumulative impacts or general socioeconomic analyses, as the information provided is not substantive or is lacking altogether. For instance, although listing of projects and other developments in the region which might contribute to cumulative impacts generally is comprehensive (i.e., §3.1.1.1; Figure 6.1), our reviewers found little quantitative assessment of impacts in terms of additional growth pressures on infrastructure, traffic, socioeconomic and public service demands, and similar projections necessary for implementing an orderly, long-range planning process. Although we recognize the inherent difficulty of precise predictive projections of population growth rates and ancillary demands, sufficient experience exists to anticipate percentage growth in residential and commercial populations, and to make appropriate extrapolations to utility, traffic, educational, and other public service needs. In view of the importance of this information both to evaluation of the economic feasibility of this proposed action and to future regional planning processes, these data should have been extensively discussed within the body of the draft EIS (ref. Section 11-200-19, Hawai'i Administrative Rules: "*Care shall be taken to concentrate in important issues and to ensure that the statement remains an essentially self-contained document, capable of being understood by the reader without the need for undue cross-reference.*").

Archaeology

We commend the preparation of an Integrated Natural Cultural Resource Management Plan (§3.2.5), and our reviewers urge that the cultural consultants be particularly aware of the possibility of impacts to cultural and archaeological resources due to the proximity of recreational areas, including the golf course. Depending on the sensitivity of archaeological resources in these areas, some exclusion fencing or other protective measures may be required to avoid inadvertent (or malicious) losses.

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From: 99563980 Page: 4/4 Date: 9/7/2004 8:21:14 PM

September 7, 2004
Page 3 of 3

Wastewater System Design

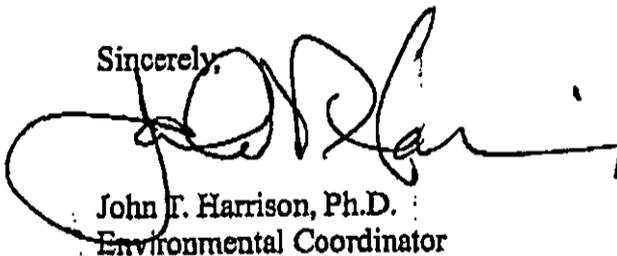
Layout schematics in Figure 3-10 indicate an anticipated reliance on aeration ponds for initial microbial digestion of the influent wastewater. At the volume projected (850,000 gpd) it appears likely that the planned ponds should provide adequate residence time, but either air injection or mechanical stirring will be required to prevent anoxia, with attendant and unwanted generation of sulfides. In addition, backup electric power for the WWTP will prevent interruption of aeration in the event of grid power lapses. Also, following the experience at the Kealakehe WWTP, it's likely, given the proximity to existing colonies at Keahole, that aeration ponds will be colonized by opportunistic endangered birds, including in particular Ae'o, the Hawaiian Stilt (*Himantopus mexicanus knudseni*), and the need for proactive management should be anticipated.

Traffic

Our reviewers expressed some concerns regarding the traffic analysis. While the TIAR was extensive, it was hard to find Level of Service figures on the three main roads involved as a function of development phase, estimated with and without the project. The phasing of the project offers a positive element, however, in that the incremental development gives the State a chance to improve the highways in the area. As noted earlier, the main defect is the apparent failure to include the cumulative effect of other probable projects in the District. Again, we are cognizant of the difficulties of such projections, as well as the challenges posed by apportioning responsibility for mitigation among various developers, but including some additional discussion of these concerns seems a reasonable requirement. In addition, our reviewers were unable to discern estimates of traffic generated by workers and service people in terms of trip-miles to and from their areas of residence.

Thank you for the opportunity to comment on this Draft EIS.

Sincerely,



John F. Harrison, Ph.D.
Environmental Coordinator

cc: OEQC
Hawaii State Land Use Commission
Hiluhilu Development
Mark Merlin
George Curtis
James Moncur
Dave Sims

RECEIVED AS FOLLOWS



September 15, 2004

Mr. John T. Harrison, Ph.D.
University of Hawaii
Environmental Center
2500 Dole Street
Krauss Annex 19
Honolulu, HI 96822-2313

RE: Draft Environmental Impact Statement (DEIS), July 2004
Palamanui - A Hiluhilu Development Project
TMK 3-7-2-05:01
North Kona, Island of Hawaii

Dear Dr. Harrison:

Thank you for the letter of September 7, 2004 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Palamanui - A Hiluhilu Development project.

We appreciate your review and comments regarding the residential, commercial, University development. With reference to your letter, the following are offered in response to your comments:

General Comments:

Cumulative impacts and general socioeconomic analyses are provided throughout the EIS.

While we note the preference for more precise quantitative data, as you note in your comments, the identification of precise quantitative projections is very difficult to make. We tried to identify major projects in the area but to identify quantitative impacts for sewer water and other impacts are both difficult and we feel, an inefficient exercise. The level of detail and accurate information available is widely varied. The timing for many of these projects is uncertain. The possibility of changes in project design and impacts is great. These uncertainties make the effort difficult highly speculative. As a proxy for these issues, we have relied on general governmental population projections and increases in ambient traffic levels in transportation models to cover the potential cumulative impact of these other projections. Given the quality of the data and inherent uncertainties of development, we feel this is a reasonable assessment of cumulative impacts. Having said that, we offer the following responses:

Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
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Letter to Mr. John T. Harrison, Ph.D.
September 15, 2004
Page 2 of 4

1. The text in the DEIS presented the information in the marketing studies regarding population and job growth in the area. Since these were marketing studies, they reviewed the situation in terms of household growth (3.2.1) and broke down projected housing demand by type of housing. That in turn allowed an estimate on the number of new dwellings that would be required during the study period (2.2.1). A similar analysis was done for the commercial demand analysis by using projected job growth in the Kona economy (2.2.2, 3.2.2). Not surprisingly, the analysis showed a strong demand for housing in the Kona area.

2. The text in the DEIS also covered various future needs for infrastructure and for public services created by this project. Discussion on anticipated impacts for these areas is in Part VI of the text.

For public services, the text also includes discussions on the fiscal impacts of the project from the standpoint of the State and County governments. That information is supplemented by the fiscal impact analysis, which reviewed the anticipated general costs to government from this project and the anticipated revenues from it (6.2.15.1). This study shows that there will be substantial revenue generated which government can use to meet demands for additional public services.

3. The DEIS text relating to traffic provides readers with existing traffic conditions (Fig 4-10 and 4-3) based on the traffic impact analysis. It also presents the projected future conditions with mitigation for the two alternatives being considered for the access to Queen Kaahumanu Highway. That information includes the Levels of Service for those future conditions (6.2.16). Since the analysis involved two State highways and 5 to 6 intersections (depending on which alternative is chosen), we decided not to include in the text all of the tables contained in the traffic impact analysis. We felt the presentation would have become unnecessarily lengthy and confusing. This represents a judgment call as to how to best present the information that is in the analysis.

The analysis included DOT traffic growth assumptions for this area, which should include known future development for the specific projects that are in the immediate vicinity of this project, as well as other areas of Kona.

We have also been discussing our plans with the County of Hawaii regarding their plans for a north south road system in this area.

4. As the DEIS indicates, the project is expected to increase demand for public school facilities (6.2.18.4). Hiluhilu will be working with the DOE to enter into an Educational Contribution Agreement. That agreement will address fair share contribution fees and if the DOE indicates that it wishes to establish a school site within the project, the contribution of appropriate land with adequate infrastructure. A meeting with the DOE has been scheduled for September 22nd to discuss this issue.

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Letter to Mr. John T. Harrison, Ph.D.
September 15, 2004
Page 3 of 4

We value the orderly long range planning process. For this purpose, we look to the State and County agencies to provide coordination of long-range plans for the region. Additionally, the DEIS considered impacts of this project over time. This required projections of various factors over the life of the project, some of which involved effects beyond the boundaries of the project. However, since this is an environmental impact assessment, the text is necessarily focused on how this project impacts the community. Part V contains a discussion on how the project relates to the applicable land use classifications and plans.

Regarding your comment about the readability of the DEIS and its need to be a "self-contained document", we have worked to make the main body as self-contained as possible. At the same time much of the detailed parts of special studies belong in an appendix to enhance readability. This separation is a judgmental call and we feel we have placed enough text and information in the main body to meet the intent of the regulations.

Archaeology: We will make sure the cultural consultants are aware of the possibility of impacts to cultural and archaeological resources due to the proximity of recreational areas, including the golf course. Consultants are aware of the proposed project elements and will continue to provide input in the management of resources as the project develops. Exclusionary fencing is one of the proposed mitigative strategies being considered to minimize inadvertent losses from golf activities.

Wastewater System Design: We are aware of the possibility of Ae'o colonization of the aeration ponds. We are also aware of the potential hazards of bird populations near airport flight paths. Management of the wastewater plant will minimize the likelihood of this occurring.

Traffic: Existing Level of Service of the three main roads are described in the TIAR and repeated in Section 4.15, Figure 4-10 and Table 4-3 of the EIS.

Cumulative effects of other probable projects in the District are described to the best extent possible from existing knowledge in Section 6. 2. 16 of the EIS as taken from the TIAR.

As described in the unresolved issues section 8.3 of the EIS, we are working with the Department of Transportation in determining the fair share contribution of infrastructure in the region. The discussion on fair share is dependent on the State DOT identifying each developer's proportional contribution to impacts at specific intersections and along sections of the affected highways. We are awaiting response from the State DOT to determine each developer's fair share of the various regional improvements that will be needed to accommodate traffic generated by Palamanui and other planned developments in the region. Their input will help to better understand the regional impact.

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Letter to Mr. John T. Harrison, Ph.D.
September 15, 2004
Page 4 of 4

Traffic generated by workers and service people in terms of trip miles to and from their areas of residence is factored into the overall TIAR for the project.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,
Group 70 International, Inc.

George J. Atta

George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

RECEIVED AS FOLLOWS

SEP-07-04 04:18PM FROM: 8085868129 Page: 2/5 Date: 9/7/2004 4:15:15 PM 1-024 P. 02/03 P-001
FROM: DISABILITY AND COMMUNICATION ACCESS BOARD 8085868129



DISABILITY AND COMMUNICATION ACCESS BOARD

919 Ala Moana Boulevard, Room 101 • Honolulu, Hawaii 96814
Ph. (808) 586-8121 (V/TDD) • Fax (808) 586-8129

September 07, 2004

Mr. George Atta
Chief Community Planner
Group 70 International, Inc.
925 Bethel Street
Fifth Floor
Honolulu, HI 96813-4307

Regarding: Palamanui - A Hiluhilu Development Project
Draft Environmental Impact Statement (DEIS)
TMK Nos: 3-7-2-05:01
Ahupua'a of Kau, North Kona Judicial District
Island of Hawaii

Dear Mr. Atta,

Thank you for providing us the opportunity to review and respond to the Draft Environmental Impact Statement (DEIS) prepared by Group 70 International, Inc. The notice is for the Master Planned Community of Palamanui, a Hiluhilu Development Project, located in the ahupua'a of Kau between Queen Kaahumanu Highway and Makalei Estate in North Kona on the Island of Hawaii. The purpose of our comments are to ensure that the Hiluhilu Development, LLC, will take into account accessibility design requirements for persons with disabilities in the DEIS. This supplements our comments dated to the Environmental Impact Statement Preparation Notice (EISPN) dated July 19, 2004.

We offer the following comments:

1. It is anticipated that the Project arterial roadways, connector roadways, walkways, and other types of vehicular and pedestrian access to service the residential, retail and commercial lots being created will be dedicated to the County of Hawaii or State as part of the public right-of-way system. It is also anticipated that parts of the initial phases of University Village including, but not limited to, buildings for college use, parking facilities, parks and public recreational facilities being created will be in all probability be dedicated to the County or State. In addition, major infrastructure improvements such as electrical switching and transformer substations, a sewage treatment plant system, university leases, student housing, assisted living facilities and potential multi-family dwellings may be dedicated. These types of dedications will fall within the scope of the Americans with Disabilities Act (ADA) Title II covering state and local governments, the Fair Housing Act and other guidelines as required by the Hawaii Revised Statutes (HRS) §103-50. Although the technical requirements are nearly identical, there are areas of difference. If there is an intent to dedicate a portion of this project to State or county governments, the HRS §103-50 contains a requirement for a review process by the Disability and Communication Access Board for these portions of the proposed site development. Please ensure that this requirement is included in Chapter 9, "Required Approvals and Permits".

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SEP-01-04 04:20PM FROM: 8085888129 Page: 3/5 Date: 9/7/2004 4:15:15 PM
FROM: DISABILITY AND COMMUNICATION ACCESS BOARD 000000148 1-024 P.03/03 P.001

George Atta, AICP
Group 70 International, Inc.
Regarding: Palamanui DEIS
September 07, 2004
Page 2

2. Any proposed private infrastructure systems and amenities for commercial and public use within the boundaries of this site, will not be subject to the requirements of the HRS§ 103-50, Chapter 3, Project Description, Section 3.2.7.1 Roadway System, Minor Roads (page 3-21) indicates that sidewalks were not being provided along minor roads in single family residential areas and low-density commercial/institutional areas but are being provided in the village areas. Based upon DCAB's experience the public has commented linkages to places of public accommodation are needed within communities. Any proposed private infrastructure systems and amenities for commercial and public use within the boundaries of this site not subject to the HRS§ 103-50 requirements will be subject to the requirements of Title III of the ADA, which covers privately owned places of public accommodation and commercial facilities. Accessibility requirements are not limited to elements such as the proposed semi-public 18-hole golf course, research laboratories, commercial retail spaces, commercial residential spaces, and public sidewalks along minor roads in the village areas. It is recommended to provide accessible sidewalks along minor roads in single family residential areas and low-density commercial/institutional areas that will connect to the minor road sidewalks in the village areas.
3. Chapter 6, Probable Impacts and Mitigative Measures, Section 6.2.16 Roadways and Traffic (page 6-37) indicates that county plans encourage the development of mauka-makai roadways to carry area traffic and provide alternative routes between Mamalahoa Highway and Queen Ka'ahumanu Highway. Full compliance for accessibility is required. This includes, but is not limited to, accessible pedestrian walkways, accessible curb ramps, accessible bus stops, pedestrian traffic signals, etc. The plan indicates that the street grades in the upper mauka slopes could make the engineering of these routes difficult. Please note that "difficulty" does not exempt the design from compliance. Full compliance will be considered structurally impracticable only in those rare circumstances when the unique characteristics of terrain can justify the prevention of incorporating accessibility features. If full compliance for accessibility is structurally impracticable, the Project shall comply with the the HRS§ 103-50 requirements to the extent it is not structurally impracticable. The Disability Communication Access Board (DCAB) provides a "Structural Impracticable" Statement form that can be used for each justifiable condition on a case by case basis relating to the project under review in accordance with the HRS§103-50.
4. The Disability and Communication Access Board incorporates the following guidelines in the review process:
 - a. The "Americans with Disabilities Act Accessibility Guidelines" (Department of Justice (DOJ), published July 1, 1994 revised).
 - b. The "Fair Housing Act Accessibility Guidelines" (Department of Housing and Urban Development published March 13, 1991 and supplement published June 28, 1994).
 - c. The "State of Hawaii's Residential Accessibility Guidelines" (published September 1995).
 - d. The "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities; State and Local Government Facilities; Final Rule" (Federal Register published January 13, 1998).

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From: 8085868129 Page: 4/5 Date: 9/7/2004 4:15:16 PM
FROM: DISABILITY AND COMMUNICATION ACCESS BOARD 8085868129 1-024 P. 09/03 P.031

George Atta, AICP
Group 70 International, Inc.
Regarding: Palamanui DEIS
September 07, 2004
Page 3

- e. The "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities; Building Elements Designed for Children's Use; Final Rule" (Federal Register published January 13, 1998).
 - f. The Disability and Communication Access Board's (DCAB) "Interpretive Opinions" addressing clarification of the various accessibility guidelines.
5. Additional recommended references in the planning process:
The U.S. Architectural and Transportation Barriers Compliance Board has available the following documents for best design practices:
- a. The "Regulatory Negotiation Committee on Access to Outdoor Developed Areas; Final Report", published September 1999.
 - b. "Designing Sidewalks and Trails for Access" Part I & II, published July 1999.
 - c. "Accessibility Guidelines for Public Rights of Way - Draft Guidelines", June 17, 2002. These documents will provide this project with information that may be helpful in the long range planning of the site.
 - d. The "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities; Recreation Facilities; Final Rule", published September 3, 2002.

For further information, contact the Office of Technical and Informational Services, U.S. Architectural and Transportation Barriers Compliance Board, 1331 F Street, N.W., Suite 1000, Washington, D.C. 20004-1111; phone numbers (800) 872-2253 (V), (202) 272-0080 (TTY), (202) 272-0082 (Fax); and e-mail address to access publications www.access-board.gov.

6. Parking requirements required by the Hawaii Administrative Rules (HAR):
If parking is provided the project it must comply with Hawaii's Administrative Rules (HAR) Title 11, Chapter 219, "Parking for Persons with Disabilities", that became effective January 23, 2003. Section 11-29-14. Further information about "The Administrative Rules and Exhibits" can be obtained from our web site: www.hawaii.gov/health/dcab/. If you do not have access to the Internet, please call us for a copy of the rules and exhibits.

7. It is recommended to include a general accessibility statement in the final master plan:

"All facilities will be designed to meet the requirements of the Americans with Disabilities Act, the Fair Housing Act, and the requirements of Hawaii Revised Statutes (HRS) §103-50. Parking for facilities will be designed to comply with Hawaii's Administrative Rules (HAR) Title 11, Chapter 219, Parking for Persons with Disabilities, Section 11-219-14. Buildings, facilities, and sites will also incorporate the best design practices as recommended by the U.S. Department of Transportation for designing sidewalks and trails and the U.S. Access Board for designing outdoor developed areas, recreation areas, or other current documents providing for accessibility".

The above reflects staff's technical assistance comments. They do not reflect our Board's approval or disapproval of the Plan. Again, thank you for giving us this opportunity to provide comment.

RECEIVED AS FOLLOWS

SEP 07 04 09:21 PM FROM DISABILITY AND COMMUNICATION ACCESS BRDD 808888129 Page: 5/5 Date: 9/7/2004 4:15:18 PM 1-024 P.03/03 17031

George Atta, AICP
Group 70 International, Inc.
Regarding: Palamanui DEIS
September 07, 2004

Page 4

Should you have any questions or concerns, please feel free to contact Mr. Gary L. Batcheller, Facility Access Specialist, or Mr. Curtis Motoyama, Facility Access Coordinator, at 586-8121.

Sincerely,



FRANCINE WAI
Executive Director

c: Nancy Heinrich
Office of Environmental Quality Control
235 South Beretania Street
Suite 702
Honolulu, HI 96813



Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Milki, AIA

George I. Alta, AICP
Paul P. Chomey, AIA
Philip T. Cuccia
Pete C. Galvez, AIA
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Jeffrey H. Overton, AICP
Donna D. Pennington
Christine M. Ruotolo, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

September 9, 2004

Francine Wai, Executive Director
Disability and Communication Access Board
919 Ala Moana Boulevard, Room 101
Honolulu, Hawaii 96814

**RE: Draft Environmental Impact Statement (DEIS), July 2004
Palamanui - A Hiluhilu Development Project
TMK 3-7-2-05:01
North Kona, Island of Hawaii**

Dear Ms. Wai:

Thank you for the letter of September 7, 2004 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Palamanui - Hiluhilu Development project.

Your comments regarding accessibility design requirements for persons with disabilities will be accounted for in the development of the proposed Palamanui project. Specifically, your concerns are addressed in section 5.2.2 of the EIS report.

1. We expect that elements of the project planned for dedication to the County or State of Hawaii may be subject to a review process by the Disability and Communication Access Board. A review by the Disability and Communication Access Board will be noted as a requirement as needed in Chapter 9 of the Final EIS report.

2. We will refer to Title III of the ADA which covers privately owned places of public accommodation and commercial facilities for the proposed private infrastructure systems and amenities for commercial and public use within Palamanui. This includes, but is not limited to, elements such as the semi-public 18-hole golf course, research laboratories, commercial retail spaces, commercial residential spaces, and public walking surfaces.

3. Thank you for your input on the requirement of full compliance for accessibility in regards to the proposed roadway and traffic systems of the proposed plan. We will review HRS 103-50 and the DCAB rules regarding compliance and structural impracticability.

4. Thank you for providing the list of guidelines used by the Disability and Communication Access Board in the review process. These materials will be reviewed as necessary.

Letter to Francine Wai
September 9, 2004
Page 2 of 2

5. We will also refer to the U.S. Architectural and Transportation Barriers Compliance Board documents for additional guidance in designing the proposed facilities.

6. Where parking is provided, we will comply with Hawaii's Administrative Rules Title 11, Chapter 219, "Parking for Persons with Disabilities" which became effective January 23, 2003.

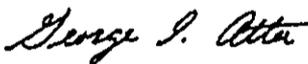
7. The Final Environmental Impact Statement will include the following statement:

"Facilities will be designed to meet the requirements of the Americans with Disabilities Act, the Fair Housing Act, and the requirements of Hawaii Revised Statutes (HRS) Section 103-50. Parking for facilities will be designed to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 219, Parking for Persons with Disabilities, Section 11-219-14. Buildings, facilities and sites will also incorporate the best design practices as recommended by the U.S. Department of Transportation for designing sidewalks and trails and the U.S. Access Board for designing outdoor developed areas, recreation areas, or other current documents providing for accessibility."

We recognize that your comments reflect staff technical assistance comments and are not the reflection of Board approval or disapproval of the proposed plan. We appreciate the technical review you have provided.

Your comment letter and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process. Please contact me if you have any further questions or comments.

Sincerely,
Group 70 International, Inc.

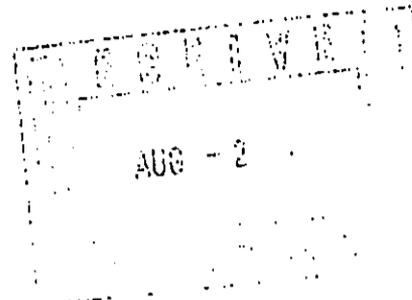

George Atta, AICP
Chief Community Planner

cc:
Guido Giacometti
Roger Harris
Alan Okamoto

RECEIVED AS FOLLOWS

July 29, 2004

Mr. George Atta
Group 70 International
925 Bethel Street
5th Floor
Honolulu, HI 96813-4307



RE: Palamanui Project - EIS

Dear Mr. Atta:

On behalf of the Makalei Estates Community Association, I wish to express the views of the Association regarding this project. We believe the project will bring many benefits to the community, and overall, we support it. However, we are vehemently opposed to allowing Makalei Drive to become part of any system allowing through traffic from Queen Kaahumanu Highway. Any such efforts will be met with the strongest possible legal resistance.

Quite simply, Makalei Drive is too steep and dangerous to be part of a connector system. The road was not designed to carry this type of traffic as, within the first half mile from the entrance to the subdivision, it contains two 18 degree slopes separated by one of 15 degrees. It is our understanding slopes of this magnitude fall completely outside of established standards for a road intended for this use.

In addition, the road contains sweeping curves which, while furnishing spectacular views, only add to the problems created by the grade of the slopes. It is nearly impossible to abide by the posted speed of twenty five miles per hour while descending, while ascending vehicles are often unable to do so without first attaining excessive speeds. We see non-resident vehicles exceeding the limits every day.

Having investigated and handled insurance claims for nearly thirty five years, it is my professional opinion this is a dangerous situation and a horrible accident is inevitable. Unfortunately, it will probably result in a car crashing into a residence, likely maiming or killing someone other than the occupants of the involved vehicles.

While we acknowledge the need for additional roads in Kona, alternatives exist that will not require the use of Makalei Drive for through traffic. We are willing to offer our support to this project, but not at the expense of our safety.

Sincerely,

Jerry Schneyer
President, Makalei Estates Community Association
72-1173 Ho'opai Road
Kailua-Kona, HI 96740 (808) 937-0770



Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
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Donna D. Pennington
Christine M. Ruotolo, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

September 9, 2004

Jerry Schneyer, President
Makalei Estates Community Association
72-1173 Ho'opai Road
Kailua-Kona, Hawaii 96740

**RE: Draft Environmental Impact Statement (DEIS), July 2004
Palamanui - A Hiluhilu Development Project
TMK 3-7-2-05:01
North Kona, Island of Hawaii**

Dear Mr. Schneyer:

Thank you for the letter of July 29, 2004 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Palamanui - Hiluhilu Development project.

We appreciate your written letter of support for the proposed project.

Your letter states that you are vehemently opposed to allowing Makalei Drive to become part of any system allowing through traffic from Queen Kaahumanu Highway.

As you may be aware, the County of Hawaii would like to see a mauka-makai connector road between Queen Kaahumanu Highway and Mamalahoa Highway. Their Keahole to Kailua ("K to K") Plan calls for a mauka-makai roadway through the Palamanui site. Specifically, the plan indicates a winding roadway through the Palamanui site that links to the existing Drive through Makalei Estates.

The grade of the road through Makalei Estates is very steep and does not meet grade standards for a collector street. The substandard nature of Makalei Drive is a problem.

Ideally, an alternate route with a gentler slope should be developed but such a route will require adjustments that involve other landowners and alternate financing methods. The County Planning Department and other agencies may consider another alignment, which follows more favorable terrain by heading north along contour lines before connecting with Mamalahoa Highway. However, this issue remains unresolved at this time.

In response to your concerns and other similar concerns, Hiluhilu is earnestly working with the County Planning Department and others to establish an

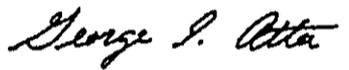
Letter to Jerry Schneyer
September 9, 2004
Page 2 of 2

alternate route for a connection to Mamalahoa Highway. Hiiuhilu would like to meet with you in the near future to discuss this.

Attention to safety issues are being given high priority in the siting and designing of the proposed roadway connection.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process. Please contact me if you have any further questions or comments.

Sincerely,
Group 70 International, Inc.



George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

RECEIVED AS FOLLOWS



**NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY
(NELHA)**

An Agency of the State of Hawaii

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307

Dear Mr. Atta:

The Natural Energy Laboratory of Hawaii Authority (NELHA) is a State agency affiliated with the Department of Business, Economic Development and Tourism. NELHA administers an 870-acre ocean science and technology facility that fosters economic development and diversification related to aquaculture, biotechnology, alternative energy and other sustainable industries. We have reviewed the Draft Environmental Impact Statement, dated July 2004, for the Palamanui - Hiluhilu Development Project and offer the following comments:

Pristine seawater is the lifeblood of the tenants at NELHA and it is essential that the quality of this vital resource be maintained and protected. The Palamanui project, located mauka of the NELHA, includes a golf course, medical facility, wastewater treatment plant and stormwater injection wells that could impact groundwater and coastal water quality. We concur with the Department of Transportation, Airports Division, that a ground water monitoring well system, that includes at least one well at the westernmost boundary of the Palamanui site (or on airport property immediately west of the highway) and one or more observation wells on Kona International Airport property down-gradient from the golf course and any wastewater injection wells, be developed to detect any adverse affects the project might generate. Ground water monitoring wells should be completed very early in any development schedule in order for them to clearly establish baseline values. The creation of the monitoring program should be coordinated with ground water monitoring programs already in place at the airport and NELHA. For example, NELHA has collected offshore water quality data since 1981 and groundwater monitoring data from an array of wells as part of its Cooperative Environmental Monitoring Program since 1992. We recommend that all data collected from the Palamanui monitoring program be shared with the airport and NELHA to develop a more regional approach to the groundwater monitoring in this vicinity.

We request that NELHA be added to your distribution list and a copy of all subsequent Environmental Impact Statements pertaining to the Palamanui development be mailed directly to:

Natural Energy Laboratory of Hawaii Authority
7304460 Queen Kaahumanu Hwy., #101
Kailua-Kona, HI 96740

Sincerely,

Jeff L. Smith
Executive Director, NELHA



Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
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Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

September 9, 2004

Mr. Jeff L. Smith, Executive Director
Natural Energy Laboratory of Hawaii Authority
73-4460 Queen Kaahumanu Highway, #101
Kailua-Kona, Hawaii 96740-2637

**RE: Draft Environmental Impact Statement (DEIS), July 2004
Palamanui – A Hiluhilu Development Project
TMK 3-7-2-05:01
North Kona, Island of Hawaii**

Dear Mr. Smith:

Thank you for the letter regarding your review of the Draft Environmental Impact Statement (DEIS) for the Palamanui - Hiluhilu Development project.

We recognize that NELHA is located hydraulically down gradient from the proposed project. This project includes a number of mitigation measures to minimize impacts from the proposed project upon groundwater, coastal water and NELHA activities.

As described in 6.2.5 of the Final EIS, Hiluhilu will develop a water quality-monitoring program and install at least one on-site groundwater monitoring well. Golf course and stormwater systems will be designed, constructed, and operated to minimize the risk of pollutants entering the groundwater. Golf course irrigation (including the use of treated wastewater), fertilizer and pesticide applications will be professionally managed and controlled under best management practices. The effects of such irrigation and applications will be monitored on an ongoing basis. Drywells and retention basins will be designed to filter pollutants. Also, golf course maintenance and storm water management plans will identify mitigative measures to be taken if such contaminants are found.

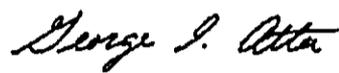
To the extent possible, ground water monitoring programs will be completed early in the development schedule to establish baseline values. We will coordinate with ground water monitoring programs already in place at the airport and NELHA. We have committed to one new monitoring well. We propose to meet with DOT Airports to observe their monitoring wells and data. After that, a final monitoring plan can be agreed upon. Data collected from the Palamanui monitoring program will be shared with the Airport and NEHLA.

NELHA will be added to the distribution list relating to the Palamanui development.

Letter to Jeff L. Smith
September 9, 2004
Page 2 of 2

Your comment letter and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process. Please contact me if you have any further questions or comments.

Sincerely,
Group 70 International, Inc.



George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

June 10, 2004

Anthony Ching
Land Use Commission
PO Box 2359
Honolulu, HI 96804

Dear Mr. Ching:

Subject: Environmental Impact Statement (EIS) Preparation Notice
Palamanui Development, North Kona

In order to reduce bulk and save on paper, please print on both sides of the pages in the EIS. In addition we have the following comments to offer:

Figures: All figures should include a north arrow and a scale in order to indicate orientation and magnitude.

Community Contacts:

Will you give any public presentations or workshops on the development? If so include a synopsis of the topics raised during these events in the draft EIS.

Be sure to document all contacts in the draft EIS, including those made during the scoping phase, and include copies of any correspondence.

Visual impacts: Identify public viewpoints of the project site from which visual impacts may occur, especially of mauka and makai viewplanes. Show these impacts by superimposing a rendering of the proposed facilities onto photographs taken from public vantage points.

Cumulative impacts: The cumulative impact that this development will have on the region should be done treating it and the UH Center West Hawaii campus as a whole. You will undoubtedly be asked this many times over the course of the review period.

Terms, abbreviations and acronyms: It would be helpful for the reviewer if the draft EIS included a glossary of terms, abbreviations and acronyms.

Landscaping: The EISPN discusses golf course landscaping. Do you have a landscaping plan for the non-golf course areas? Does it include irrigation with reclaimed water?

Anthony Ching
June 10, 2004
Page 2

Permits: In the table in section 3.7 indicate the status of the various permits. If permit applications have not yet been filed, list the anticipated dates of filing.

Senior housing: Senior housing is one of the residential components. During the design phase consult with the Area Office on Aging or other seniors advocacy group to make sure the design elements do not inadvertently discourage "aging in place."

If you have any questions call Nancy Heinrich at 586-4185.

Sincerely,


GENEVIEVE SALMONSON
Director

c: George Atta



September 9, 2004

Geneveive Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

RE: **Environmental Impact Statement Preparation Notice (EISPN), May 2004
Palamanui – A Hiluhilu Development Project.
TMK 3-7-2-05:01
North Kona, Island of Hawaii**

Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
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Jeffrey H. Overton, AICP
Donna D. Pennington
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

Dear Ms. Salmonson:

Thank you for the letter of June 10, 2004 regarding your review of the Environmental Impact Statement Preparation Notice (EIS) for the Palamanui - Hiluhilu Development project.

This is the first time that we are seeing this letter. We did not receive a copy of this letter during the preparation of the Draft EIS and therefore it was not included in the Draft EIS report. We will be addressing the concerns raised in your June 10, 2004 letter in the preparation of the Final EIS. The following are responses to your comments:

1. **Printing:** The EIS report pages will be double-sided to reduce bulk.
2. **Figures:** North arrows and a scale will be included in figures in order to provide an indication of orientation and magnitude.
3. **Community Contacts:** Hiluhilu Development has been in contact with the community about the development of Palamanui on several occasions and in various venues. On an individual level, kupuna of the area have been interviewed.
4. **Visual impacts:** The EIS includes a rendering of the proposed facility superimposed onto a photograph taken from a public vantage point as requested. Figure 3-4 of the EIS illustrates the view impacts of Palamanui project looking mauka.

Lines of sight and orientation to significant landscape features will be considered in an ongoing fashion as the project develops in a manner that addresses comments and recommendations from the cultural impact study.

Letter to Geneveive Salmonson
September 9, 2004
Page 2 of 2

5. Cumulative impacts: The EIS does describe cumulative and interrelated impacts associated with existing, approved and foreseeable future projects, which may produce related or additive impacts, including impacts anticipated by the University of Hawaii Center West Hawaii campus. As you are aware, there are a number of projects in the region, which will have a cumulative impact on the Kona area. Chapter 6 of the EIS identifies and describes these projects. Hiluhilu Development has water credit agreements with Kohanaiki and development of one will have some impact on the development on the other projects.
6. Terms, abbreviations and acronyms: A glossary is provided in the Final EIS report.
7. Landscaping: A landscaping plan for non-golf course areas will be developed at a later stage of the project. Landscaping plans will support Hiluhilu Development's efforts to be energy efficient. Location of trees, hedges and fences will be factors in the landscaping design. Endemic and indigenous plants native to the region will be encouraged.
8. Permits: A table listing the status and anticipated dates of filing of the various permits are included in the Draft and Final EIS reports.
9. Senior housing: Thank you for the suggestion to consult with the Area Office on Aging or other senior advocacy groups to make sure the design elements do not inadvertently discourage "aging in place." During the design phase of the project, such groups will be consulted.

We apologize for not including your comment and this response letter into the Draft EIS. Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process. Please contact me if you have any further questions or comments.

Sincerely,
Group 70 International, Inc.

George I. Atta
George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto



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

OFFICE OF PLANNING

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

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
STEVE BRETSCHNEIDER
DEPUTY DIRECTOR
MARY LOU KOBAYASHI
ADMINISTRATOR
OFFICE OF PLANNING

Telephone: (808) 587-2848
Fax: (808) 587-2824

Ref. No. P-10530

July 14, 2004

'04 JUL 20 P3:50

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Subject: Hiluhilu Development, LLC
Environmental Impact Statement Preparation Notice (EISPN)

Hiluhilu Development, LLC, proposes to develop 590 single-family lots and 255 multi-family residential units on 725.2 acres in North Kona. The community (Palamanui), will include an eighteen-hole golf course, clubhouse, driving range, and commercial facilities, and further integrate these proposed uses around a "University Village Center." Hiluhilu Development will develop university facilities and supporting infrastructure on the Hiluhilu parcel to facilitate future hook-up to the proposed campus for the University of Hawaii Center at West Hawaii (UHCWH). The project will also include a 120-unit hotel or University Inn.

In addition to the proposed uses identified above, the Palamanui Community will include commercial and university residential facilities, health facilities, athletic fields, research and development facilities, archaeological preserves, cave and lava tube preserves, a dry forest preserve, passive and active parks, open space, and parking areas.

Given the sensitive native botanical ecosystems within the dry forest preserve, we question the efficacy in establishing the area as a preserve while providing residents and the public, open space and low intensity outdoor wildness opportunities. The proposed use may conflict with efforts proposed by the developer to prevent introduction of alien species.

The developer will provide 100 affordable housing units according to the "agreements established" with County and State housing agencies. The County of Hawaii is in the process of revising its affordable housing policy. The Draft Environmental Impact Statement (DEIS) should provide discussion as to whether the project's affordable housing requirement was determined under the County's present affordable housing policy or the proposed revisions.

According to the information provided in the EISPN, "...the design (of University Village) would not work as well if only one side of the village were to be developed." In light of this, the DEIS should discuss the feasibility of Hiluhilu Development constructing a signature anchor building, and leasing it back to UH and/or the progress made by the University to build a "signature structure" at the southern end of the Main Street axis.

Mr. George Atta
Page 2
July 14, 2004

According to the EISPN, Hiluhilu Development will reserve the necessary corridor for the County's Midlevel Road, Main Street, and the Kealakaa Street Extension right of ways, and will construct major arterial roadways servicing the project area. Hiluhilu will configure the infrastructure to allow expansion of UHCWH operations along the "Main Street" corridor onto the 500-acre parcel to the south.

The EISPN indicates that a through road connecting to the project access road from Queen Kaahumanu Highway will continue through the parcel to the east end of the parcel. At the eastern boundary, the mauka-makai road will connect to the existing mauka-makai road through Makalei Estates that connects to Mamalahoa Highway. Mauka-makai roads are an important component of effective traffic circulation in this region. The DEIS should fully discuss the availability of this accessway.

The State has an interest in assuring right-of-ways for planned County regional roadways such as the Midlevel Road and Main Street (Keahole to Kailua Development Plan) and mauka to makai accessways because these roadways contribute to a state-county traffic circulation network for the region. Adequate county roadways will help to support Queen Kaahumanu Highway's functions as a high speed regional thoroughfare.

The primary access to the project site will be provided either at the western boundary of the Hiluhilu parcel or by means of a new roadway intersecting Queen Kaahumanu Highway at its intersection with the existing Keahole Access Road. Hiluhilu Development will provide more information on these alternative project access roadways in the DEIS. Coordination with the Department of Transportation and other affected State agencies should continue on the alignment of the project access roadway.

Thank you for the opportunity to comment on the subject EISPN. Should you have any questions, please call Judith Henry at 587-2803.

Sincerely,

Mary Lou Kobayashi

Mary Lou Kobayashi
Administrator

c: Anthony Ching, LUC
✓ Genevieve Salmonson, OEQC



September 9, 2004

Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
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Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Atta, AICP
Paul P. Chomey, AIA
Philip T. Cuccia
Pete C. Galvez, AIA
Sutobin Halim
Roy A. Inouye, AIA, CSI
Charles Y. Kaneshiro, AIA
Stephen H. Kelly, AICP
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Donna D. Pennington
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

Mary Lou Kobayashi, Administrator
Office of Planning
Department of Business, Economic Development & Tourism
State of Hawaii
235 South Beretania Street, 6th Floor
Honolulu, Hawaii 96813

**RE: Environmental Impact Statement Preparation Notice (EISPN), May 2004
Palamanui – A Hiluhilu Development Project
TMK 3-7-2-05:01
North Kona, Island of Hawaii**

Dear Ms. Kobayashi:

Thank you for the letter of July 14, 2004 regarding your review of the Environmental Impact Statement Preparation Notice (EISPN) for the Palamanui - Hiluhilu Development project.

We will discuss your concerns regarding the efficacy of access to the dry forest preserve and the prevention of introducing alien species with the dry forest working group team of specialists. We will develop a plan with protocols to prevent this occurrence. Contingency plans will also be developed to control any inadvertent incidents.

The project's affordable housing requirement is based on existing County affordable housing policies. We are aware of the proposed revisions to the affordable housing policy.

Design elements of the University Village are continuously being discussed with the University of Hawaii. Your suggestion for Hiluhilu to construct a signature anchor building and lease it back to UH is interesting and will be considered. We will discuss this with the University.

This idea of a signature building has been considered. What kind of structure and what kind of function has never been determined. There will be ongoing discussion with the University on this topic. A Performing Arts Center has been one of the concepts under consideration but the issue will be clarified at late stages of development.

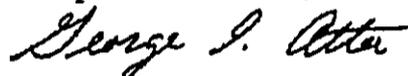
A mauka-makai roadway system is planned. There are existing challenges with connecting to the existing Makalei Estates road. A discussion of this unresolved issue regarding the mauka-makai connection is included in the DEIS and there will be further elaboration in the FEIS.

Letter to Mary Lou Kobayashi
September 9, 2004
Page 2 of 2

The Draft EIS includes more information regarding access to Palamanui from Queen Kaahumanu Highway. Hiluhilu Development is in contact with the Department of Transportation and other State agencies regarding potential alignment solutions of the project access roadway.

Your letter was received after the production of the Draft EIS report and is therefore not included in the Draft EIS for this project. Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process. Please contact me if you have any further questions or comments.

Sincerely,
Group 70 International, Inc.



George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

RECEIVED AS FOLLOWS



DISABILITY AND COMMUNICATION ACCESS BOARD

919 Ala Moana Boulevard, Room 101 • Honolulu, Hawaii 96814
Ph. (808) 586-8121 (V/TDD) • Fax (808) 586-8129

July 19, 2004

Mr. George Atta
Chief Community Planner
Group 70 International, Inc.
925 Bethel Street
Fifth Floor
Honolulu, HI 96813-4307

Regarding: Palamanui - A Hiluhilu Development Project
Environmental Impact Statement Preparation Notice (EISPN)
TMK Nos: 3-7-2-05:01
Ahupua'a of Kau, North Kona Judicial District
Island of Hawaii

Dear Mr. Atta,

Thank you for providing us the opportunity to review and respond to the Environmental Impact Statement Preparation Notice (EISPN) prepared by Group 70 International, Inc. The notice is for the Master Planned Community of Palamanui, a Hiluhilu Development Project, located in the ahupua'a of Kau between Queen Kaahumanu Highway and Makalei Estate in North Kona on the Island of Hawaii. The purpose of our comments are to ensure that the Hiluhilu Development, LLC, will take into account accessibility design requirements for persons with disabilities during the preparation of the EISPN and in the Draft Environment Impact Statement (DEIS).

We offer the following comments:

1. It is anticipated that the Project arterial roadways, connector roadways, walkways, and other types of pedestrian and vehicular access to service the residential, retail and commercial lots being created will be dedicated to the County of Hawaii or State as part of the public right-of-way system. It is also anticipated that parts of the initial phases of University Village including, but not limited to, buildings for college use, parking facilities, and parks being created will be dedicated to the County or State. In addition, major infrastructure improvements such as electrical switching and transformer substations, a sewage treatment plant system, university leases, student housing, assisted living facilities may be dedicated. These types of dedications will fall within the scope of the Americans with Disabilities Act (ADA) Title II covering state and local governments, and the Hawaii Revised Statutes (HRS) §103-50. Although the technical requirements are nearly identical, there may be areas of difference. If this is the intent, HRS §103-50 contains a requirement for a review process by the Disability and Communication Access Board for this portion of the site.
2. Any proposed private infrastructure systems and amenities for commercial and public use within the boundaries of this site, however, will not be subject to the requirements of HRS §103-50. They will be subject to the requirements of Title III of the ADA, which covers privately owned places of public accommodation and commercial facilities. Accessibility will need to be addressed for elements, including but not limited to, elements such as the proposed

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George Atta, AICP
Group 70 International, Inc.
Regarding: Palamanui EISPN
July 19, 2004
Page 2

semi-public 18-hole golf course, research laboratories, commercial retail spaces, commercial residential spaces, and public walking surfaces.

The Disability and Communication Access Board incorporates the following guidelines in the review process:

- a. The "Americans with Disabilities Act Accessibility Guidelines" (Department of Justice (DOJ), published July 1, 1994 revised).
 - b. The "Fair Housing Act Accessibility Guidelines" (Department of Housing and Urban Development published March 13, 1991 and supplement published June 28, 1994).
 - c. The "State of Hawaii's Residential Accessibility Guidelines" (published September 1995).
 - d. The "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities; State and Local Government Facilities; Final Rule" (Federal Register published January 13, 1998).
 - e. The "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities; Building Elements Designed for Children's Use; Final Rule" (Federal Register published January 13, 1998).
 - f. The Disability and Communication Access Board's (DCAB) "Interpretive Opinions" addressing clarification of the various accessibility guidelines.
3. For additional recommended references in planning, the U.S. Architectural and Transportation Barriers Compliance Board has available the following documents:
- a. The "Regulatory Negotiation Committee on Access to Outdoor Developed Areas; Final Report", published September 1999.
 - b. "Designing Sidewalks and Trails for Access" Part I & II, published July 1999.
 - c. "Accessibility Guidelines for Public Rights of Way – Draft Guidelines", June 17, 2002. These documents will provide this project with information that may be helpful in the long range planning of the site.
 - d. The "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities; Recreation Facilities; Final Rule", published September 3, 2002.

For further information, contact the Office of Technical and Informational Services, U.S. Architectural and Transportation Barriers Compliance Board, 1331 F Street, N.W., Suite 1000, Washington, D.C. 20004-1111; phone numbers (800) 872-2253 (V), (202) 272-0080 (TTY), (202) 272-0082 (Fax); and e-mail address to access publications www.access-board.gov.

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George Atta, AICP
Group 70 International, Inc.
Regarding: Palamanui EISPN
July 19, 2004
Page 3

4. If parking is provided the project must comply with Hawaii's Administrative Rules (HAR) Title 11, Chapter 219, "Parking for Persons with Disabilities", that became effective January 23, 2003. Section 11-29-14. Further information about "The Administrative Rules and Exhibits" can be obtained from our web site: www.hawaii.gov/health/dcab/. If you do not have access to the Internet, please call us for a copy of the rules and exhibits.
5. We recommend including a general accessibility statement in the final master plan:

"All facilities will be designed to meet the requirements of the Americans with Disabilities Act, the Fair Housing Act, and the requirements of Hawaii Revised Statutes (HRS) §103-50. Parking for facilities will be designed to comply with Hawaii's Administrative Rules (HAR) Title 11, Chapter 219, Parking for Persons with Disabilities, Section 11-219-14. Buildings, facilities, and sites will also incorporate the best design practices as recommended by the U.S. Department of Transportation for designing sidewalks and trails and the U.S. Access Board for designing outdoor developed areas, recreation areas, or other current documents providing for accessibility".

The above reflects staff's technical assistance comments. They do not reflect our Board's approval or disapproval of the Plan. Again, thank you for giving us this opportunity to provide comment.

Should you have any questions or concerns, please feel free to contact Mr. Gary L. Batcheller, Facility Access Specialist, or Mr. Curtis Motoyama, Access Coordinator, at 586-8121.

Sincerely,



FRANCINE WAI
Executive Director

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



Francis S. Oda,
Arch. D., FAIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
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Christine M. Ruotolo, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

September 9, 2004

Francine Wai, Executive Director
Disability and Communication Access Board
919 Ala Moana Boulevard, Room 101
Honolulu, Hawaii 96814

**RE: Environmental Impact Statement Preparation Notice(EISPN), July 2004
Palamanui – A Hiluhilu Development Project
TMK 3-7-2-05:01
North Kona, Island of Hawaii**

Dear Ms. Wai:

Thank you for the letter of July 19, 2004 regarding your review of the Environmental Impact Statement Preparation Notice (EISPN) for the Palamanui - Hiluhilu Development project.

Your comments regarding accessibility design requirements for persons with disabilities will be accounted for in the development of the proposed Palamanui project. Specifically, your concerns are addressed in section S.2.2 of the EIS report.

1. We expect that elements of the project planned for dedication to the County or State of Hawaii may be subject to a review process by the Disability and Communication Access Board.
2. We will refer to Title III of the ADA which covers privately owned places of public accommodation and commercial facilities for the proposed private infrastructure systems and amenities for commercial and public use within Palamanui. This includes, but is not limited to, elements such as the semi-public 18-hole golf course, research laboratories, commercial retail spaces, commercial residential spaces, and public walking surfaces. The list of guidelines you have provided will be reviewed.
3. We will also refer to the U.S. Architectural and Transportation Barriers Compliance Board documents for additional guidance in designing the proposed facilities.
4. Where parking is provided, we will comply with Hawaii's Administrative Rules Title 11, Chapter 219, "Parking for Persons with Disabilities" which became effective January 23, 2003.

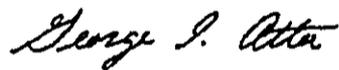
Letter to Francine Wai
September 9, 2004
Page 2 of 2

5. The Final Environmental Impact Statement will include the following statement:

"Facilities will be designed to meet the requirements of the Americans with Disabilities Act, the Fair Housing Act, and the requirements of Hawaii Revised Statutes (HRS) Section 103-50. Parking for facilities will be designed to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 219, Parking for Persons with Disabilities, Section 11-219-14. Buildings, facilities and sites will also incorporate the best design practices as recommended by the U.S. Department of Transportation for designing sidewalks and trails and the U.S. Access Board for designing outdoor developed areas, recreation areas, or other current documents providing for accessibility."

Your comment letter was received after the production of the Draft EIS and is therefore was not part of the Draft EIS for this project. However, your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process. Please contact me if you have any further questions or comments.

Sincerely,
Group 70 International, Inc.



George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

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**Comment and Response Letters
from Earlier EIS Reports**

Written Comment and Responses to earlier project EIS reports

Hiluhilu Development EISPN

(Published April 8, 2003 OEQC Bulletin)

OEQC
LUC
DAGS
DBEDT
DOE
DHHL
DOH – Clean Water
DOT
OHA
Hawaii County Parks
Bonnie Bator
Eden Pearl

Hiluhilu Development Draft EIS

(Published August 23, 2003 OEQC Bulletin)

US Fish and Wildlife
US Natural Resources Conservation Service
OEQC
LUC
DAGS
DBEDT
DOE
DOH – Noise, Safe Water, Wastewater, Clean Air
DLNR – Historic Preservation, Land Division, Engineering, Parks, Na Ala Hele,
Forestry
DOT – Director, Airports
UH Environmental
OHA
Hawaii County Planning
Hawaii County Parks
Hawaii County Public Works
Hawaii County Water
Hawaii Forest Industry Association
Bonnie Bator
HECO

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May 01 03 01:37p

Dept. of Health (OEQC)

(808) 586-4186

P. 1

LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

715 SOUTH BERETAMA STREET
SUITE 700
HONOLULU, HAWAII 96813
Telephone (808) 586-4186
Facsimile (808) 586-4186
Email: eoqc@health.state.hi.us

April 30, 2003

Anthony Ching
Land Use Commission
PO Box 2359
Honolulu, HI 96804

Attention: Russell Kumabe

Dear Mr. Ching:

Subject: Environmental Impact Statement (EIS) Preparation Notice
Hiluhilu Development, North Kona

We have the following comments to offer:

Figures: Figure 2 includes written material that is illegible. In the draft EIS be sure the figures are clear and easy to read. Increase the size of the figures if required. Also on this figure indicate where the UH West Hawaii campus is in relation to Hiluhilu Development.

Contacts:

Section 7.2, *Agencies & Parties to be consulted*, does not include any community groups. Community consultation is an important element of the review process. If possible arrange for public presentations. It is also a good idea to notify county councilmembers, state representatives and state senators for this region about the project.

Document all contacts in the draft EIS, including those made during the scoping phase, and include copies of any correspondence.

Visual impacts: Identify public viewpoints of the project site from which visual impacts may occur, especially of mauka and makai viewplanes. Show these impacts by superimposing a rendering of the proposed facilities onto photographs taken from public vantage points.

Cumulative impacts: The Land Use Commission and the Hawaii County Planning Department should carefully consider the cumulative impact that this development will have on the region. The volume of development in Kona is substantial. Attached is a copy of our letter dated February

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May 01 03 01:37p

Dept. of Health (DEQC)

(808) 586-4186

P.2

Anthony Ching
April 30, 2003
Page 2

4th, 2003 listing other development projects. Be sure this discussion is given adequate coverage in the draft EIS.

If you have any questions call Nancy Heinrich at 586-4185.

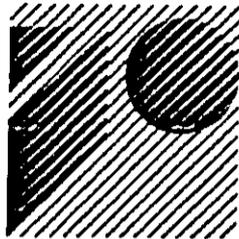
Sincerely,



GENEVIEVE SALMONSON
Director

c: George Atta

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GROUP 70
INTERNATIONAL

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
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Scott Tangonan
Wesley N. Ujimoto, AIA
Stephen Kelly
Donna Pennington
Pepito Galvez, AIA

June 16, 2003

Ms. Genevieve Salmonson, Director
State of Hawaii
Office of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, HI 96813

**Subject: Hiluhilu Development
EIS Preparation Notice**

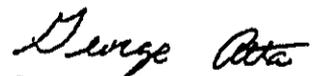
Dear Ms. Salmonson:

Thank you for your letter of April 30, 2003 regarding your review of the Environmental Impact Statement Notice of Preparation (EISPN) for the Hiluhilu Development. The following are offered in response to your comments:

1. **Figures:** We will ensure that all figures are legible in the Draft Environmental Impact Statement (DEIS).
2. **Contacts:** Some community groups and stakeholders have already been contacted and others will be added during the DEIS process. These contacts will all be documented and copies of these correspondences will be included in the DEIS.
3. **Visual Impacts:** Public viewpoints of the project site and mauka and makai viewplanes will be shown in the DEIS. Superimposed renderings of the proposed facilities onto photographs taken from public vantage points will also be included.
4. **Cumulative Impacts:** The OEQC letter dated February 4, 2003, listing other development projects in the region will be given adequate discussion in the DEIS.

Your comments and this response letter will be included in the DEIS. We will forward you a copy of the Draft EIS for your review upon its completion. We appreciate your participation in the environmental review process.

Sincerely,


George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Alan Okamoto
Roger Harris

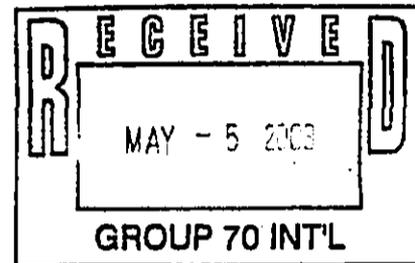
LINDA LINGLE
BENJAMIN J. DAYOTANO
GOVERNOR



ANTHONY J.J.L. CHING
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 28, 2003



Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307

Dear Mr. Atta:

Subject: Environmental Impact Statement Preparation Notice ("EISPN")
Hiluhilu Development
TMK: (3) 7-2-5:001

This is to acknowledge receipt of your letter dated April 1, 2003, transmitting the subject EISPN.

Upon review of the EISPN, we understand that the Draft Environmental Impact Statement ("DEIS") will include more substantive assessments and technical studies, and we have the following comments to assist you in the preparation of the DEIS:

1. Regarding Section 1.3, Proposed Action, we recommend that the DEIS include a map that clearly shows the State Land Use Agricultural and Conservation Districts and their respective boundaries for the project area. We would like to point out when the Applicant submits a petition for district boundary amendment to the State Land Use Commission ("LUC" or "Commission"), we will require a full size survey map with metes and bounds that shows the districts and boundaries.

Mr. George Atta, AICP
April 28, 2003
Page 2

2. Regarding Section 2.1, Hiluhilu Development, we recommend the following for the DEIS:
 - Inclusion of the range of market prices for the proposed single-family units; and any alternative housing types that may be proposed and their impacts.
 - Clarification of the relationship of certain planned facilities in the project's commercial component with the University of Hawaii West Hawaii campus ("UHWH"), and discussion of planned coordinated activities between the project and the UHWH.
 - Clarification of Table 1, Land Use Development, of the Kau and UH profile information. The EISPN describes the subject project as the University Village, but the table distinguishes development between Kau and UH, which the University Village project crosses over both components.
 - Clarification if the proposed golf course area also would serve to accommodate regional drainage flows or other purposes beside recreational amenity.

3. Regarding Section 2.2, Development Schedule and Process, the DEIS should include a clearer discussion of the development schedule including: potential project phasing; the respective timeframe for the respective phases; and development alternatives.

The DEIS should also include more discussion of project funding such as the proposed sources of funding and if funding will be tied to project phasing.

4. Regarding Section 3.0, Project Setting, we recommend the following for the DEIS:
 - Section 3.1, Overview, should include more discussion of surrounding projects in the area such as the related housing developments associated with the UHWH development, the HELCO Keahole power plant and substation, nearby agricultural subdivisions, and the Natural Energy Laboratory of Hawaii and the Hawaii Ocean Science and Technology Park administered by the Natural Energy Laboratory of Hawaii Authority ("NELHA").

Mr. George Atta, AICP
April 28, 2003
Page 3

- Section 3.2, Terrestrial Conditions, should include assessment of potential impacts to near shore and coastal resources in the region such as the NELHA projects.
 - Section 3.3, Man-Made Environment, should include an archaeological inventory survey for the project, that would provide more substantive findings than an archaeological assessment; and the cultural assessment should include methodology and documentation verifying the proposed findings.
 - Section 3.4, Infrastructure and Utilities, should include the final technical studies; assessment of the cumulative impacts of other projects in the region upon infrastructure and utilities; and assessment of potential impacts of development alternatives, if applicable.
 - Section 3.5, Socio-Economic Conditions, should include assessments of cumulative impact such as other housing, commercial, and recreational projects and their market assessments.
 - Section 3.6, Cultural Impact Assessment, should include the methodology used to determine the proposed findings, especially in addressing PASH rights.
 - Section 3.7, Land Use Plans, Policies and Controls, should include the appropriate policies and objective of the Hawaii Coastal Zone Management Law or Chapter 205A, Hawaii Revised Statutes ("HRS"). Other permits or approvals needed would include any Department of Health ("DOH") environmental permits such as National Pollutant Discharge Elimination System permit ("NPDES"), Underground Injection Control ("UIC") wells, and other development related permits.
5. Regarding Section 4.0, Probable Impacts and Mitigation Measures, we recommend that the DEIS include the final studies, if possible, as referred to previously to support and verify the proposed findings.
6. Regarding Section 4.3, Significance Criteria, the DEIS should include assessment of cumulative impacts that extend beyond the project and the UHWH and include those aforementioned projects and activities.

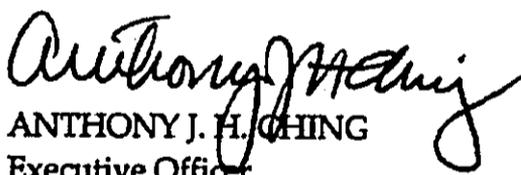
Mr. George Atta, AICP
April 28, 2003
Page 4

7. Regarding Section 4.4, Reason For EIS, we would like to point out that the appropriate reference should be the proposed reclassification of any land in the Conservation District pursuant to Section 343-5 (7), HRS.
8. Regarding Section 5.2, Other Alternatives, the DEIS should include alternative development proposals such as multi-family or exclusion of either the housing, commercial, or recreational components of the project.
9. Regarding Section 7.2, Agencies & Parties To Be Consulted In Preparation of Draft EIS, we recommend including any community organizations in the area in addition to those agencies and organizations that is required by the Office of Environmental Quality Control, DOH.

We will reserve additional comments for the review of the DEIS.

Thank you for the opportunity to provide comment on the subject EISPN. Should you require clarification or further assistance in this matter, please contact Russell Kumabe of my staff at 587-3822.

Sincerely,


ANTHONY J. H. CHING
Executive Officer



June 16, 2003

Mr. Anthony J.H. Ching
Executive Officer
State of Hawaii
Land Use Commission
P.O. Box 2359
Honolulu, HI 96804-4307

**Subject: Hiluhilu Development
EIS Preparation Notice**

Dear Mr. Ching:

Thank you for the letter of April 28, 2003 regarding your review of the Environmental Impact Statement Notice of Preparation (EISPN) for the Hiluhilu Development. The following are offered in response to your comments:

1. The Draft Environmental Impact Statement (DEIS) will include a map that clearly shows the State Land Use Agricultural and Conservation Districts and their respective boundaries for the project area. In addition, a full size survey map with metes and bounds showing the districts and boundaries will be included in the applicant's submittal for the Land Use District Boundary Amendment.
2. Regarding Section 2.1, Hiluhilu Development, the following will be included in the DEIS: The range of market prices for the proposed single-family units, alternative housing types that may be proposed, and their impacts. Clarification of the relationship of certain commercial planned facilities with the University of Hawaii West Hawaii (UHWH). Clarification of Table 1. Clarification of the golf course potentially serving and accommodating regional drainage flows or other purposes besides just serving as a recreational amenity. Certain sections of the golf course will serve as dry wells to serve as part of the stormwater drainage system.
3. Regarding Section 2.2, Development Schedule and Process, the DEIS will include a discussion of project phasing, the timeframe of the three phases, and development alternatives.
4. The following information will be included in Section 3.0, Project Setting, of the DEIS: Section 3.1, Overview, will include more discussion of surrounding projects in the area. Section 3.2, Terrestrial Conditions, will include an assessment of potential impacts to near shore and coastal resources in the region. Section 3.3, Man-Made Environment, will include an archaeological inventory survey, and a cultural assessment including methodology and documentation verifying the proposed findings. An inventory survey is currently being conducted. Section 3.4, Infrastructure and Utilities, will include the final technical studies, where available, assessment of the cumulative impacts of other projects in the region upon infrastructure and utilities, and an assessment of potential impacts of development

Letter to Mr. Anthony J.H. Ching
June 16, 2003
Page 2 of 2

alternatives. Section 3.5, Socio-Economic Conditions, will include assessments of cumulative impacts such as housing, commercial, recreational projects, and their market assessments. Section 3.6, Cultural Impact Assessment will include the methodology used to determine the proposed findings. PASH rights will be addressed. Section 3.7, Land Use Plans, Policies, and Controls, will include the appropriate policies and objectives of the Hawaii Coastal Zone Management Law, Chapter 205A, Hawaii Revised Statutes (HRS). Other permits and approvals that will be applied for include, Department of Health (DOH) environmental permits such as National Pollutant Discharge Elimination System (NPDES), Underground Injection Control (UIC) wells, and other development related permits.

5. Section 4.0, Probable Impacts and Mitigation Measures, the DEIS will include the final studies, as referred to previously, to support and verify the proposed findings.
6. In Section 4.3, Significance Criteria, the DEIS will include an assessment of the cumulative impacts that extend beyond the project and the UHWH and include the aforementioned projects in item 4 of this letter.
7. The proposed reclassification of any land in the Conservation District pursuant to Section 343-5 (7), HRS will be revised in Section 4.4, Reason for EIS.
8. In Section 5.2, Other Alternatives, the DEIS will include alternative development proposals, if applicable.
9. Section 7.2, Agencies and Parties to be Consulted in Preparation of the Draft EIS, will include community organizations in the area and any other potential stakeholders for this project.

Your comments and this response letter will be included in the DEIS. We appreciate your participation in the environmental review process.

Sincerely,


George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Alan Okamoto
Roger Harris
Clive Jones

RECEIVED AS FOLLOWS

LINDA LINGLE
GOVERNOR

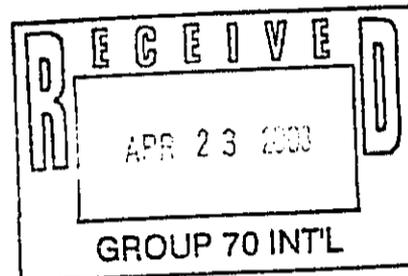


RUSS K. SAITO
COMPTROLLER
KATHERINE H. THOMASON
DEPUTY COMPTROLLER

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

(P)1133.3

APR 22 2003



Mr. George Atta, Chief Community Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Atta:

Subject: Hiluhilu Development
Environmental Impact Statement Preparation Notice (EISPN)
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii
TMK: 3-7-2-5:1

Thank you for the opportunity to review the subject project's Environmental Impact Statement Preparation Notice (EISPN). The project does not impact any of the Department of Accounting and General Services' projects or existing facilities. Therefore, we have no comments to offer.

If there are any questions regarding the above, please have your staff call Mr. David DePonte of the Planning Branch at 586-0492.

Sincerely,

A handwritten signature in cursive script, appearing to read "Tadashi Yoshizawa".

TADASHI YOSHIZAWA
Acting Public Works Administrator

DD:jo
c: Ms. Genevieve Salmonson, OEQC

RECEIVED AS FOLLOWS



Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
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Stephen H. Yuen, AIA
Linda C. Mili, AIA

George I. Atta, AICP
Paul P. Chomey, AIA
Philip T. Cuccia
Sutobin Hakim
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kasamura
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotolo, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Uimori, AIA
Stephen Kelly
Donna Pennington
Pepito Galvez, AIA

June 16, 2003

Mr. Tadashi Yoshizawa
State of Hawaii
Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810

**Subject: Hiluhilu Development
EIS Preparation Notice**

Dear Mr. Yoshizawa:

Thank you for your letter of April 22, 2003 regarding your review of the Environmental Impact Statement Notice of Preparation (EISPN) for the Hiluhilu Development.

We will forward you a copy of the Draft EIS for your review upon its completion. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

RECEIVED AS FOLLOWS



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

LINDA LINGLE
Governor
THEODORE E. LIU
Director
RAYMOND M. JEFFERSON
Deputy Director

Energy, Resources, and Technology Division
235 South Beretania Street, Laloopapa A Kamehameha Bldg., 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804-2359
Web site: www.hawaii.gov/abedi/ert

Telephone: (808) 587-3807
Fax: (808) 587-3820

April 7, 2003

Group 70 International, Inc.
925 Bethel St., 5th Floor
Honolulu, HI 96813-4307
Attn: George Atta

Dear Mr. Atta:

**Subject: Hiluhilu Development
Environmental Impact Statement Preparation Notice (EISPN)
Ahupuaa of Kau, North Kona Judicial District, Island of
Hawaii
Tax Map Key: 3-7-2-5-1**

In response to your April 1, 2003, notice, we wish to be a consulted party in the preparation of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development.

Sincerely,

A handwritten signature in black ink, appearing to read "Maurice H. Kaya".

Maurice H. Kaya
Chief Technology Officer

Enclosures

c: OEQC

RECEIVED AS FOLLOWS



Francis S. Oda, Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Atta, AICP
Paul P. Chorney, AIA
Philip T. Cuccia
Sutobin Halm
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kitamura
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimoto, AIA
Stephen Kelly
Donna Pennington
Pepito Galvez, AIA

June 16, 2003

Mr. Maurice H. Kaya
Chief Technology Officer
State of Hawaii
Department of Business, Economic Development,
And Tourism
235 S. Beretania Street, 5th Floor
Honolulu, HI 96813

**Subject: Hiluhilu Development
EIS Preparation Notice**

Dear Mr. Kaya:

Thank you for your letter of April 7, 2003 regarding your review of the Environmental Impact Statement Notice of Preparation (EISPN) for the Hiluhilu Development.

We will forward you a copy of the Draft EIS for your review upon its completion. We appreciate your participation in the environmental review process.

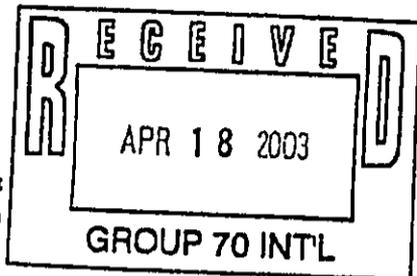
Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

RECEIVED AS FOLLOWS

LINDA LINGLE
GOVERNOR
STATE OF HAWAII



MICAH A. KANE
CHAIRMAN
HAWAIIAN HOMES COMMISSION

BEN HENDERSON
DEPUTY TO THE CHAIRMAN

KALLANA H. PARK
HHL EXECUTIVE ASSISTANT

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

P.O. BOX 1879
HONOLULU, HAWAII 96805

April 16, 2003

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Thank you for providing a copy of the Environmental Impact Statement Preparation Notice for the proposed Hiluhilu Development on 725 acres (TMK 7-2-05:01) in the ahupua'a of Kau in North Kona on the island of Hawaii.

The Department of Hawaiian Home Lands (DHHL) has 483 acres of lands nearby in the ahupua'a of Kalaoa. We would appreciate being included for future consultations in preparation of the Draft Environmental Impact Statement for your Hiluhilu Development project.

The Highways Division of the State Department of Transportation should also be consulted regarding long-range plans for access via the Queen Ka'ahumanu Highway.

If you have any questions, please call Joe Chu of our Planning Office at 587-6421.

Aloha and mahalo,

Micah A. Kane
for Micah A. Kane, Chairman
Hawaiian Homes Commission

c: Office of Environmental Quality Control

RECEIVED AS FOLLOWS



June 16, 2003

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nishi, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Mili, AIA

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Frank B. McCue
Kyle K. Nakemoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimoto, AIA
Stephen Kelly
Donna Pennington
Pepito Galvez, AIA

Mr. Micah Kane
State of Hawaii
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, HI 96805

**Subject: Hiluhilu Development
EIS Preparation Notice**

Dear Mr. Kane:

Thank you for your letter of April 16, 2003 regarding your review of the Environmental Impact Statement Notice of Preparation (EISPN) for the Hiluhilu Development. The following are offered in response to your comments:

1. The Department of Hawaiian Homelands (DHHL), will be included for future consultations in preparation of the Draft Environmental Impact Statement (DEIS).
2. We have consulted with the Highways Division of the State Department of Transportation regarding long-range plans for access via the Queen Ka'ahumanu Highway. We expect ongoing discussions on this issue.

Your comments and this response letter will be included in the DEIS. We will forward you a copy of the Draft EIS for your review upon its completion. We appreciate your participation in the environmental review process.

Sincerely,


George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

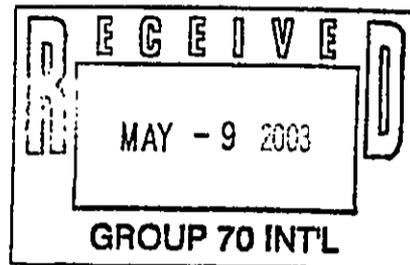
RECEIVED AS FOLLOWS

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

PATRICIA HAMAMOTO
SUPERINTENDENT



OFFICE OF ADMINISTRATIVE SERVICES

May 7, 2003

Mr. George Atta
Group 70 International, Inc.
925 Bethel Street, 5th floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Subject: Hiluhilu Development
Environmental Impact Statement Preparation Notice (EISP)
Kau, North Kona, Hawaii TMK: 7-2-05: 01

The Department of Education (DOE) has reviewed the EISP for the Hiluhilu Development LLC (Petitioner) master plan community called University Village in North Kona. The proposed community will include approximately 765 residential units, including some student housing. The location of an additional 200 units of housing for students, faculty, and staff is mentioned but it is unclear whether those units are within the petition area or not.

The DOE will request that the Petitioner make a fair-share contribution to the schools that will serve the residents of University Village. The DOE does not require a fair-share payment for housing that has written prohibitions against children under the age of 18. Contribution amounts are set by the fair-share formula in place at the time that a developer and the DOE settle on an educational contribution agreement.

Thank you for the opportunity to review the University Village plans. We look forward to reviewing the Draft Environmental Impact Statement.

Should you have any questions, please call Ms. Heidi Meeker of our branch at 733-4862.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Raynor M. Minami".

Raynor M. Minami, Director
Facilities and Support Services Branch

RMM:hy

cc: Rae M. Loui, OAS
Genevieve Salmonson, OEQC

RECEIVED AS FOLLOWS



Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hirosi Hida, AIA
Roy H. Nabei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Atta, AICP
Paul P. Chomey, AIA
Philip T. Cuccia
Sutobin Halm
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
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Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA
Stephen Kelly
Donna Pennington
Pepito Galvez, AIA

June 16, 2003

Mr. Raynor M. Minami, Director
State of Hawai'i
Department of Education
Facilities and Support Services Branch
P.O. Box 2360
Honolulu, HI 96804

**Subject: Hiluhilu Development
EIS Preparation Notice**

Dear Mr. Minami:

Thank you for the letter of May 7, 2003 regarding your review of the Environmental Impact Statement Notice of Preparation (EISPN) for the Hiluhilu Development. The following are offered in response to your comments:

1. The fair-share contribution to the schools that will serve the residents of University Village will be discussed in the Draft Environmental Impact Statement (DEIS). The petitioner will contact the DOE to settle on an educational contribution agreement.

Your comments and this response letter will be included in the DEIS. We appreciate your participation in the environmental review process.

Sincerely,

A handwritten signature in cursive script that reads 'George Atta'.

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

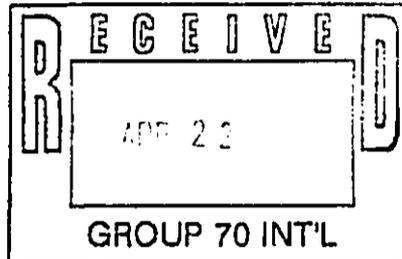
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LINDA LINGLE
GOVERNOR OF HAWAII



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

April 17, 2003



CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EMO / CWB

0403SPKP.03

Mr. George Atta, AICP
Chief Community Planner
Group 70 International
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

**Subject: Hihuhilu Development
Environmental Impact Statement Preparation Notice (EISPN)
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii
TMK: 3-7-2-5-1**

The Department of Health, Clean Water Branch (CWB) has reviewed the subject document and offers the following comments:

1. The Army Corps of Engineers should be contacted at (808) 438-9258 to identify whether a Federal license or permit (including a Department of Army permit) is required for this project. Pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act"), a Section 401 Water Quality Certification is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters...."
2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following activities:
 - a. Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi).
 - b. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the commencement of the construction activities.
 - c. Discharge of treated effluent from leaking underground storage tank remedial activities.

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Mr. George Atta
April 17, 2003
Page 2

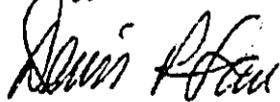
- d. Discharge of once through cooling water less than one (1) million gallons per day;
- e. Discharge of hydrotesting water.
- f. Discharge of construction dewatering effluent.
- g. Discharge of treated effluent from petroleum bulk stations and terminals.
- h. Discharge of treated effluent from well drilling activities.
- i. Discharges of treated effluent from recycled water distribution systems.
- j. Discharges of storm water from a small municipal separate storm sewer system.
- k. Discharge of circulation water from decorative ponds or tanks.

The CWB requires that a Notice of Intent (NOI) to be covered by a NPDES general permit for any of the above activities be submitted at least 30 days before the commencement of the respective activities. The NOI forms may be picked up at our office or downloaded from our website at <http://www.state.hi.us/doh/eh/cwb/forms/genl-index.html>.

- 3. The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters and/or coverage of the discharge(s) under the NPDES general permit(s) is not permissible (i.e. discharge enters Class 1 or Class AA waters). An application for the NPDES permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at <http://www.state.hi.us/doh/eh/cwb/forms/indiv-index.html>.
- 4. Hawaii Administrative Rules, Section 11-55-38, also requires the owner to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD) or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. Please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.

If you have any questions, please contact the CWB at 586-4309.

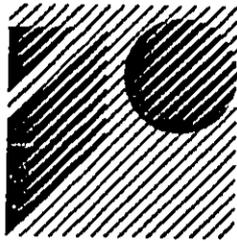
Sincerely,



DENIS R. LAU, P.E., CHIEF
Clean Water Branch

KP:ndp

RECEIVED AS FOLLOWS



GROUP 70
INTERNATIONAL

Francis S. Oda, Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nabei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Atta, AICP
Paul P. Chorney, AIA
Philip T. Cuccia
Sutobin Hakim
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Stuart M. Jow, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kaamua
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA
Stephen Kelly
Donna Pennington
Pepito Galvez, AIA

June 16, 2003

Mr. Denis R. Lau, P.E., Chief
State of Hawai'i
Department of Health
Clean Water Branch
P.O. Box 3378
Honolulu, HI 96801-3378

**Subject: Hiluhilu Development
EIS Preparation Notice**

Dear Mr. Lau:

Thank you for the letter of April 17, 2003 regarding your review of the Environmental Impact Statement Notice of Preparation (EISPN) for the Hiluhilu Development. The following are offered in response to your comments:

1. The Army Corps of Engineers will be contacted to determine whether a 401 permit and 401 Water Quality Certification are required for this project.
2. We acknowledge that a National Pollutant Discharge Elimination System (NPDES) general permit is required for the activities listed in your letter as the list is broad and generic, we will review our activities and comply where required.
3. We also understand that an individual NPDES permit may be required if wastewater is discharged from the project site into State waters. However, we do not anticipate this occurring.
4. Pursuant to Hawai'i Administrative Rules, Section 11-55-38, a copy of the Notice of Intent (NOI) or NPDES request for review will be submitted to the State Historic Preservation Division (SHPD).

Your comments and this response letter will be included in the DEIS. We appreciate your participation in the environmental review process. Please contact me if you have any further questions or comments.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Alan Okamoto
Roger Harris

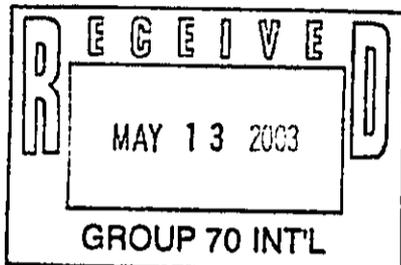
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LINDA LINGLE
GOVERNOR



RODNEY K. HARAGA
DIRECTOR

Acting Deputy Director
GLENN M. OKIMOTO



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

IN REPLY REFER TO:

STP 8.0757

May 9, 2003

Mr. George Atta, AICP
Chief Community Planner
Group 70 International
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Subject: Hiluhilu Development
Environmental Impact Statement Preparation Notice (EISPN)

In reply to your transmittal of the preparation notice, the following are our comments on the subject project:

1. A Traffic Impact Analysis Report (TIAR) should be prepared and submitted for our review and approval. The report should include analysis and discussion of each of the three (3) proposed access routes, including the intersection on Queen Kaahumanu Highway with the entrance access road to Kona International Airport at Keahole (KOA). Necessary roadway and intersection improvements for the mitigation of adverse traffic impacts caused by the development should be identified.

The TIAR should reflect the cumulative impacts of the entire planned development. The planned roadway operations, including collector roads running north or south (shown on Figure 2, Development Plan, in the EISPN) which may provide access to and from the development should be included in the analysis and discussion.

2. The subject development should be coordinated with adjacent developments.
3. The developer should construct all required roadway and intersection improvements at no cost to the State Department of Transportation.
4. The developer should be required to contribute to regional roadway improvements on a fair share basis.
5. Plans for construction within the State highway right-of-ways must be submitted for our review and approval.

Mr. George Atta, AICP
Page 2
May 9, 2003

STP 8.0757

6. Although the subject development is outside of the KOA airport noise exposure contours, the developer should be aware that overflights can occur from aircraft utilizing the airport.
7. The developer should submit Federal Aviation Administration (FAA) Form 7460-1, Notice of Proposed Construction or Alteration, so that the FAA can evaluate if there are any impacts to the airspace in the vicinity of KOA airport from the subject development.

We appreciate the opportunity to provide comments.

Very truly yours,



RODNEY K. HARAGA
Director of Transportation

c: Genevieve Salmonson, OEQC



June 16, 2003

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nhei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
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Paul P. Chorney, AIA
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Sutoban Holm
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
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Dean H. Katamura
Kathenne M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujiori, AIA
Stephen Kelly
Donna Pennington
Pepito Galvez, AIA

Mr. Rodney K. Haraga
Director
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-4307

**Subject: Hiluhilu Development
EIS Preparation Notice**

Dear Mr. Haraga:

Thank you for the letter of May 9, 2003 regarding your review of the Environmental Impact Statement Notice of Preparation (EISPN) for the Hiluhilu Development. The following are offered in response to your comments:

1. The Traffic Impact Analysis Report (TIAR) will include discussion and analysis of each of the three proposed access routes including the intersection on Queen Ka'ahumanu Highway with the entrance access road to Kona International Airport at Keahole (KOA).

The TIAR will reflect the cumulative impacts of the entire planned development.
2. Where practicable, we have been coordinating with the UH and Makalei Estates. We are also starting regional coordination on water issues with public agencies and other large landowners. We will continue this approach throughout the development process.
3. The construction of all required roadway and intersection improvements at no cost to the State DOT will be discussed in the Transportation section of the DEIS.
4. Contribution to the regional roadway improvements on a fair share basis will be addressed in the DEIS.
5. Plans for construction within State highway right-of-ways will be submitted for your review and approval.
6. The developer does realize that overflights can occur from aircraft utilizing the KOA airport and the noise section of the DEIS will address this issue.
7. The developer will submit a Federal Aviation Administration (FAA) Form 7460-1, Notice of Proposed Construction or Alteration regarding any probable impacts to the airspace in the vicinity of KOA airport from the subject development.

Letter to Mr. Rodney K. Haraga
June 16, 2003
Page 2 of 2

Your comments and this response letter will be included in the DEIS. We appreciate your participation in the environmental review process.

Sincerely,



George Atta, AICP
Chief Community Planner

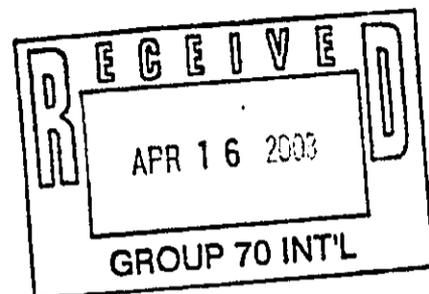
cc: Guido Giacometti
Alan Okamoto
Roger Harris
Keith Niiya

PHONE (808) 594-1888

FAX (808) 594-1885



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



April 14, 2003

Mr. George Atta
Chief Community Planner
Group 70 International, Inc.
925 Bethel Street – 5th Floor
Honolulu, HI 96813-4307

**SUBJECT: PROPOSED COMMUNITY – NORTH OF KONA
INTERNATIONAL AIRPORT - EISPN**

Dear Mr. Atta:

Thank you for the opportunity to review the above referenced proposal for the development of approximately 725.2 acres for residential units, a university village center and an 18-hole golf course.

The Office of Hawaiian Affairs (OHA) has no comments at this point in time, but would encourage that you contact potentially interested stakeholders who should be able to provide you with information on the culture and history of the site of your project. There are a number of organizations to include the local Hawaiian Civic Clubs as well as local chapters of the royal societies. You might also wish contacting the following:

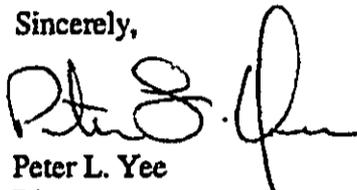
- Ms. Ruby McDonald
OHA Community Affairs Coordinator
75-5706 Hanama Place – Suite 107
Kailua-Kona, HI 96740
(808) 329-7368
- Hawaii County Native Hawaiian Chamber of Commerce
80 Pauahi Street – Suite 209
Hilo, HI 96720
- Kohanaiki 'Ohana
P.O. Box 4753
Kailua-Kona, HI 96745
(808) 325-0844

Mr. George Atta
April 14, 2003
Page Two

Ms. Hannah Kihalani Springer, former OHA Trustee is very knowledgeable about the history and cultural aspects of the property you are considering. You may obtain a contact number for her from Ms. McDonald.

If you have any questions, please contact Jerry B. Norris at 594-1847 or email him at jerryn@oha.org.

Sincerely,



Peter L. Yee
Director
Nationhood and Native Rights Division

cc: Ms. Genevieve Salmonson, OEQC



Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Atta, AICP
Paul P. Chorney, AIA
Philip T. Cuccia
Sulobin Halim
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kaamura
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimoto, AIA
Stephen Kelly
Donna Pennington
Pepito Galvez, AIA

June 16, 2003

Mr. Peter L. Yee, Director
State of Hawaii
Office of Hawaiian Affairs
Nationhood and Native Rights Division
711 Kapi'olani Blvd., Suite 500
Honolulu, HI 96813

**Subject: Hiluhilu Development
EIS Preparation Notice**

Dear Mr. Yee:

Thank you for your letter of April 14, 2003 regarding your review of the Environmental Impact Statement Notice of Preparation (EISPN) for the Hiluhilu Development. The following are offered in response to your comments:

1. Stakeholders: The list of potentially interested stakeholders in your letter will be contacted during the DEIS process.

Your comments and this response letter will be included in the DEIS. We will forward you a copy of the Draft EIS for your review upon its completion. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

Harry Kim
Mayor



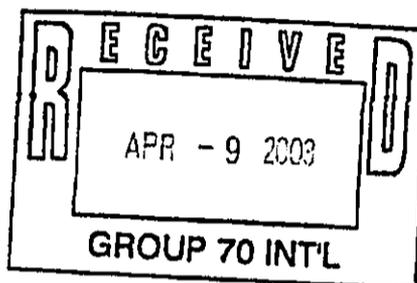
Patricia G. Engelhard
Director

Pamela N. Mizuno
Deputy Director

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

April 7, 2003

Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307



Attn: George Atta

Re: Hiluhilu Development, Kau, North Kona, Hawaii
Environmental Impact Statement Preparation Notice (EISPN)
TMK: (3) 7-2-05:01

Dear Mr. Atta:

Our review of the EISPN has raised the following questions:

1. Will the general public be allowed use of the golf course, performing arts and cultural facilities, and university-affiliated athletic fields?
2. Will any other recreational facilities, such as general use parks, playgrounds, etc., be developed for use by the general public?

Thank you for your anticipated response to the above and for the opportunity to provide input.

Sincerely,

A handwritten signature in cursive script, appearing to read "Pat Engelhard".
Patricia Engelhard
Director

cc OEQC



June 16, 2003

Francis S. Oda, Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nabei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Atta, AICP
Paul P. Chomey, AIA
Philip T. Cuccia
Sutobin Hakim
Roy A. Inouye, AIA, CSI
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Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimoto, AIA
Stephen Kelly
Donna Pennington
Pepito Galvez, AIA

Ms. Patricia Engelhard
County of Hawaii
Department of Parks and Recreation
101 Pauahi Street, Suite 6
Hilo, HI 96720

**Subject: Hiluhilu Development
EIS Preparation Notice**

Dear Ms. Engelhard:

Thank you for your letter of April 7, 2003 regarding your review of the Environmental Impact Statement Notice of Preparation (EISPN) for the Hiluhilu Development. The following are offered in response to your comments:

1. The Draft Environmental Impact Statement (DEIS) will address more specifically, the issue of the general public being allowed to use the golf course, performing arts and cultural facilities, and university-affiliated athletic fields.
2. In general, public facilities and open spaces in the Learning Village will be open to the public.
3. The accessibility of university related facilities will be determined by the university as the facilities are developed.
4. Other recreational facilities, such as general use parks and/or playgrounds, will listed in the Summary chapter of the DEIS.

Your comments and this response letter will be included in the DEIS. We will forward you a copy of the Draft EIS for your review upon its completion. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

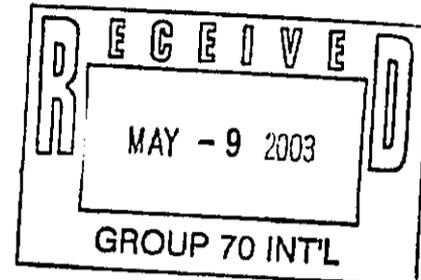
cc: Guido Giacometti
Alan Okamoto
Roger Harris

P.O. Box 565
Kurtistown, Hawai'i 96760

28 April 2003

Hiluhilu Development
c/o Group 70 International
925 Bethel Street ~ 5th Floor
Honolulu, Hawai'i 96813
Contact: Guido Giacometti

Re: *Environmental Impact Statement (EIS) ~ TMK: 7-2-05:01*
Conservation District Land
725.2 Acres ~ Ahupua'a of Ka'u



Dear Sir or Madam and To Whom it May Concern:

Aloha! This correspondence is representative of myself, 'Ohana Members, and numerous interested parties—We are opposed to the use of conservation district lands for *Hiluhilu Development LLC*, in their proposal to construct commercial areas, a 18-hole golf course, and residential units in said 25.2 acres of land in North Kona.

Reclassification of these conservation lands, currently in *Conservation* and *Agricultural District* designation to *Urban District Designation* is unacceptable. Please reject approval an Environmental Impact Statement on the intent of *Hiluhilu Development LLC*.

Potential long-term impacts on surrounding areas will immense—it would behoove the State Land Use Commission to deny reclassification of these lands. Presently, North Kona has enough *Commercial Areas, Golf Courses, and Residential Units*. It is extremely important to retain land held in *Conservation and Agricultural Land Use Designations*.

Urban sprawl that envelops North Kona is already a major dilemma—constraint concerning unbridled development is overdue. On behalf of various residents, associates and 'Ohana members I implore those in the decision making processes to keep the lands in question in their current land use designation.

Thank you, for your time, we look forward to a response—additionally to be put on the mailing list to be kept abreast of Environmental Impact Statement (*EIS*) protocol.

Sincerely with ALOHA,

Bonnie P. Bator & 'Ohana
Bonnie P. Bator and 'Ohana

C: State Land Use Commission
P.O. Box 2359
Honolulu, Hawai'i 96804-2359
Contact: Anthony Ching

Group 70 International, Inc.
925 Bethel Street ~ 5th Floor
Honolulu, Hawai'i 96813
Contact: George Atta

Office of Environmental Quality Control
235 S. Beretania Street
Leiopapa A Kamehameha ~ Suite 702
Honolulu, Hawai'i 96813



Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
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George I. Atta, AICP
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Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA
Stephen Kelly
Donna Pennington
Pepito Galvez, AIA

June 16, 2003

Ms. Bonnie P. Bator and 'Ohana
P.O. Box 565
Kurtistown, HI 96760

**Subject: Hiluhilu Development
EIS Preparation Notice**

Dear Ms. Bator:

Thank you for the letter of April 28, 2003 regarding your review of the Environmental Impact Statement Notice of Preparation (EISPN) for the Hiluhilu Development. The following are offered in response to your comments:

1. Your discussion of the reclassification of conservation lands and potential long-term impacts of the proposed development will be addressed in the Draft Environmental Impact Statement (DEIS).

Your comments and this response letter will be included in the DEIS. You will be contacted regarding any EIS updates for this project. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

May 7, 2003

To Hiku Hiku Development LLC
att: Guido Giacometti

While the need for an expanded West Hawaii Campus for HCC + UH is clear, and supporting housing and services are indicated, a golf course is completely unacceptable. There is no need for another golf course. They are sources of coastal pollution and an unconscionable use of water and resources. It has nothing to do with higher education and doesn't contribute to a sustainable future. Please do not build another golf course!

Eden Pearl

CC: Group 70 Int'l & Co.
925 Bethel 5th floor
Honolulu, HI 96813
att: George Atta

P.O. Box 926
Nalehu, HI 96772

State Land Use Commission
P.O. Box 2359
Honolulu HI 96804-2359
Contact Anthony Ching

Office of Environmental Quality Control
235 S. Beretania suite 702
Honolulu, HI 96813



Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
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Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Rajesh E. Portnora, AICP
Stephen H. Yuen, AIA
Linda C. Mili, AIA

George I. Atta, AICP
Paul P. Chomey, AIA
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Sutobin Hakim
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Christine M. Ruotolo, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimoto, AIA
Stephen Kelly
Donna Pennington
Pepito Galvez, AIA

June 16, 2003

Ms. Eden Pearl
P.O. Box 926
Naalehu, HI 96772

**Subject: Hiluhilu Development
EIS Preparation Notice**

Dear Ms. Pearl:

Thank you for your letter of May 7, 2003 regarding your review of the Environmental Impact Statement Notice of Preparation (EISPN) for the Hiluhilu Development. The following are offered in response to your comments:

1. Your support for facilities related to the UH West Hawaii Campus and HCC facilities is appreciated.
2. We note your comments about the golf course and will provide a clearer description for our proposal in the Draft EIS to address specific issues.

Your comments and this response letter will be included in the DEIS. We will forward you a copy of the Draft EIS for your review upon its completion. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto



United States Department of the Interior

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

In Reply Refer To:
PN-03-16

SEP - 2 2003

Guido Giacometti, Principal
Hiluhilu Development, LLC
c/o Island Advisors, Inc.
P.O. Box 7121
Kamuela, Hawaii 96743

Subject: Draft Environmental Impact Statement, Hiluhilu Development,
TMK: 3-7-2-05:01

Dear Mr. Giacometti:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Master Plan received by our office on August 4, 2003. The DEIS was prepared by Group 70 International, Inc. on behalf of Hiluhilu Development, LLC.

The Hiluhilu Development, LLC., proposes to develop a 725-acre vacant parcel in North Kona with residential units, mixed uses, an 18-hole golf course, and a university village center. Hiluhilu Development, LLC. is engaged in joint planning with the University of Hawaii to provide supporting infrastructure located on the Hiluhilu parcel for the proposed West Hawaii campus on adjacent State land.

The following comments are provided for your use in preparing the final environmental impact statement.

General Comments

There is a general tendency to include archeological and cultural elements under environmental factors, and vice versa. We recommend that archeological and cultural elements not be included in the same discussion with biological factors.

A map showing the current zoning and land uses should be included in the DEIS.

The Service condones the use of native plants in local landscapes. In most cases landscape use of native plants does not mitigate for loss of native habitat. We recognize the educational value of native plants in landscapes and also that when properly used,

Guido Giacometti, Principal

2

native plants can reduce the need for irrigation and chemical fertilizers, since native plants are adapted to local environmental conditions. If the use of native plants in your landscaping plan is a mitigation measure for the loss of existing habitats, more information should be provided giving the details on how this will work.

Mitigation measures for potential loss of native vegetation are not clearly spelled out. See specific comments below.

Specific Comments

Io (Hawaiian Hawk) and Opeapea (Hawaiian Hoary Bat) may breed in the area at certain time of the year. Volant Opeapea may roost in the area at any time during the year. Io may use the area for foraging and loafing at any time during the year. Both species could be disturbed or directly harmed by grubbing and tree-felling.

The Opeapea breeds at lower elevations during summer months (June-August). Young Opeapea are non-volant and could be killed if vegetation, shrubs, or trees they are in are grubbed or cut. To avoid potential take of young, non-volant Opeapea that could be in the area, we recommend that no grubbing or tree-cutting be done from June to August.

The Io is known to breed in areas near the action area and is found in moderate to high densities within portions of the action area. To avoid potential disturbance or harm to Io that could be nesting, we recommend that no grubbing or tree-felling be done during the Io breeding season (March-October). If this is not possible, we recommend that surveys be conducted in the early spring to detect potential breeding pairs, and that areas with trees be surveyed for Io nests. If a nest is detected, do not perform work in the area until after the pair has finished breeding.

Grubbing and tree-felling for this project would remove only a tiny fraction of usable habitat for Io and Opeapea on Hawaii. Because both species have a broad geographic distribution and are capable of using a variety of native and non-native habitat types, impacts from direct loss of habitat are likely to be negligible. However, as described above, there is potential for the direct take of these species by grubbing or tree-felling at certain times of the year and/or if appropriate surveys are not done before work activities begin to determine presence of nesting Io.

Section 9 of the Endangered Species Act (Act) prohibits "take" of an endangered or threatened animal on public or private lands. Take, which carries civil and criminal penalties, is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct" [16 U.S.C. 1532(19)]. Harm includes significant habitat modification or degradation that results in injury or death by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering [50CRR 17.3].

Guido Giacometti, Principal

3

Section 10 of the Act provides exemptions to the section 9 prohibition. For example, non-Federal entities can seek incidental take permits or develop a Habitat Conservation Plan. If the project cannot be designed to avoid the likelihood of take, you can apply for a section 10 incidental take permit. If you would like more information on programs under section 10, please contact Arlene Pangelinan of my office, Program Leader: Conservation Planning and Permits at 808/792-9400.

Page 4-13, Figure 4-2: We recommend the legend on this figure be modified to indicate which species are endangered, species of concern, and rare. Also, we suggest calling kului and maua "locally rare," as that more accurately represents their status.

Page 5-10, second paragraph: We recommend you change "extensive landscaping with native plants" to "extensive landscaping with plants native to the area." Native plants from other areas have no more value than non-native plants for mitigating potential adverse effects on the environment . . . and natural resources. Also, if the use of native plants in the landscape is to provide habitat for native fauna then details on how this will be accomplished should be provided in the DEIS.

Page 6-2, 6.1.3 Vegetation and Wildlife, mitigative measures, first bullet: We recommend changing "Preserve as much of the Lowland Dry Forest fragment as possible" to "Preserve all of the Lowland Dry Forest fragment." The rarity of this habitat makes all remaining fragments important to the conservation of this resource. Reduction in the size of the remaining fragment will decrease the value of the residual dry forest and reduce its ability to survive in the long run.

Page 6-2, 6.1.3 Vegetation and Wildlife, mitigative measures, second bullet: If wiliwili are incorporated into the landscape plans in addition to protecting the plants on site, we recommend new plants placed on site as landscape specimens be grown from seed collected from the existing wild plants. Introducing new gene stock to the native stands may be detrimental to any remaining natural stands in the future.

Page 6-3, 6.1.3 Vegetation and Wildlife, mitigative measures, first bullet: In reference to maua, aiea, and uhiuhi trees, we recommend changing "Within these enclosures, seedlings of these and other rare species could be planted" to "Within these enclosures, seedlings of these and other rare species native to the area could be planted." Please add halapepe (*Pleomele hawaiiensis*) to the list of trees to be protected.

Page 6-3, 6.1.3 Vegetation and Wildlife, mitigative measures, second bullet: All the endemic and indigenous plants listed in Table 4.1 have landscape potential. Listing just three (maia pilo, alahee, and ilima) may be considered a complete list and preclude the use of others in landscaping plans. We recommend that this section reference Table 4.1 for a list of possible native landscape plants.

Guido Giacometti, Principal

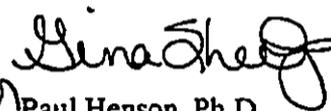
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Summary Comments

A more detailed description of the mitigation measures to protect existing native vegetation, especially the rare and endangered species (uhiuhi, aiea, halapepe) is needed. There should also be a more detailed description of the mitigation measures to protect the Io and Opeapea in the area. More detailed information on the design and location of the golf course, and its effects on the surrounding environment, should be included.

The Service appreciates the opportunity to provide comments on the proposed project. If you have questions regarding this letter, please contact Gregory Koob of my staff at 808/792-9400.

Sincerely,


Paul Henson, Ph.D.
Field Supervisor

cc:
Paul Conry, DOFAW



December 22, 2003

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralcon E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Mcki, AIA

Mr. Paul Henson, Ph.D.
Field Supervisor
United States Department of the Interior
Fish and Wildlife Service
300 Ala Moana Blvd., Room 3-122
Honolulu, HI 96850

Subject: Hiluhilu Development
Draft EIS

George I. Atta, AICP
Paul P. Chomey, AIA
Wendy Lee Cook, AIA, CDT

Dear Mr. Henson:

Thank you for the letter of September 2, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development. We will work with the United States Fish and Wildlife Service (USFWS) to address these issues and will comply with your guidelines to the maximum extent practicable. The following are offered in response to your comments:

Philip T. Cuccia
Sutocin Halim
Jeremy C. Hsu, AIA
Roy A. Incuye, AIA, CSI
Stuart M. Jow, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kitamura
Katherine M. MacNeil, AIA
Frank B. McCue
Kylie K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA
Sharon Ching Williams, AIA

1. Discussions of archaeological and cultural elements will be separated from discussions about biological factors.
2. Figures identifying State Land Use Districts and County Zoning will be added in to the Final Environmental Impact Statement (FEIS).
3. Mitigation measures addressing grubbing or tree-felling and its affect on the Io (Hawaiian Hawk) and Opeapea (Hawaiian Hoary Bat) will be included in the FEIS.
4. Section 6.1.3 will also address the recommendation of no grubbing or tree-felling from June to August.
5. Section 6.1.3 will discuss the grubbing and tree-felling impacts and mitigation on the Io breeding season (March to October). If this is not feasible, surveys will be conducted and work logistics and schedules adjusted to ensure that the Io breeding patterns are not affected.
6. Section 6.1.3 will discuss mitigation measures to ensure that no "take" of the Io and Opeapea occurs.
7. Section 5.2.1 will address in further detail, compliance with Section 9 of the ESA, "Take" of an endangered species on public or private lands.
8. Section 5.2.1 will also address the alternative of applying for a Section 10 incidental take permit should there be a likelihood of a take.

RECEIVED AS FOLLOWS

Letter to Mr. Paul Henson, Ph.D.
December 22, 2003
Page 2 of 2

9. Figure 4-2 will be revised to indicate which species are endangered, species of concern, and rare. The kului and maua are recognized as "locally rare."
10. Page 5-10, second paragraph will be revised to read, "extensive landscaping with plants native to the area." Also, discussion will be added in the FEIS about the use of native plants in the landscape providing improved habitat for native fauna. Parks and open-space areas throughout the project will highlight nature species. The golf course will also be coordinated with this theme. The effect will be a net increase in coverage by native botanical species.
11. Page 6-2, Section 6.1.3, Vegetation and Wildlife, mitigative measures, first bullet, will be revised to read, "Preserve the entire Lowland Dry Forest fragment." As mentioned previously, we will be creating a preserve out by this area and working with the North Kona Forest Group to develop management plans for its maintenance.
12. Page 6-2, Section 6.1.3 Vegetation and Wildlife, mitigative measures, second bullet, will include discussion regarding use of plant specimens to be used for landscape plans. If wiliwili are incorporated into the landscape plans in addition to protecting the plants on site, we recommend new plants placed on site as landscape specimens be grown from seed collected from the existing wild plants. Introducing new gene stock to the native stands may be detrimental to any remaining natural stands in the future.
13. Page 6-3, Section 6.1.3 Vegetation and Wildlife, mitigative measures, first bullet, the wording will be revised to read, "Within these enclosures, seedlings of these and other rare species native to the area could be planted." Halapepe will be added to the list of trees to be protected.
14. Page 6-3, 6.1.3 Vegetation and Wildlife, mitigative measures, second bullet will reference Table 4.1 as a list of possible native landscape plants.
15. Section 6.1.3 will also provide a more detailed description of the mitigation measures to protect existing native vegetation, especially the rare and endangered species (uhiuhi, 'aiea, and halapepe). Section 6.3.1 will include more detailed information on the golf course, its effects on the surrounding environment, and its cumulative impacts.

Your comments and this response letter will be included in the FEIS. We appreciate your participation in the environmental review process.

Sincerely,



George Atta, AICP
Chief Community Planner

cc: Guido Giacometti; Roger Harris; Alan Okamoto

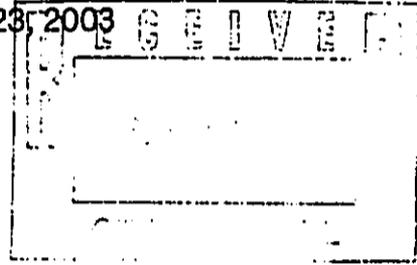


Natural Resources Conservation Service
P.O. Box 50004
Honolulu, HI 96850
808-541-2600

United States Department of Agriculture

Our People...Our Islands...In Harmony

September 23, 2003



Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307

Subject: Hiluhilu Development
Draft Environmental Impact Statement

Dear Mr. Atta:

Page 6-2 shows this project has no impact on coastal water quality. Since most of the development is a golf course, fertilization of the grass will occur. The soils present are very porous and unmanaged fertilization could contaminate the subsurface water flow into the nearby ocean. Because of this, I believe coastal water quality could very likely be degraded. This project has a high potential to negatively impact coastal water quality because the topsoil overlies lava flow and the leaching potential will be high.

Secondly, the average annual rainfall is 15-20 inches per year in this area. This will require substantial irrigation compounding the potential for adverse coastal water quality.

The Kona area has been in drought conditions for the past 5 years. The irrigation water usage of this project can only add to future water use concerns of this drought prone area.

Sincerely,

LAWRENCE T. YAMAMOTO
State Conservationist

cc: Anthony Ching, Executive Director P.O.Box 2359, Honolulu, HI 96804-2359
Nancy Heinrich, Office of Environmental Quality Control, 235 S. Beretania St.
Suite 702, Honolulu, HI 96813

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

An Equal Opportunity Provider and Employer



Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
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Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujiricri, AIA
Sharon Ching Williams, AIA

December 17, 2003

Mr. Lawrence T. Yamamoto
Natural Resource Conservation Service
P.O. Box 50004
Honolulu, Hawaii 96850

Subject: Hiluhilu Draft Environmental Impact Statement (DEIS)

Dear Mr. Yamamoto:

Thank you for your letter of September 23, 2003 regarding our Draft Environmental Impact Statement. With regard to your comments we provide the following responses:

We agree that fertilization will occur on the golf course. We also agree that the soils on the site are porous and unmanaged fertilization has the potential to impact coastal waters. However, please let us reassure you that this golf course will be properly designed and managed. We recognize the constraints created by the site conditions and will be planning and managing the course in the following manner. The turf areas will be properly graded and covered with layers of subcourse before the topsoil is placed. The depth of the topsoil and subcourse along with the turf will be thick enough to absorb and bind nutrients to the surface. Additionally, golf course maintenance will follow best management practices and we will only fertilize as much as the turf requires, no more. This will ensure that little or no fertilizer will leach into the ground. We will not over fertilize because that would be wasteful, costly and unnecessary.

The arid climatic conditions will require additional irrigation using brackish non-potable water which will be provided by on-site wells and treated wastewater from the project and the adjacent University site. However, the Water Study by Waimea Water Services, Inc. revisited the groundwater resources for the affected area. The study involved a hydrologic budget for the area using conservative estimates for recharge rates using long-term data for the area. The study concluded that given the recharge, sustainable yield and wastewater reclamation, there were adequate water resources in the resource subarea to support this project. Based on the study, we do not expect that any additional potable or non-potable water would have to be brought into this resource subarea for this project.

In addition to reducing the amount of non-potable groundwater that is needed for irrigation, the use of treated wastewater to supplement irrigation will result in the consumption of phosphorus and nitrogen in the treated wastewater in the turf. This will allow us to reduce supplemental fertilization. As with fertilizer application, irrigation will be limited to that which is necessary. Landscaping design, including plant selection and depth of soil will limit the need for excessive irrigation. As part of the planning, the golf course will use salt tolerant grasses.

An active monitoring program including soil moisture measurements and lysimeters will ensure that leaching from the soil is not occurring. We will use best management practices in handling storm water and surface water runoff (all of which is being handled within the project area) to monitor for none point source pollutants.

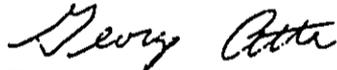
Letter to Mr. Lawrence T. Yamamoto
December 17, 2003
Page 2 of 2

Given these controls, the nature of the proposed development (which includes no industrial uses), and the distance from the shoreline, it did not appear that there would be any significant impact on the quality of groundwater as it approached the shoreline.

We acknowledge your concern about drought conditions. However, the Water Study used long-term data and conservative estimates, so it took into account shorter-term climatic fluctuations. The irrigation water will be developed on site and will not be potable (potable water sources are well above the highest elevation of this project) so use of irrigation water should not affect the potable water for the area. We are working closely with the State Department of Land and Natural Resources (DLNR) and the County Water Department to coordinate regional water development. Two wells that we have already dug will be developed and placed into production to support some of our development and additional users in the region. We will also pay our fair share of regional water infrastructure costs and have taken the lead in coordinating this regional development with the blessings of the County Water Department and the DLNR.

Thank you for your concerns and please call me if you have any further questions.

Sincerely,



George Atta, AICP
Chief Community Planner

Cc: Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
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E-mail: oeqc@health.state.hi.us

September 25, 2003

Anthony Ching
Land Use Commission
PO Box 2359
Honolulu, HI 96804

Attention: Russell Kumabe

Dear Mr. Ching:

Subject: Draft Environmental Impact Statement (EIS),
Hiluhilu Development, North Kona

We have the following comments to offer:

Title page signature: The applicant is required to sign the EIS and indicate that it and all ancillary documents were prepared under the signatory's direction. This is required by § 11-200-20d of Hawaii Administrative Rules. Submit the FEIS copy with the original signature to the accepting authority.

Permits: In the table in section 9.0 indicate the status of the various permits. If a permit application has not yet been filed, list the anticipated date of filing.

Development schedule: Section 3.2 states, "Further details regarding the development phasing will be discussed in the DEIS" but no discussion is included. Although section 3.1.5 briefly outlined phasing, further details should be supplied. Please include this in the final EIS.

Terms, abbreviations and acronyms: The abbreviation *THK* and the term *capture rate* are used in section 2.1. In the final EIS include definitions or insert a separate list of terms and acronyms.

Visual impacts: In our April 30th, 2003 letter on the EIS preparation notice we submitted the following comment:

"Identify public viewpoints of the project site from which visual impacts may occur, especially of mauka and makai viewplanes. Show these impacts by superimposing a rendering of the proposed facilities onto photographs taken from public vantage points."

In your response you stated that photos with superimposed renderings would be provided, but they were not. Include them in the final EIS so that reviewers can see what the development will look like in relation to its surroundings.

Figures:

3-1. Master plan: Where is the UHCWH campus in relation to Hiluhilu? A legend indicating what the various colors represent is needed for this figure. In the final EIS include these two items and increase the scope of the figure so the details are easily seen.

Figure 3-2, University Village: Increase the scope of the figure so the details are easily seen and insert a north arrow.

Figure 3-5, Wastewater Treatment Plant: Increase the scope of the figure so the details are easily seen.

Bicycle paths: Section 3.1.5.1 on the Roadway System notes that bicycle paths will be provided on the interior roads. If bike paths are not also provided on access roads leading to the development, cyclists will likely not opt for this mode of transportation. How will you assure continuity of bicycle access to and from the development and surrounding communities?

Summary section: In section 1.8 ("Unresolved issues") expand or modify your discussion of traffic impacts, mitigation and associated costs that actually states what these issues are.

Cultural impacts assessment (section 4.9): The discussion needs to draw a conclusion from the information presented on cultural resources, including cultural practices. What is your assessment of project impacts to current cultural practices? Include this in the final EIS.

Mitigation measures: Section 6 discusses impacts and mitigation measures. Mitigation measures need to be stated in terms of what *will* be done and not what *should* be done.

a. Cultural, historic, archeological resources (section 6.2.7):

Phrasing includes: "Hope that ... the lava-scape doesn't get greened over," "Be mindful of making good choices about the precious resources like water." "Be mindful of view planes ... don't put a building in front and obstruct the view." "... both sites could be designated for preservation and some sort of trail linkage ... could be a nice cultural experience."

Likewise, section 4.9 (Cultural impacts assessment) discusses the cultural environment of the project site and notes what *should* be done to preserve it. What *will* be done? In the final EIS list specific mitigation measures to reduce or eliminate impacts to cultural resources.

b. Air quality (section 6.2.8): In this section discuss the air quality impacts from the nearby Keahole power plant and related mitigation measures.

Anthony Ching
September 25, 2003
Page 3

Historic perspective: The draft EIS includes a very good history of the region. In addition, provide an historic perspective of the project, i.e. how this development came to be.

Sustainable building techniques: Please consider applying sustainable building techniques presented in the "Guidelines for Sustainable Building Design in Hawaii." In the final EA include a description of any of the techniques you will implement. Go to our website at <http://www.state.hi.us/health/oegc/guidance/sustainable.htm> or contact our office for a paper copy of the guidelines.

Project costs: In Table 3-2 indicate which amounts are public funds.

Utilities: Section 6.2.15 notes that power lines will have to be provided. Will these lines be placed underground?

Significance criteria (section 6.3.6): There are 13 significance criteria. This section contains an evaluation of only the first two criteria.

Noise impact study (appendix G): The pages in this study are out of order. Correct this in the final EIS.

Consultation and correspondence (section 11):

- a. In section 11.2, the *State Agencies* correspondence chart, indicate that the following commented on the EIS preparation notice: Land Use Commission, Clean Water Branch (DOH), Department of Transportation and the Department of Education.
- b. Add Eden Peart to section 11.5, *Organizations and Individuals*, as an EISPN commenter.
- c. The 4/30/03 letter from this office included an attachment. In the final EIS reproduce the attachment along with the letter.
- d. The section divider immediately following chapter 12 should be corrected to read: "Hiluhilu EISPN Response Letters."

If you have any questions call Nancy Heinrich at 586-4185.

Sincerely,


GENEVIEVE SALMONSON
Director

e: George Atta



December 22, 2003

Francis S. Oda,
Arch. D., AIA, ACP
Norman G.Y. Hong, AIA
Shervi B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, ACP
Stephen H. Yien, AIA
Linda C. Aiki, AIA

Ms. Genevieve Salmonson
Director
State of Hawaii
Office of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, HI 96813

Subject: **Hiluhilu Development
Draft EIS**

George I. Atta, AICP
Paul P. Chorney, AIA
Wendy Lee Cook, AIA, CDT
Philip T. Cuccia
Sutobin Halim
Jeremy C. Hsu, AIA
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
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Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimon, AIA
Sharon Ching Williams, AIA

Dear Ms. Salmonson:

Thank you for the letter of September 25, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development. The following are offered in response to your comments:

1. The title page signature will be included in the FEIS.
2. The Land Use Boundary Amendment is the only permit for which we have a clear anticipated date of submission, 12/20/03. Other permits and approvals include the following:
 - Wastewater Treatment Facility & Irrigation with Treated Effluent 12/1/04
 - Highway Entrance from Queen Ka'ahumanu Highway 3/1/04
 - Subdivision and Plan Approvals 12/1/04
 - Water Source and Distribution System 2/1/04
 - Building and Grading Permits - as needed by phase 6/1/04
 - Rezoning 4/1/04
 - National Pollutant Discharge Elimination System (NPDES) Permit 6/1/04
 - Brackish and Potable Wells Permit 2/1/04

The submittal dates for these permits are contingent on the progress of the LUC process.

3. The following paragraph will be added to Section 3.2, Development Schedule and Process: The Hiluhilu (Palamanui) Development will span three phases, from 2004-2014. Table 3-2, illustrates the phasing schedule for this project. Phase I is from 2004-2008, phase II is from 2009-2011, and phase III is from 2012-2014. A total of 965 units will be developed consisting of low density residential, patio homes, condominiums,

International Student Housing, University Village Inn, and Senior Housing. The total acreage that will be developed (residential, commercial, and golf course) is 547.3 and the total acreage used for open space, parking, and preservation is 177.9 acres, totaling to 725.2 acres for this project.

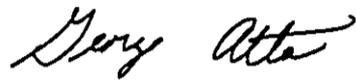
4. A separate list of terms and acronyms will be included in the Table of Contents Section of the FEIS.
5. While there are few "public" viewpoints other than views from lookouts and parks, the site is visible along the Queen Kaahumanu Highway corridor. The FEIS will include rendering overlays on photographs and further analysis of view impacts. Preservation of views from a cultural perspective has also been considered. This assessment is included in the FEIS.
6. Figure 3-1, Hiluhilu (Palamanui)/UH West Hawaii Campus will include a legend indicating what the various colors represent. The figure will also be enlarged so the details are easily seen. Figure 3-2, University Village will be enlarged so the details are easily seen, and a north arrow will be added. Figure 3-5, Wastewater Treatment Plant will be enlarged so the details are easily seen.
7. The following statement will be added to Section 3.1.5.1, Main Roads paragraph: Bike paths will also be designed on access roads leading to the proposed development. This will assure continuity of bicycle access to and from the development.
8. The following paragraph will be added to Section 1.8, Unresolved Issues, related to traffic impact: There are additional conclusions and technical questions related to the traffic impact resulting in mitigation and cost issues. Mitigation measures for the Airport Road intersection include installing a traffic signal system, and providing deceleration left and right-turn lanes. The costs for these mitigative measures are still unresolved.
9. According to OEQC guidelines, the types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, religious and spiritual customs. None of these particular cultural practices is expected to be affected by this project. A cultural advisory group is working on developing a cultural management plan that will address these questions.
10. Mitigation measures in Section 6.2.7 include, minimizing the greening of the lava scape. Water use will minimize wastage of this precious resource. Other measures include use of xeriscape species. The lava landscape will be integrated into both the golf course and general site landscaping. It will be highlighted for its own unique beauty.
11. Hiluhilu purchased this property in 1998 from Kennedy Wilson. Nansay Hawaii was the prior owner of the site. Nansay had intended to develop the site into 3,000 units of housing but were unable to proceed in the early mid 90's. Hiluhilu first developed 803-acre lots and the water system. Recently, Hiluhilu elected to proceed with seeking approvals to enable construction of the subject project.

12. The following paragraph on sustainable building techniques will be added to the FEIS: Hawai'i law calls for efforts to conserve natural resources, promote efficient use of water and energy and encourage recycling of waste products. Planning a project from the very beginning to include sustainable design concepts can be a critical step toward meeting these goals. A sustainable building is built to minimize energy use, expense, waste, and impact on the environment. It seeks to improve the region's sustainability by meeting the needs of Hawai'i's residents and visitors today without compromising the needs of future generations. Compared to conventional projects, a resource-efficient building project will:
 - ❖ Use less energy for operation and maintenance
 - ❖ Contain less *embodied* energy (e.g. locally produced building products often contain less *embodied* energy than imported products because they require less energy-consuming transportation.)
 - ❖ Protect the environment by preserving/conserving water and other natural resources and by minimizing impact on the site and ecosystems
 - ❖ Minimize health risks to those who construct, maintain, and occupy the building
 - ❖ Minimize construction waste
 - ❖ Recycle and reuse generated construction wastes
 - ❖ Use resource-efficient building materials (e.g. materials with recycled content and low embodied energy, and materials that are recyclable, renewable, environmentally benign, non-toxic, low VOC (Volatile Organic Compound) emitting, durable, and that give high life cycle value for the cost.)
 - ❖ Provide the highest quality product practical at competitive (affordable) first and life cycle costs.
13. All of the items listed in Table 3-2 will be funded by Hiluhilu Development LLC. No public funds are included in the table.
14. The power lines will be placed underground.
15. The entire section of the Significance Criteria will be included in the FEIS.
16. The page order in the Noise Impact Study will be corrected for the FEIS.
17. Items a-d in the consultation and correspondence section of the comment letter is addressed and will be included in the FEIS.

Letter to Ms. Genevieve Salmonson
December 22, 2003
Page 4 of 4

Your comments and this response letter will be included in the FEIS. We appreciate your participation in the environmental review process.

Sincerely,



George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
BENJAMIN J. CRIVELLO
GOVERNOR



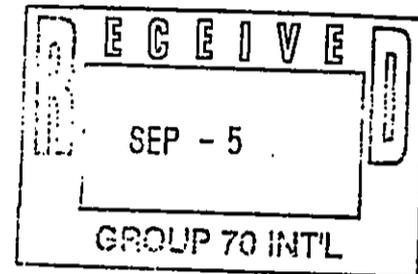
ANTHONY J.H. CHING
EXECUTIVE OFFICER

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

September 3, 2003



George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307

Dear Mr. Atta

**Subject: Hiluhilu Development
Draft Environmental Impact Statement ("DEIS")
Applicant: Hiluhilu Development, LLC
TMK: (3) 7-2-5: 001
North Kona, County and State of Hawai'i**

This is to acknowledge receipt of the subject DEIS and Addendum as transmitted by your letters dated July 29, 2003 and August 12, 2003 respectively.

Upon review of the DEIS, we have the following comments:

1. Section 1.3, Proposed Action, and Figure 1-1. We recommend that the Applicant provide a new map or overlay describing the State Land Use Agricultural and Conservation Districts and their respective boundaries for the project area. We had previously included this request in our comments on the environmental impact statement preparation notice dated April 28, 2003. The Applicant should include this revision or map with the Final Environmental Impact Statement ("FEIS").
2. Section 3.1.1 Residential Component. The Applicant should clarify the number of residential units that are being proposed for the project in relation to the product mix identified in Section V of Appendix I, Market Evaluation of Hiluhilu Project and University Village Development Opportunities. Section 3.1.1 identified 320 single-family units, 70 one-acre lots, and an additional 375 residential units. However, the

marketing evaluation identified 590 residential units and other types of facilities totaling 965 units. Appendix E, Traffic Impact Report, Hiluhilu Project, Kau North Kona, Hawaii, described the development of a 120-unit hotel. This section appears to be incomplete or misleading. The Applicant should provide this clarification in the FEIS.

The Application should also include the price ranges of the proposed residential units. Section 3.1.1 does not have any pricing information or details. Appendix I identified pricing of the product types ranging from \$200,000 to \$400,00. The Applicant should provide this information in the main body of the FEIS.

3. Section 3.1.2 Commercial Component. The Applicant should provide a more detailed assessment of the need for 106 acres of varied commercial uses. The current narrative does not contain any data to support the projected annual trade area employment growth, annual retail job growth, annual office job growth, and annual R&D/Flex space job growth. The Applicant should provide a more detailed assessment in the FEIS.
4. Section 3.2 Development Schedule and Process. The Applicant should clarify if the project will be developed in phases. While, this section does not identify any phases, Table 1 in Appendix E shows three (3) development phases. We had previously mentioned this issue in our comments of July 28, 2003. However, this section appears to be incomplete or misleading. The Applicant should clarify this issue in the FEIS.

The FEIS should also include more detail on how the project will be funded.

5. Section 5.0 Relationships of the Proposed Project to Existing Plans and Policies. The Applicant should discuss how the proposed project is not contrary to the State Land Use Law, Chapter 205, Hawai'i Revised Statutes ("HRS") and not contrary to the Coastal Zone Management policies and objectives, Chapter 205A, HRS. This discussion is necessary as the DEIS was filed with the Commission in conjunction with the Applicant's Petition for State Land Use District Boundary Amendment for the subject project. The FEIS should include these discussions.
6. Section 6.1.3 Vegetation and Wildlife. The Applicant should provide more detail as to how mitigative measures to preserve the following endangered species identified in the project area will be implemented: *Nothocestrum breviflorum* or '*Aiea*'; and *Pleomele hawaiiensis* or *Halapepe*. The FEIS should clarify this issue

George Atta, AICP
September 3, 2003
Page 3

7. Section 6.1.4 Cultural, Historic and Archaeological Resources, and Section 6.2.7 Cultural, Historic and Archaeological Resources. The Applicant should clarify that any mitigation and preservation plans will need to be approved by the State Historic Preservation Division, Department of Land and Natural Resources ("SHPD"). Such plans should include consultation with the region's kupuna and burial council prior to any construction activity. The Applicant's survey identified at least 11 sites recommended for preservation. The FEIS should include the recommendations, and if possible, describe any approval of the SHPD of the mitigation and preservation plans that will be implemented.

The Applicant should also clarify how the concerns raised in its cultural impact study assessment will be implemented in relation to project design and possible reconfiguration of the project's layout.

8. We continue to stand by our other comments provided to you on July 28, 2003.

We have no further comments on the subject DEIS, but we reserve the right to provide additional comments during the Commission's action on the FEIS.

Should you require clarification or further assistance in this matter, please contact Russell Kumabe of my staff at 587-3822.

Sincerely,


ANTHONY J. H. CHING
Executive Officer

c: Alan M. Okamoto
Guido Giacometti



December 17, 2003

Francis S. Ode, Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
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Wesley N. Ujimoto, AIA
Sharon Ching Williams, AIA

Mr. Anthony J. H. Ching
Executive Officer
State of Hawaii
Land Use Commission
P.O. Box 2359
Honolulu, HI 96804-2359

**Subject: Hiluhilu Development
Draft EIS**

Dear Mr. Ching:

Thank you for the letter of September 2, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development. The following are offered in response to your comments:

1. Figure 1-2, State Land Use Map will be added in the Final Environmental Impact Statement (FEIS) delineating Agricultural and Conservation Districts.
2. Proposed residential units will be described in Section 3.1.1 and will be consistent with Section V of Appendix I, Market Evaluation of Hiluhilu Project and University Village Development Opportunities. Table 3-2, Phasing Schedule, outlines the amount and timing of construction for this development. Single-family residential, patio homes, and condominiums will consist of 590 dwelling units, 100 apartment units, 75 International Student Housing units, 120 University Village Inn units, and 80 Senior Housing units; for a total of 965 dwelling units.
3. Section 3.1.2 will include the following discussion on commercial market analysis to justify the demand and feasibility of commercial development in this area. A major component of the Hiluhilu (Palama Nui) Development plan is to incorporate an urban core component into the overall plan as a tie-in to and in conjunction with the development plans at the adjacent University of Hawaii. A community college and specialized medical and educational facilities are being considered along the university facilities and student and faculty housing. A rezoning of the Hiluhilu (Palama Nui) parcel from agriculture to urban, with the support of the university, would help facilitate the expansion plans and expedite the development of this urban core.

In this urban core area, a need would also arise for the development of some retail, office, and research and development/flex space to be built to serve

both the residential community and the educational/medical components. THK has analyzed the overall demand for each of these uses in the Hiluhilu (Palama Nui) trade area as well as at the site. Based on projected annual job growth in the trade area, THK can estimate job growth by sector to project annual space requirements for retail, office, and research and development space over the next ten years. Retail job growth is projected to average 203 annually through 2012. At 350 square feet needed per employee, an additional 700,000 square feet of retail space will be required in the primary trade area. THK estimates a site capture of 15% of this space; meaning 106,000 square feet of retail space will be demanded at the Hiluhilu (Palama Nui) site. With coverage of 22% and a speculative factor of 50%, Hiluhilu (Palama Nui) site can support 17 acres of retail development. Following the same methodology, the office and research and development/flex markets yield 6 acres and 13 acres of space respectively.

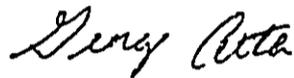
4. Section 3.2, Development Schedule and Process will elaborate on the phasing of this project. Table 3-2, Phasing Schedule, will illustrate the phasing and there will be a graphic showing a conceptual site plan of the proposed phasing. Phase I (2005-2009), consists of the golf course development, 235 dwelling units of construction, and the development of the International Student Housing. Phase II (2010-2012), consists of 245 dwelling units of construction, and development of the first half of the apartments, University Village Inn, and Senior Housing. Phase III (2013-2014), consists of 120 dwelling units, and development of the second half of the apartments.
5. The FEIS will include an expanded discussion on the project's compliance with the State Land Use Law, HRS Chapter 205 and with the Coastal Zone Management policies and objectives, HRS Chapter 205A.
6. Section 6.1.3, Vegetation and Wildlife, will provide more detail as to the mitigation measures to preserve the 'Aiea and Halapepe. Dr. Pat Hart recommends in his Botanical Reconnaissance report that all maua, 'aiea, and uhiuhi trees be preserved. These trees should be fenced in as large an enclosure as possible to protect them from goats. Within these enclosures, seedlings of these and other rare species could be planted. This small-scale restoration effort will be coordinated with the North Kona Dry Forest Working Group. Dr. Hart's other recommendations are outlined in Appendix B.
7. Section 6.1.4, Historic and Archaeological Resources, and Section 6.2.7 Cultural, Historic and Archaeological Resources will clarify if any mitigation and preservation plans are required. If these plans are required, it will be reviewed and approved by the DLNR State Historic Preservation Division (SHPD). The FEIS will include these mitigation and preservation plans. We have been working with kupuna from the area and will continue to do so throughout the development of the project. Their input is included in our mitigation, preservation and management plans.

Letter to Mr. Anthony J.H. Ching
December 17, 2003
Page 3 of 3

8. Comments from the April 28, 2003 letter that will be addressed in the FEIS include: a) A land use map delineating the agricultural and conservation districts; b) Range of market prices for the proposed residential types; c) Clarification of the commercial components of the project and its relationship to the University Village; d) More detailed Phasing Schedule, which will be discussed in Section 3.2 and illustrated in Table 3-2; e) Discussion of surrounding projects in the area and cumulative impacts of the Hiluhilu (Palama Nui) project to these surrounding developments and uses; and f) Discussion of an alternative related to the exclusion of either the housing, commercial, or recreational components of the project.

Your comments and this response letter will be included in the FEIS. We appreciate your participation in the environmental review process.

Sincerely,



George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR



RUSS K. SAITO
COMPTROLLER
KATHERINE H. THOMASON
DEPUTY COMPTROLLER

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

(P)1267.3

AUG 18 2003

Mr. George Atta, Chief Community Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Atta:

Subject: Hiluhilu Development
Draft Environmental Impact Statement
Ahupuaa of Kau, North Kona Judicial District, Island of Hawaii
TMK: 3-7-2-05:01

Thank you for the opportunity to review the subject project's Draft Environmental Impact Statement. This project does not impact any of the Department of Accounting and General Services' projects or existing facilities. Therefore, we have no comments to offer.

If there are any questions regarding the above, please have your staff call Mr. David DePonte of the Planning Branch at 586-0492.

Sincerely,

A handwritten signature in cursive script, appearing to read "Tadashi Yoshizawa".

TADASHI YOSHIZAWA
Acting Public Works Administrator

DD:jo

c: Mr. Anthony Ching, Hawaii State Land Use Commission
Ms. Genevieve Salmonson, OEQC



December 15, 2003

Francis S. Oda
Arch. D. A.A. A.C.P.
Norman G. ...
Sheri B. Seaman, AIA, ASID
Hirosshi Hida, A.A.
Roy H. Nishi, A.A. C.S.
James J. ...
Ralph E. ...
Stephen H. ...
Linda C. ...

Mr. Tadashi Yoshizawa
State of Hawaii
Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810

Subject: Hiluhilu Development
Draft EIS

Dear Mr. Yoshizawa:

Thank you for your letter of August 18, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development.

We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: **Guido Giacometti**
Roger Harris
Alan Okamoto

George L. Atta, AICP
Paul P. Chorney, A.A.
Wendy Lee Coor, AIA, CDT
Philip T. Cuccia
Sutobin Halm
Jeremy C. ...
Roy A. Inoué, A.A. C.S.
Stuart M. Jow, A.A.
Charles Y. ...
Dean H. ...
Katherine M. ...
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. ...
James L. Stone, AIA
Scott Tangens
Wesley N. ...
Sharon Ching Williams, AIA



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

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
RAYMOND M. JEFFERSON
DEPUTY DIRECTOR

No. 1 Capitol District Building, 250 South Hotel Street, 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2369, Honolulu, Hawaii 96804
Web site: www.hawaii.gov/dbedt

Telephone: (808) 586-2355
Fax: (808) 586-2377

Ref. No. P-10240

October 24, 2003

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

Subject: Hiluhilu Development, LLC, Draft Environmental Impact Statement

We have reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Hiluhilu development at the Ahupuaa of Kau, North Kona, and offer the following recommendations for information to be considered for inclusion into the Final Environmental Impact Statement (FEIS).

Hiluhilu Development, LLC proposes to seek redistricting to the State Land Use Urban District of approximately 725 acres (TMK 7-2-5:01) currently within the State Land Use Conservation and Agricultural Districts. The reclassification would enable the development of a residential community of mixed uses and a village core component designed to link and advance development of the campus for the University of Hawaii Center at West Hawaii (UHCWH) on an adjacent parcel (TMK 7-3-10: 05) to the south.

Although the conceptual plans show development of the village core extending onto the University parcel, it is our understanding that all of the uses and acreages described in the DEIS pertain only to the Hiluhilu parcel.

The area identified for the future growth of UHCWH along the village corridor is now located at the northwestern end of the University parcel. This present location area includes at least three (3) archaeological sites (Site Nos. 15262, 15299 and 15304) that were identified during the 1993 archaeological survey covering the 500-acre University parcel.

Recommendations for Site No. 15262 included further survey and testing and subsequent data recovery/mitigation excavations. No further work of any kind, was required for Site 15299. This site was determined to have no preservation potential outside of possible inclusion into landscaping. Site 15304 was recommended for

Mr. George Atta, AICP
Page 2
October 24, 2003

preservation with some level of interpretive development, including appropriate data recovery. The FEIS should include some discussion on whether the data recovery for these sites has been completed and whether these sites were considered for inclusion into the landscaping plans. We note that the conceptual plans (Figures 3-1 and 3-2) do show incorporation into the development plans of the archaeological sites that were recommended for preservation in the archaeological studies, but do not show or provide any discussion for the aforementioned sites.

Clear lines of responsibility between the University and Hihuhilu for the development should be addressed in the Final EIS. For example, will the University of Hawaii be required to come up with any initial funding to develop the University related uses on the Hihuhilu parcel? By completion of Phase 3, Hihuhilu will have enough in-place facilities to accommodate 750 students. How many students are currently enrolled in programs housed in temporary facilities throughout Kailua-Kona? Will the classroom facilities and other University uses proposed for the Village Center be sufficient to accommodate current facilities temporarily housed at different locales in Kailua-Kona?

The University Parcel is 500 acres. The Long Range Development Plan prepared for the University of Hawaii Center at West Hawaii identified approximately 33 acres of the 500-acre site for the first phase of development for UHCWH. The first phase of development for approximately 33 acres of that parcel was to consist of site work improvements (roadways, utilities infrastructure, parking); construction of an Instructional Food Service Building, Learning Resource Center (learning skills, library, telecommunication/media) Building; and Interim Operations Maintenance Building. Which of these components from the UHCWH long-range plan will be incorporated into the Hihuhilu Village Center?

Roadway plans for the project are too conceptual. In some areas, the DEIS appears to ignore County plans for north-south arterials and State Plans for limiting the number of at grade intersections along Queen Kaahumanu Highway.

Access to the Hihuhilu Development/University Center is proposed via the four alternatives. The fourth alternative, (an unimproved road across from the Airport Access Road "T") a parcel identified by TMK 7-3-10:11 containing an area of approximately 8 acres, was set aside for the proposed mauka-makai road from Queen Kaahumanu Highway to the proposed West Hawaii Campus. The tax maps show the unimproved road extending from Queen Kaahumanu Highway, mauka of the Airport Access Road in a northeasterly direction to the western boundary of the University parcel. From there, the County's *Proposed Roadway Projects Kona Area* map shows the road (identified as "University Ave.") continuing its northeasterly direction through the University parcel, and crossing the Hihuhilu parcel at its southern boundary to connect with the Makalei Estates Access Road.

Mr. George Atta, AICP
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October 24, 2003

Hiluhilu Development LLC has expressed an interest in using "University Ave." to access the development. However, we request clarification as to whether this would be in addition to one of the two alternatives that would intersect Queen Kaahumanu Highway. "University Ave." intersects a Department of Hawaiian Homes Lands parcel identified by TMK 7-3-10: 39. The Department of Transportation (DOT) is particularly concerned with the alignment of this road. According to DOT, the road should be realigned so that its intersection aligns with the access road to Keahole International Airport. Hiluhilu should coordinate with DHHL, DOT, Hawaiian Electric, and the County regarding this road. The FEIS should provide information regarding these discussions.

The preferred alternative should minimize the number of intersections on Queen Kaahumanu Highway.

The Traffic Impact Report Hiluhilu Project, (Appendix E), conducted turning movement counts at four (4) intersections. The study projected the impact the project would have on these intersections and on the proposed accesses off Queen Kaahumanu Highway (Northern Project Road), and provided mitigative measures that will be required for the roadway intersections for each of the project phases. The study did not include in its analysis the projected impact of the Northern Project Road, or the unimproved HELCO access road on the County's midlevel Roads.

The traffic impact study should provide a discussion addressing the impact the three mauka/makai connectors under consideration (Option 1-Hiluhilu Land, Option 2 Makaula (ahupuaa) connectors and the unimproved HELCO access road) on the intersections with the County's three proposed north-south arterials - Main Street, Mid-level Road, and the Kealakaa Street Extension. These planned north-south arterials are shown on the County's *Proposed Roadway Projects for the Kona Area* and portions of these roads will be constructed with the development of two projects (Kaloko Industrial Park and Kaloko-Honokohau Business Park) located south of the Hiluhilu project.

On page 3-5 of the DEIS it is stated, "Two additional north-south connector roads east of the village center...will be accommodated by the Hiluhilu roadway system." We note that the source for that information is dated 1991. The County's Keahole to Keauhou Roadway Plan (August 23, 2001) and the more recent Proposed Roadway Projects for the Kona Area (2003) both delineate three (3) north-south county arterials (Proposed Main Street, Proposed Mid-level Road and the Proposed Kealakaa Street Extension) traversing the Hiluhilu parcel. These arterials extend north from Kealakehe Parkway (the Proposed Mid-level Road and the Proposed Kealakaa Street Extension actually begin at Palani Road) to the north boundary of the Kau ahupuaa. The Hiluhilu conceptual plan appears to have incorporated the proposed right-of-ways for the County's Main Street and Kealakaa Street Extension (figures 3-1 and 3-2 of the DEIS), but the

Mr. George Atta, AICP
Page 4
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proposed right of way for the County's Mid-level Road is not shown in the plan. The Final EIS should provide a discussion regarding the impact these roads will have on the project and how the project will accommodate the County's Midlevel Road into the Hiluhilu/University Village Center.

The alignments and widths for the proposed Main Street and the proposed Mid-level Road should be coordinated with the County and accommodated within the project. It was the County's intention for the Midlevel Road to be 120-ft and the Proposed Main Street to be 80-ft. Since these roads are still in the planning stage, the developer for Hiluhilu should coordinate construction of the segments with the County's North-South arterials that will transverse the Hiluhilu parcel.

The study's assumption that Phases I and II of the Queen Kaahumanu Widening Project will be completed by 2007 may be overly optimistic. Federal funds for Phase I of the Queen Kaahumanu Highway Widening Project from Henry Street to Kealakehe Parkway will be requested during the first quarter of Federal Fiscal Year 2003 – 2004 with construction beginning sometime during the summer or fall of 2004. However, Phase II of the Queen Kaahumanu Widening Project from Kealakehe Parkway to the Kona International Airport Access Road is still in the design phase and dates for the obligation of federal and state funds have not been set. The probability that Phase II will be completed by 2007 remains uncertain. Hiluhilu Development should start coordinating the project proposed access from Queen Kaahumanu Highway with DOT. Queen Kaahumanu is a "controlled access" highway and all land developments within the area should be coordinated with the State's Queen Kaahumanu Highway widening project to explore other options for project access.

The HELCO facility is located mauka of the Kona International Airport at Keahole adjacent to the Keahole Agricultural Park fronting Queen Kaahumanu Highway. The generating station currently consists of six 2.5-megawatt diesel engine generators and one 18-megawatt combustion turbine. In September 2002, construction and operation for two 20-megawatt combustion turbines (CT) with heat recovery steam generators, one 16-megawatt steam turbine and a 235-horsepower emergency diesel fire pump, was suspended as a result of a Circuit Court Order, which reversed the March 25, 2002 Board of Land and Natural Resources (BLNR) decision to allow construction to proceed through December 31, 2003. The installation of CT-4 and CT-5 was 85% complete when construction stopped. The FEIS should provide a discussion on the status of HELCO's installation of CT-4 and CT-5.

The FEIS should provide more detail on the infrastructure - specifically water, roads, wastewater treatment, and solid waste disposal - that will be required and used for each project phase. According to the detailed land use plan provided in the *Traffic Report, Appendix E, Table 1*, by the end of Phase 2, infrastructure to support approximately 400 single-family and 100 multifamily units, 125 apartments, 80 senior

Mr. George Atta, AICP
Page 5
October 24, 2003

dwelling units, 120 hotel units, and facilities to accommodate 625 students will be in place. The FEIS should provide information on the projected water usage, solid waste and wastewater to be generated from the development of each project phase.

The County of Hawaii, Department of Environmental Management, Solid Waste Division, encourages all new development to produce a Solid Waste Management Plan. The FEIS should provide information on Hiluhilu's plan to divert construction waste, green waste, and commercial and residential waste for alternate uses rather than sending all refuse products to the County's landfills, which have finite capacity.

The Petitioner should provide more detail rather than stating that the wastewater treatment levels at the wastewater treatment facility proposed for Hiluhilu will produce a high quality effluent that will not affect groundwater or coastal waters. Depending on the type of system used, seepage from wastewater systems can have the potential to contaminate groundwater and coastal resources.

According to the DEIS passive odor control measures will be used to the extent possible, and active odor control systems will be installed if the passive system does not control odors from the WWTP. The EIS should describe the mechanics of these 'systems' and how they would work in the proposed subdivision. The Kona coast has a distinct day-night wind system, which may require special considerations when planning for odor control.

Development for part of the UHCWH is now proposed to be located within the Hulihuli parcel, and south of the proposed Hulihuli development within the ahupuaa of Makaula and Haleohiu. The new location now places the facility very close to residential areas. In the original plan the location away from residential areas was presented as an advantage. The developer should provide some discussion on how the proposed university uses may impact residential and hotel uses proposed for the Hiluhilu development.

The new location of the university/village center places it north of several archeological sites that were identified for protection within "preserves" to be incorporated into the site plan for UHCWH. We note that these have been accounted for in the site plan. But the new location for UHCWH facilities may impact archaeological sites 15262, 15299, and 15304. It is not clear from the conceptual plan (Figures 3-1 and 3-2) whether these sites have been incorporated into the new site plan.

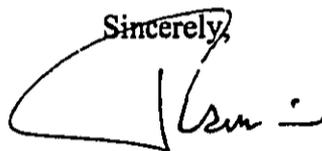
One of these sites (15262) was determined to be important for its information contact and further data collection was necessary.

Mr. George Atta, AICP
Page 6
October 24, 2003

Site no. 15299 (complex with multiple features) was determined to be significant for its information content with no further work of any kind necessary, but it was recommended that it be considered for inclusion into landscaping plans.

Site no. 15304 (petroglyph) was determined to be an excellent example of a site type and important for its information content. No further data collection was necessary, no further work was necessary, and no preservation potential outside of possible inclusion into landscaping or preservation with some level of interpretive development was recommended. The FEIS should provide discussion on whether the proposed new location for portions of the University village may impact these sites.

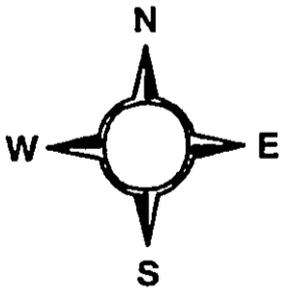
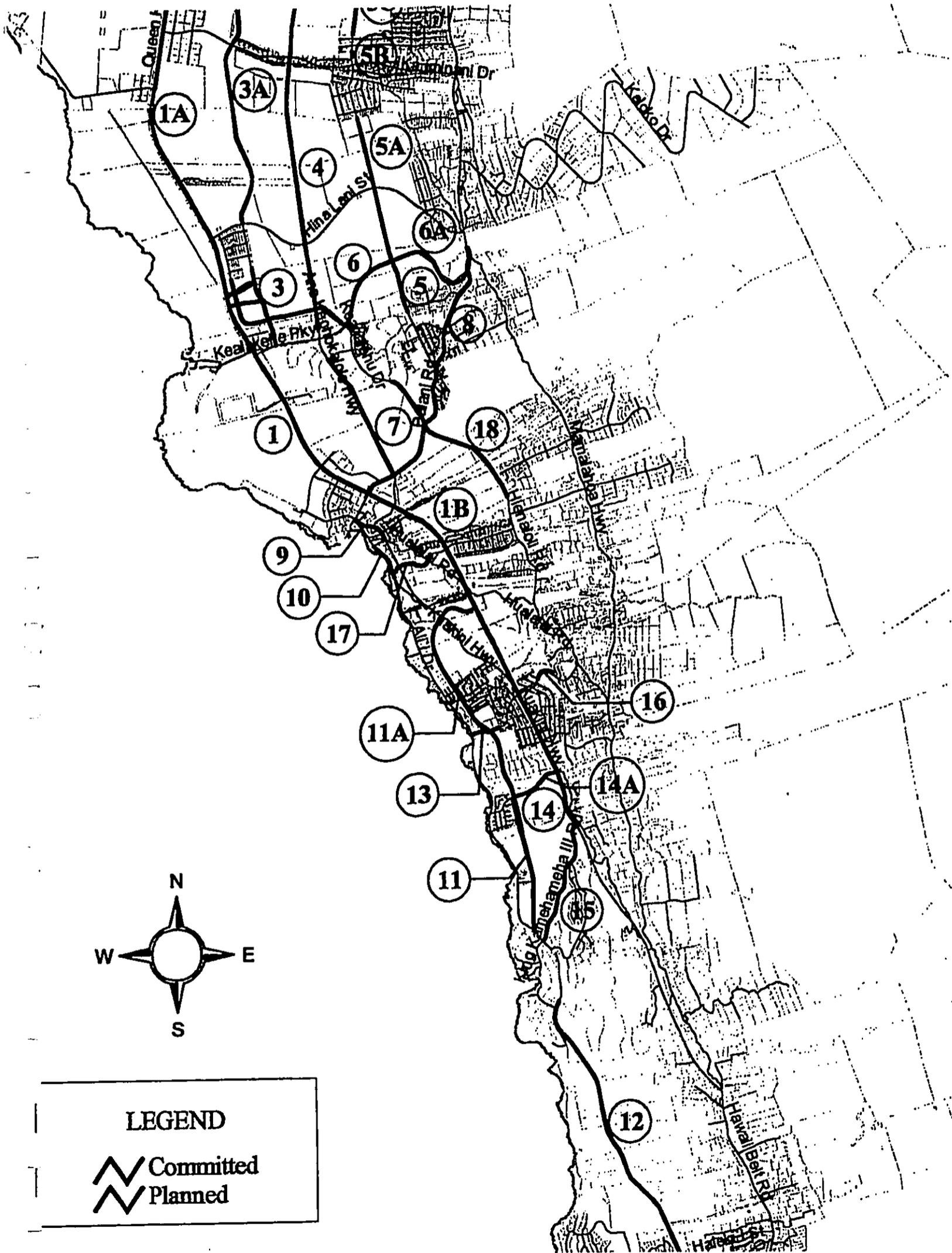
Thank you for the opportunity to comment. If you have any questions, please contact Judith Henry at 587-2803.

Sincerely,


Theodore E. Liu for
Director
Office of Planning

c: w/enclosures
Peter Young, DLNR
Anthony Ching, LUC
Genevieve K.Y. Salmonson, OEQC

RECEIVED AS FOLLOWS



LEGEND

 Committed

 Planned



GROUP 70
INTERNATIONAL

January 28, 2004

Francis S. Oda, Arch. D., AIA, AICP
Norman GY Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihel, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

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Kathryn A. Nam
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Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

Theodore E. Liu, Director
Department of Business, Economic Development & Tourism
No 1 Capitol District Building
250 South Hotel Street, 5th Floor

Subject: Hiluhilu Development (Palamanui)
Draft Environmental Impact Statement (DEIS)

Dear Mr. Liu:

With reference to your letter of October 24, 2003 we offer the following responses:

First, we wish to confirm your understanding that the program described in the DEIS reflects only the development that is occurring on the Palamanui site.

We acknowledge your comments about the locations of sites 15262, 15299 and 15304 and the need for further survey, testing and mitigation work. These sites are located on the University of Hawaii's 500 acres directly adjacent to the Hiluhilu project site. As detailed planning progresses on the 500 acres further archaeological work will probably be necessary on the sites you have identified. Since the sites are not within our property or part of our petition area we have not done any additional work on these sites. We will continue to work with the University of Hawaii to ensure that our development treats these sites respectfully.

With regard to our conceptual plans and the archaeological studies I wish to emphasize that the plans are conceptual in nature and the University side of the plan is included to provide a clearer context of how the entire development will work. Things are still flexible and as we get to a more detailed site planning phase, the University of Hawaii will need to survey the sites and design the site to accommodate these features. However, we are not at that stage at the current time.

Hiluhilu Development has been working closely with the University of Hawaii to insure that roadways, water, sewer, electrical and telecommunication infrastructure is properly planned to serve both developments. The final EIS will provide additional detail about the roles of Hiluhilu Development and the University of Hawaii.

No new State money is required for this project. The current concept is to redirect existing rents the University pays to lease space in various private facilities to house its current programs. The rents paid for these facilities will be used to pay for rental of the new spaces that will be developed for UH programs in the University Village.

Letter to Theodore E. Liu, DBEDT
Draft EIS
January 28, 2004
Page 2 of 4

Enough spaces will be developed to accommodate and consolidate all UH programs currently underway in Kailua-Kona other locales. While the UH has not specified all the facilities that they would like to build in the first phase, we will accommodate the programs they identify. Facilities will be integrated into the University Village with flexible spaces that complement the rest of the planned village.

Roadway plans are conceptual at the present time. With regard to mid-level north-south arterials and State Plans for limiting intersection points along Queen Ka'ahumanu, we have revised our plans to accommodate your points. All three mid-level road extensions are now included in our plans. Additionally, we now consider the Airport Entrance access point as the preferred alternative, subject to cost and design consideration. We are still keeping the access road from our property as an option in case the Airport Access alternative does not occur. Since Hiluhilu Development does not own the land immediately mauka of the Airport we did not initially consider it as our first choice. However, in the interim we have spoken to the Department of Land and Natural Resources (DLNR) and the Department of Hawaiian Home Lands (DHHL) and have begun discussions and preliminary planning for an access road mauka of the Airport Access Road.

The mauka makai connection from the Airport Access intersection to Makalei Drive will be completed. Our revised plan shows this linkage.

We understand your concern about the design of the intersection of the University Drive. We have recently completed some preliminary designs for this intersection and will circulate it for review with UH, HELCo, County DPW, State DLNR, State DOT and DHHL.

The selection of the University Avenue access alignment as the preferred choice minimizes the points of intersection on Queen Ka'ahumanu Highway.

The projected impact on the mid-level roads was not included because these roads do not currently exist. There are no existing conditions from which to project future impact.

There will be additional discussion of the impact of our project on the mid-level roads. However, even with the development of the Kaloko Industrial Park and the Kaloko Honokohau Business Park the mid level roads will not connect with the project site. Any regional impact will be related to impacts on Mamalahoa Highway and Queen Ka'ahumanu Highway.

Regarding the third mid-level road, we have revised our site plan to include its extension through our property. These roadways segment our project site into three sections. The degree of segmentation will depend on how wide the roadways are and the width of the right of ways. Our project would obviously add to the traffic utilizing these roads when they are built. The degree of impact and the numbers affected would depend largely on the timing of their construction and the timing of

Letter to Theodore E. Liu, DBEDT
Draft EIS
January 28, 2004
Page 3 of 4

other developments linked by these mid-level roads. At this time much of this discussion is speculative although they are conceptually reasonable.

Hiluhilu Development will reserve the necessary corridor for the planned 120-ft (Midlevel Road) and 80 ft. (Main Street) right of ways.

We acknowledge your comment about the uncertain timetable for phase 1 and 2 of the Queen Ka'ahumanu Highway expansions. We will coordinate our plans for access to the Highway with the State Department of Transportation.

With regard to HELCo's Keahole Power Plant we are aware of the status of the installation of CT-4 and CT-5. Since your letter was drafted, there has been a settlement of the lawsuit that had held up progress on the project. At this time the project is going through the Chapter 343 process with the anticipation of a boundary amendment. We do not feel this will have any detrimental impact on our project or schedule. We understand the importance of this project to regional power needs.

The FEIS will provide additional information about projected water usage, solid waste and wastewater generation by phases.

Hiluhilu Development will develop a Solid Waste Management Plan. The FEIS will provide additional information on how construction waste, green waste and commercial and residential wastes will be managed.

Regarding the wastewater system we are exploring several options from a conventional centralized treatment plant to package plants and "living machine" systems. We are investigating the construction cost, reliability and long term maintenance cost of these systems. We are aware of potentials for groundwater and coastal water contamination. Our effluent reuse and injection well systems will be designed to avoid contamination of these water bodies. Monitoring systems will be installed as necessary. Regardless of which option we finally chose, we will comply with all regulations and meet all standards set by the Department of Health.

Odor control methods depend on the technology that is used. At this time we are not able to determine what odor control methods will be needed. Initial passive measures include the placement of the centralized plant on the northwestern corner of the site away from potential population areas. Also location in the Highway buffer zone minimizes potential impacts. The golf course will also act as a buffer to populated areas by creating greater separation or uses. Enclosures, aeration and air filtration are other methods that may be implemented if needed. Biological filters used in some of the alternative technologies also reduce odor if properly maintained.

The earlier concept for UH Center West Hawaii was a commuter community college. Therefore separation was seen as a positive as there would be less interaction with nearby residential communities. The new concept for the campus is

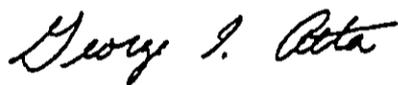
Letter to Theodore E. Liu, DBEDT
Draft EIS
January 28, 2004
Page 4 of 4

a magnet campus that will evolve into a 4+ year institution with international connections. Also, with this change there will be dormitories with resident students around the site 24 hours. The new concept will encourage lifelong learning which draws people from outside the normal student populations. With this broader vision, the proximity to a village community beyond the simple undergraduate community becomes both desirable and mutually supportive. It is part of this vision for Palamanui that retired faculty and people with international contacts will live in the community and interact with the institution both as instructors, benefactors and participants in its programs. In this kind of vision, proximity to an external community becomes an essential component of the plan.

As noted previously, sites 15262, 15299 and 15304 have not been incorporated. However, when we enter a more detailed site planning phase, these sites will be included and the site plan will account for their location and protection. The FEIS will include discussion on the treatment of these features. Further data collection will be conducted for site 15262. Sites 15299 and 15304 will be included into the landscaping with an interpretive program added.

Thank you for your comments. We look forward to continuing interaction with the Office of Planning. If there are any further questions please call me at 523-5866.

Sincerely,
Group 70 International, Inc.



George I. Atta, AICP, CEI
Project Planner

cc: Guido Giacometti
Alan Okamoto
Roger Harris

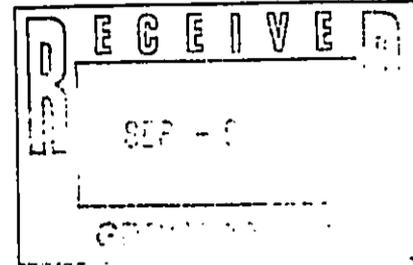
LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

PATRICIA HAMAMOTO
SUPERINTENDENT

OFFICE OF THE SUPERINTENDENT



September 5, 2003

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th floor
Honolulu, Hawai'i 96813-4307

Dear Mr. Atta:

Subject: Hiluhilu Development
Draft Environmental Impact Statement (DEIS)
Kau, North Kona, Hawai'i, TMK: 3-7-2-05:01

The Department of Education (DOE) has reviewed the DEIS for the Hiluhilu Development, LLC master planned community called University Village (Village). The DOE reviewed the Environmental Impact Statement Preparation Notice (EISPN) in May 2003.

A response letter in the addendum to the DEIS indicated that the school fair-share contribution requested by the DOE would be discussed in the DEIS. The DOE was unable to find such a discussion or any information on the potential impacts of the Village on the schools that would serve the area.

The DOE requests that the State Land Use Commission include a condition with the standard fair-share language used in decisions on land use boundary amendments. The proposed wording is:

The Applicant shall contribute to the development, funding, and/or construction of school facilities, on a fair-share basis, as determined by and to the satisfaction of the Department of Education. Terms of the contribution shall be agreed upon in writing by the Applicant and the Department of Education prior to obtaining county rezoning.

Mr. George Atta
Page 2
September 5, 2003

The DOE's formula for determining a school fair-share contribution is based on the number of residential units to be built. It is unclear from reading the DEIS how many residential units are anticipated as there are conflicting figures for the number of single-family and multi-family units between the project description, market study, and civil infrastructure sections of the DEIS. The DOE will need to know the number of single-family units, including ohana units and duplexes, being planned, along with the number of multi-family units (three or more adjoining units).

The DOE will also need clarification if the proposed student housing, senior housing, or the University Village Inn would permit the residence of children who would be attending school.

Should you have any questions, please call Ms. Rae M. Loui, Assistant Superintendent of the Office of Business Services, at 586-3444 or Mr. Raynor M. Minami, of the Facilities and Support Services Branch, at 733-4860.

Very truly yours,



Patricia Hamamoto
Superintendent

PH:hy

cc: Rae M. Loui, OBS
Anthony Ching, SLUC
Nancy Heinrich, OEQC



December 17, 2003

Francis S. Oda,
Arch. D., AIA, AICP
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Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Ms. Patricia Hamamoto
Superintendent
State of Hawaii
Department of Education
P.O. Box 2360
Honolulu, HI 96804

**Subject: Hiluhilu Development
Draft EIS**

George I. Atta, AICP
Paul P. Chorney, AIA
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Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimon, AIA
Sharon Ching Williams, AIA

Dear Ms. Hamamoto:

Thank you for the letter of September 5, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development. The following are offered in response to your comments:

1. Section 4.10 Public Services & Facilities and Section 6.2.16 of the Final EIS (FEIS) will discuss the schools in the area and potential impacts of the proposed development on schools. We will meet with the DOE Facilities Office to clarify our project and the potential impacts to the DOE.
2. The number of residential units to be planned will be included in the FEIS. Hiluhilu Development will contribute their fair share after discussions and agreements are reached with the Department of Education.
3. Specifics of potential school-aged children in this development will be addressed in Section 6.2.16. The number of single-family and multi-family units will be clarified. Also, details will be provided on the University Inn, Elderly Housing and Student Housing units that are part of the program.

Your comments and this response letter will be included in the FEIS. We appreciate your participation in the environmental review process.

Sincerely,

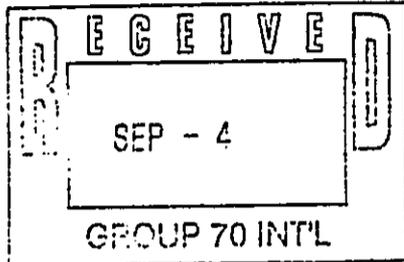
George Atta, AICP
Chief Community Planner

cc: Guido Giacometti; Roger Harris; Alan Okamoto

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH



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

In reply, please refer to:
File

August 21, 2003

Mr. Francis Oda, Arch.D., AIA, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813

Dear Mr. Oda:

**SUBJECT: Comments to the HiluHilu Development
Draft Environmental Impact Statement
Kamuela, Hawaii 96743**

Our comments should be printed as follows:

"Project activities shall comply with the Administrative Rules of the Department of Health:

- Chapter 11-46 Community Noise Control.

Should there be any questions, please contact me at 586-4701.

Sincerely,

A handwritten signature in black ink, appearing to read "Russell S. Takata".

Russell S. Takata
Program Manager
Noise, Radiation & IAQ Branch



October 6, 2003

Francis S. Oda, Arch. D., AIA, ACP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hias, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, ACP
Stephen H. Yuen, AIA
Linda C. Ma, AIA

George I. Atta, AICP
Paul P. Chorney, AIA
Wendy Lee Cook, AIA, CDT
Philip T. Cuccia
Sutobin Halim
Jeremy C. Hsu, AIA
Roy A. Incuye, AIA, CSI
Stuart M. Jew, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kitamura
Kathenne M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotolo, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimon, AIA
Sharon Ching Williams, AIA

Mr. Russell S. Takata
State of Hawai'i
Department of Health
Noise, Radiation & IAQ Branch
P.O. Box 3378
Honolulu, HI 96801-3378

Subject: **Hiluhilu Development**
Draft EIS

Dear Mr. Takata:

Thank you for the letter of August 21, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development. The following are offered in response to your comment:

1. The project activities will comply with Hawaii Administrative Rules (HAR) Chapter 11-46, Community Noise Control.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process. Please contact me if you have any further questions or comments.

Sincerely,

A handwritten signature in cursive script that reads "George Atta".

George Atta, AICP
Chief Community Planner

cc:
Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR OF HAWAII

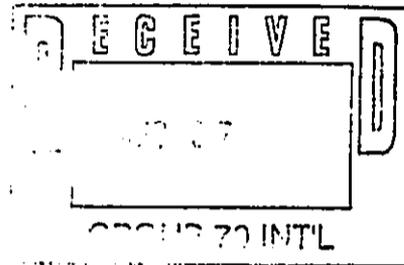


CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

August 25, 2003

In reply, please refer to:
EMD/SOWB



Mr. George Atta
Group 70 International
925 Bethel Street, 5th Floor
Honolulu, HI 96813

Dear Mr. Atta:

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT
HILUHILU DEVELOPMENT
TMK: 3-7-2-05:01

The Safe Drinking Water Branch offers the following comments on the subject document.

DRINKING WATER

The Hiluhilu project will be served by an approved water system operated by the Hawaii Department of Water Supply. Should the Hiluhilu project decide to develop its own water service and serve the development, the new water source needs to get an approval from the Department of Health, Safe Drinking Water Branch.

Underground Injection Control (UIC)

Injection wells used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under Hawai'i Administrative Rules, Title 11, Chapter 23, titled Underground Injection Control (UIC). The Department of Health's approval must be first obtained before any injection well construction commences. A UIC permit must be issued before any injection well operation occurs.

Authorization to use an injection well is granted when a UIC permit is issued to the injection well facility. The UIC permit contains discharge and operation limitations, monitoring and reporting requirements, and other facility management and operational conditions. A completed UIC permit-application form is needed to apply for a UIC permit.

Mr. George Atta
August 25, 2003
Page 2

A UIC permit can have a valid duration of up to five years.
Permit renewal is needed to keep an expiring permit valid for
another term.

GOLF COURSE

The Guidelines Applicable to Golf Courses in Hawai'i (Version 6)
should be implemented.

If you should have any questions, please call me at 586-4258.

Sincerely,



WILLIAM WONG, P.E., CHIEF
Safe Drinking Water Branch
Environmental Management Division

WW:la

Enclosure

c: /Dennis Silva
Group 70 International

STATE OF HAWAII
DEPARTMENT OF HEALTH
July 2002 (Version 6)

GUIDELINES APPLICABLE TO GOLF COURSES IN HAWAII

The State Department of Health recommends the following guidelines for all golf courses in Hawai'i to promote, protect, and enhance environmental quality and public health. These recommendations cover measures that could prevent groundwater and surface water pollution, soil contamination, chemical spills, noise and solid waste nuisances, and unsafe exposure to applied chemicals. Under certain situations, a state or county regulation may be necessarily applicable to a given activity, and such a regulation would require mandatory compliance. However, the intent of these guidelines is to voluntarily foster environmental protection and safety. Thank you for supporting these guidelines and caring about Hawai'i.

1. A groundwater or soil water monitoring plan for the purpose of preventing or minimizing groundwater contamination should be established with the following components:
 - a. Baseline groundwater quality;
 - b. Monitoring locations consisting of monitoring wells or lysimeters, or combination of both;
 - c. Routine groundwater and/or soil water monitoring at frequencies such as quarterly, semiannually, or annually depending on the use of chemicals and the detection of contaminants;
 - d. A list of chemicals and fertilizers that will be or have been used that may affect soil or groundwater adversely, and the analyses for such contaminants;
 - e. Recordkeeping of monitoring results and a system of tracking trends in order to prevent, minimize, or mitigate occurrences of contamination;
 - f. A procedure to notify all affected parties and the Department of Health of occurrences of contamination that pose, or may pose, a threat to public health or the environment.
 - g. Availability of monitoring data to any interested person.
2. A surface water monitoring plan, if applicable, for the purpose of preventing or minimizing surface water contamination should be established using the principles of item No. 1.
3. If the golf course uses recycled water (treated wastewater) for irrigation, please refer to the Department of Health's Guidelines for the Treatment and Use of Recycled Water, May 15, 2002, for recycled water requirements. Information about this subject may be obtained from the Department's Wastewater Branch at 586-4294 (Honolulu).

4. The use of an above-ground storage tank with applicable safety considerations for petroleum products, used for fueling golf carts, maintenance vehicles, or emergency generators, should be preferred over an underground storage tank in order to easily detect leaks and minimize the risk of soil and groundwater contamination resulting from a leaking storage tank. Information about underground storage tanks may be obtained from the Department's Solid and Hazardous Waste Branch at 586-4226 (Honolulu).
5. Buildings used to store fertilizers, pesticides, algicides, fungicides, herbicides, and other chemicals especially in liquid form should be designed purposely for the containment and recovery of a catastrophic spill or leak of contents. An early warning system for spill or leak detection is advantageous.
6. Noise and dust from maintenance or construction activities should not disturb neighbors. Maintenance or construction activities should be scheduled and conducted accordingly.
7. Solid wastes should be managed without creating a nuisance. Furthermore, all green waste generated by the golf course should be reused on-site. Shredding and composting are activities that precede the reuse of green waste as a soil conditioner or a ground cover for weed control. Space and equipment should be provided to accomplish these activities. Additionally, where practicable, locally produced compost and soil amendments should be used whenever available.
8. Chemicals should be handled and applied according to instructions, and offsite drift during application should not occur. Methods of application and weather conditions should be chosen to optimize success.
9. A Best Management Practices (BMP) plan should be made for the golf course. The BMP plan functions as a hands-on environmental and worker safety maintenance manual that describes in plain English the elements and procedures for irrigation, chemical use, processing and reuse of green wastes, minimizing or preventing runoff, soil erosion and nuisance conditions, and sustaining worker safety. Use of the BMP should prevent the occurrence or recurrence of environmental or safety problems. The BMP should be available to any interested person.
10. Agencies or organizations such as the State Department of Agriculture, the Federal National Resource Conservation Service, and the Golf Course Superintendents Association of America may provide ideas or practices that would help to achieve the intent of these guidelines. Inquiries to these sources of information are advantageous.

The Department of Health appreciates your cooperation to preserve and protect environmental quality in Hawai'i. Questions about these guidelines may be directed to the Groundwater Pollution Control Section of the Safe Drinking Water Branch at 586-4258 (Honolulu). Direct toll free calls can be made from Kaua'i: 274-3141, ext. 64258; Maui: 984-2400, ext. 64258; Big Island: 974-4000, ext. 64258; Molokai and Lana'i: 1-800-468-4644, ext. 64258.



December 17, 2003

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Mr. William Wong, Chief
Safe Drinking Water Branch
Environmental Management Division
State of Hawai'i
Department of Health
P.O. Box 3378
Honolulu, HI 96801-3378

**Subject: Hiluhilu Development
Draft EIS**

George I. Atta, AICP
Paul P. Chorney, AIA
Wendy Lee Cook, AIA, CDT
Philip T. Cuccia
Sutobin Halim
Jeremy C. Hsu, AIA
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
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Kyle K. Nakamoto
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Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimoto, AIA
Sharon Ching Williams, AIA

Dear Mr. Wong:

Thank you for the letter of August 25, 2003, regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development. The following are offered in response to your comments:

DRINKING WATER

The Hiluhilu project will be served by an approved water system operated by the Hawaii Department of Water Supply (DOW). The planned water supply infrastructure improvements include distribution lines and storage reservoirs. We will seek approval from your office when we develop our own water service for this development. Our coordinating effort with the Hawaii County Department of Water Supply and State Department of Land and Natural Resources (DLNR) aims to improve the water distribution system for the region.

UNDERGROUND INJECTION CONTROL (UIC)

The UIC Live is located just off site from our property. While we will be using our effluent golf course irrigation we are planning to develop injection wells on an adjacent parcel for back-up disposal if necessary. This effort is in the planning phase. We do not anticipate the need for UIC permits for our storm drain system, which will be designed to meet DOH standards. The Department of Health's approval will be obtained prior to any commencement of construction relating to injection wells used for subsurface disposal of wastewater, sewage effluent, or surface runoff.

GOLF COURSE

Thank you for providing a copy of the July 2002 version of the State of Hawaii Department of Health Guidelines Applicable to Golf Courses in Hawaii. We recognize that these guidelines are provided to promote, protect, and enhance environmental quality and public health. To the extent possible, the project will implement these guidelines when developing the project Golf Course. The guidelines provide useful recommendations to prevent groundwater and surface

Letter to Mr. William Wong, DOH Safe Drinking Water Branch
December 17, 2003
Page 2 of 2

water pollution, soil contamination, chemical spills, noise and solid waste nuisances, and unsafe exposure to applied chemicals.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,

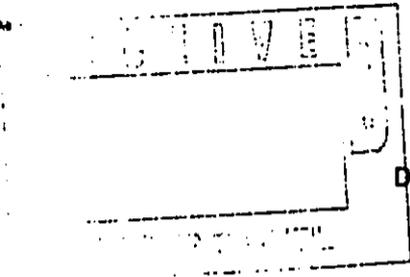


George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR OF HAWAII



**STATE OF HAWAII
DEPARTMENT OF HEALTH**

P.O. BOX 3378
HONOLULU, HAWAII 96801

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EMD / WB

H7 2 003 001.wpd
WTP9 030754

September 4, 2003

Mr. Francis Oda
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Oda:

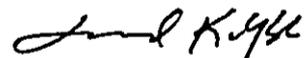
Subject: Draft Environmental Impact Statement
Hiluhilu Development
TMK: (3) 7-2-005: 001 725 acres

We have reviewed the subject document which proposes to develop a 725 acres of vacant land mauka of Queen Kaahumanu Highway and makai of Makalei Estates in North Kona.

As wastewater treatment and disposal have been addressed in the DEIS, we have no objections to the proposed development which will construct a self-contained wastewater collection, treatment and disposal system for the Hiluhilu Development. We are also pleased that R-1 water produced by the WWTP will be pumped to a storage reservoir for use in the golf course irrigation system.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems" and to the Department's Guidelines for the Treatment and Use of Recycled Water, May 15, 2002. We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at 586-4294.

Sincerely,


HAROLD K. YEE, P.E., CHIEF
Wastewater Branch

LNK:erm



December 15, 2003

Mr. Harold K. Yee, Chief
Wastewater Branch
State of Hawai'i
Department of Health
P.O. Box 3378
Honolulu, HI 96801-3378

**Subject: Hiluhilu Development
Draft EIS**

Dear Mr. Yee:

Thank you for the letter of September 4, 2003 regarding the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development.

We appreciate your review and comments regarding the proposed self-contained wastewater collection, treatment and disposal system for the project. The following are offered in response to your comments:

Wastewater plans will conform to applicable provision of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems" and to the Department's Guidelines for the Treatment and Use of Recycled Water, May 15, 2002. Pre-final plans will be submitted to the Department of Health for review and conformance.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

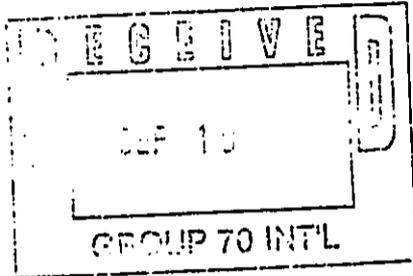
Francis S. Oda,
Arch. D., AIA, ACP
Norman G.Y. Hong, AIA
Shervi B. Seaman, AIA, ASID
Hitosni Hida, AIA
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James I. Nishimura, AIA
Ralph E. Postmore, AICP
Stephen H. Yuen, AIA
Linda C. Mik, AIA

George I. Atta, AICP
Paul P. Chomey, AIA
Wendy Lee Cook, AIA, CDT
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Sharon Ching Williams, AIA

LINDA LINGLE
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH



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

In reply, please refer to:
File:

September 5, 2003

03-955A CAB

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Atta:

SUBJECT: Draft Environmental Impact Statement for the Hiluhilu Master Plan
Project, North Kona; TMK: 3-7-2-05:01

This letter is to transmit the following comments on the subject document:

Control of Fugitive Dust:

There is a significant potential for fugitive dust emissions during all phases of construction. Proposed construction activities will occur in proximity to existing public areas, residences and major thoroughfares, thereby exacerbating potential dust problems. It is recommended that a dust control management plan be developed which identifies and addresses all activities that have a potential to generate fugitive dust. Implementation of adequate dust control measures during all phases of development and construction activities is warranted.

Construction activities must comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust.

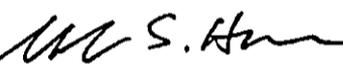
The contractor should provide adequate measures to control dust from the road areas and during the various phases of construction. These measures include, but are not limited to, the following:

Mr. George Atta
September 5, 2003
Page 2

- a) Plan the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;
- b) Provide an adequate water source at the site prior to start-up of construction activities;
- c) Landscape and provide rapid covering of bare areas, including slopes, starting from the initial grading phase;
- d) Minimize dust from shoulders and access roads;
- e) Provide adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
- f) Control dust from debris being hauled away from the project site.

If you have any questions, please contact Mr. Barry Ching of my staff at 586-4200.

Sincerely,

for 
WILFRED K. NAGAMINE
Manager, Clean Air Branch

BC:jhm



December 17, 2003

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASD
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Mr. Wilfred K. Nagamine, Manager
Clean Air Branch
Department of Health
State of Hawai'i
P.O. Box 3378
Honolulu, HI 96801-3378

**Subject: Hiluhilu Development
Draft EIS**

George I. Atta, AICP
Paul P. Chorney, AIA
Wendy Lee Cook, AIA, CDT
Philip T. Cuccia
Sutobin Halim
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Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimon, AIA
Sharon Ching Williams, AIA

Dear Mr. Nagamine:

Thank you for the letter of September 5, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development. The following are offered in response to these comment letters:

We recognize the potential for fugitive dust emissions during construction. A dust control management plan will be developed prior to construction activities. In addition, construction activities will comply with the provision of Hawaii Administrative Rules, Section 11-60.1-33 on Fugitive Dust. The six mitigation measures identified in your letter will be part of the overall dust mitigation plan.

Discussion of fugitive dust control will be included in section 6.1 and 6.2 of the FEIS. Additionally, the measures you mentioned in your letter will be implemented during construction.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc:

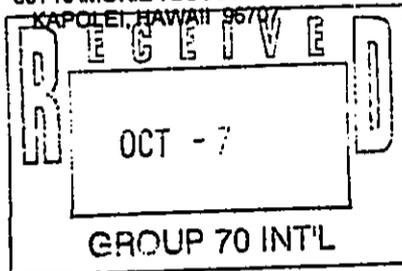
Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

October 2, 2003

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

LOG NO: 2003.1877
DOC NO: 0309JK32

Dear Mr. Atta:

**SUBJECT: Chapter 6E-42 Review (State) Draft Environmental Impact Statement (EIS)
Hiluhilu Development, LLC
Kau, North Kona, Hawai'i Island
TMK: (3) 7-2-005: 001**

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (EIS) for Hiluhilu Development, LLC. The DEIS was received in our office on August 13, 2003. We apologize for our late review.

The DEIS describes a proposal by Hiluhilu Development LLC to develop a 725 acre parcel with residential units, mixed uses, an 18 hole golf course and a university village center. The proposed project area is a portion of a larger 1000 acre property that was subjected to an archaeological inventory survey by Ogden Environmental and Energy Services Company, Inc. in 1990. The Ogden survey report was reviewed and approved by our office.

The adequacy of the 1990 Ogden survey came into question, however, during the subsequent data recovery phase of work in the upper portion of the survey area. Our office was apprised of this situation, along with the landowner, who agreed to the need for a second survey of the subject area. Rechtman Consulting, LLC was hired to undertake a second archaeological survey and a cultural impact study for the proposed development. We are currently in the process of reviewing draft reports on the survey and cultural impact study, both of which were included in the DEIS. At this point in time we cannot comment on the adequacy of the two studies and the recommendations contained therein, except to say that there will be a need to develop and implement an archaeological mitigation plan for the proposed development.

Mr. George Atta, AICP
Page 2

If you have any further questions, please call our Hawaii Island Archaeologist, Patrick C. McCoy, at 692-8029.

Aloha,

P. Holly McEldowney

P. Holly McEldowney, Acting Administrator
Historic Preservation Division

c. Hawaii State Land Use Commission
Office of Environmental Quality Control
Chris Yuen, Director, Dept of Planning, County of Hawaii

JK:ak

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

September 4, 2003

HILUHILU.RCM

LD-NAV

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

SUBJECT: Draft Environmental Assessment for Hiluhilu Development
North Kona Judicial District, Island of Hawaii

Thank you for the opportunity to review and comment on the subject matter.

A copy of the Draft Environmental Assessment pertaining to the subject matter was made available to the following Department of Land and Natural Resources' Divisions for their review and comment:

- Division of Forestry & Wildlife
- Division of State Parks
- Engineering Division
- Office of Conservation and Coastal Lands
- Land-Hawaii District Land Office

Attached herewith is a copy of the Engineering Division and Division of State Parks comment

The Department of Land and Natural Resources has no other comment to offer.

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at (808) 587-0384.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Dierdre S. Mamiya".

DIERDRE S. MAMIYA
Administrator

C: HDLO

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/NAV

Ref.: ALUHILU-CMT

COMMENTS

- () We confirm that the project site is located in Zone _____.
- () Please note that the project site is located in Zone X.
- () Please note that the correct Flood Zone designation for the project site is _____.
- () Please note that the project must comply with rules and regulations of the National Flood Insurance Program (NFIP), whenever work is required within a flood zone. If there are questions regarding the NFIP, please contact the State Coordinator, Mr. Sterling Yong, of the Department of Land and Natural Resources at 587-0248. If there are questions regarding flood ordinances, please call the applicable County coordinators below:
 - () Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
 - () Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
 - () Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning..
 - () Mr. Wallace Kudo at (808) 241-6620 of the County of Kauai, Department of Public Works
- () The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
- () The applicant should provide the water demands and calculations to the Engineering Division the water demands will be included in the State Water Projects Plan update.
- () Additional Comments: _____

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at 587-0229.

Signed: *Eric T. Hirano*
ERIC T. HIRANO, CHIEF ENGINEER

Date: 8/20/03



October 21, 2003

Mr. Eric Hirano
Engineering Division
Department of Land and Natural Resources
State of Hawai'i
P.O. Box 621
Honolulu, HI 96809

Subject: Hiluhilu Development
Draft EIS

Dear Mr. Hirano:

Thank you for the letter of August 20, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development.

The following are offered in response to these comment letters:

We will note in the Final EIS that the project site is located in Zone X.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process. Please contact me if you have any further questions or comments.

Sincerely,

George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

FILE

- Francis S. Oda, Arch. D., AIA, AICP
- Norman G.Y. Hong, AIA
- Steven B. Seaman, AIA, ASID
- Hiromi Hida, AIA
- Roy H. Nihel, AIA, CS
- James I. Nishimoto, AIA
- Ralph E. Portmore, AICP
- Stephen M. Y. Lee, AIA
- Linda C. Minn, AIA
- George I. Atta, AICP
- Paul P. Chomley, AIA
- Wendy Lee Cook, AIA, AICP
- Philip T. Cuculis
- Stanton Mallin
- Jeremy C. Hsu, AIA
- Roy A. Nohy, AIA, CSI
- Stuart M. Jow, AIA
- Charles Y. Karesimo, AIA
- Dean H. Kitanoue
- Katherine M. MacNeil, AIA
- Frank B. McGuire
- Kyle K. Nakamoto
- Kathryn A. Nam
- Jeffrey H. Overton, AICP
- Christine M. Rictor, AICP
- James L. Stone, AIA
- Scott Tangonan
- Wesley N. Ujimoto, AIA
- Sharon Ching Williams, AIA

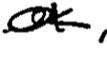
STATE OF HAWAII
Department of Land and Natural Resources
Division of State Parks
Park Planning Branch
Honolulu, Hawaii

August 18, 2003

Memorandum

To: Daniel S. Quinn, State Parks Administrator
From:  Lauren Tanaka
Subject: Addendum to DEIS for Hiluhilu Development, LLC

We reviewed the Master Plan for this project and had no comments. Although the attached transmittal letter indicates the DEIS is attached, it is only an addendum of the responses to comments on the DEIS. We have not received the DEIS as of this date.

Lauren 




October 21, 2003

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimura, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Ms. Lauren Tanaka
State of Hawaii
Department of Land & Natural Resources
Division of State Parks
1151 Punchbowl St., Room 310
Honolulu, HI 96813

**Subject: Hiluhilu Development
Draft EIS**

George I. Atta, AICP
Paul P. Chorney, AIA
Wendy Lee Cook, AIA, CDT
Philip T. Cuccia
Sutobin Halim
Jeremy C. Hsu, AIA
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kitamura
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimon, AIA
Sharon Chng Williams, AIA

Dear Ms. Tanaka:

Thank you for your letter of August 18, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development.

We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

FILE

RECEIVED AS FOLLOWS



January 5, 2004

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hiroshi Mice, AIA
Roy H. Nihel, AIA, CSI
James I. Nishimoto, AIA
Raion E. Paratore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Ms. Lauren Tanaka
State of Hawaii
Department of Land & Natural Resources
Division of State Parks
1151 Punchbowl St., Room 310
Honolulu, HI 96813

Subject: Hiluhilu Development
Draft EIS

George I. Atta, AICP
Paul P. Chorney, AIA
Philip T. Cuccia
Sulocin Halim
Roy A. Inouye, AIA, CSI
Frank M. Iov, AIA
James Y. Kaneshiro, AIA
Dean H. Kikumura
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle X. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotolo, AICP
James L. Stone, AIA
Scott Tangoren
Wesley N. Ujimon, AIA

Dear Ms. Tanaka:

According to your letter of August 18, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development, your office did not receive a complete copy of the subject report.

Attached is a copy of the Draft EIS report for the Hiluhilu Development for your review and comment.

We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF STATE PARKS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

JAN 28 2004

January 27, 2004

George Atta, Chief Community Planner
Group:70 International, Inc.
925 Bethel St., 5th floor
Honolulu, Hawai'i 96813-4307

Dear Mr. Atta:

Thank you for the opportunity to review and comment on the draft Environmental Impact Statement (DEIS) for Hiluhilu Development.

We reviewed the information and find that there are no known State Parks concerns with the project at this time. Enclosed is the CD of the DEIS which we are returning.

Sincerely,

A handwritten signature in cursive script, appearing to read "Daniel S. Quinn".

Daniel S. Quinn, Administrator

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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



GROUP 70
INTERNATIONAL

January 28, 2004

Daniel S. Quinn, Administrator
Division of State Parks
Department of Land and Natural Resources
Post Office Box 621
Honolulu, Hawaii 96809

Francis S. Oda, Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Raigh E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Re: Draft Environmental Impact Statement (DEIS) for Palamanui;
A Hihuhilu Development

Dear Mr. Quinn:

Thank you for your letter of January 27, 2004 noting that there were no State Parks concerns regarding our project at the present time.

Sincerely,

George I. Atta, AICP
Project Manager

Cc. G. Giacometti; A. Okamoto; R. Harris; K. Evans

George I. Atta, AICP
Paul P. Chomey, AIA
Philip T. Cuccia
Sutodin Halim
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kitamura
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimoto, AIA

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

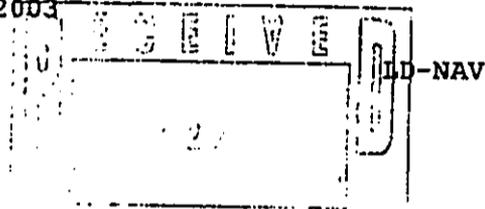
ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

September 18, 2003

HILUHILU.RCM3

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307



Dear Mr. Atta:

SUBJECT: Draft Environmental Assessment for Hiluhilu Development
North Kona Judicial District, Island of Hawaii

This is a follow-up to our letter to our letter to you dated
September 5, 2004, pertaining to the subject matter.

Enclosed please find a copy of the Na Ala Hele Hawaii Trail and
Access System comment.

The Department of Land and Natural Resources has no other comment
to offer on the subject matter.

Should you have any questions, please contact Nicholas A. Vaccaro
of the Land Division Support Services Branch at (808) 587-0384.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Dierdre S. Mamiya".

DIERDRE S. MAMIYA
Administrator

C: HDLO



NA ALA HELE
Hawaii Trail & Access System

RECEIVED
LAND DIVISION

2003 SEP 11 A 10: 53

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

September 5, 2003

MEMORANDUM

TO: Nick Vaccaro, Land Agent
Land Division

THRU: Roger H. Imoto, Forestry and Wildlife Branch Manager *RHI*

FROM: *IK* Irving Kawashima, Acting Na Ala Hele Trails & Access Specialist

SUBJECT: **Comments For Draft Environmental Impact Statement - Hiluhilu Development, Mahaiula-Kau, North Kona, Hawaii TMK: (3) 7-2-05:01. (Ref: HA - 2003-004, LD-PEM)**

DOFAW would like to provide additional comments for your consideration. The developer should consult with the State of Hawaii's Historic Preservation Division to determine the cultural significance of the 1900 + meters of trails mentioned in the ADDENDUM: Archaeological Inventory Survey of the Kau Development Area. DOFAW'S Abstractor did not uncover any evidence of ancient trails within the project area and speculates that these trails were used prior to any survey documentation. Survey documents only existed up until 1845. The developer should also consult with the Na Ala Hele Trails and Access Advisory Council which includes our DOFAW Hawaii Branch, Acting Na Ala Hele Trails and Access Specialist, Mr. Irving Kawahaima. They would like to visit these trail sites and provide input for the treatment of historic Hawaiian trails. Mr. Kawashima can be reached at our Branch office in Hilo by calling 974-4217. We appreciate the opportunity to comment on this project.

CC: Curt Cottrell, Trail & Access Program Manager
D. Moana Rowland, Abstractor
Nelson Ayers, DOFAW Administration Forester



December 15, 2003

Ms. Dierdre S. Mamiya, Administrator
Land Division
Department of Land and Natural Resources
State of Hawai'i
P.O. Box 621
Honolulu, HI 96809

**Subject: Hiluhilu Development
Draft EIS**

Dear Ms. Mamiya:

Thank you for the letter of September 18, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development. We received the copy of the Na Ala Hele Hawaii Trail and Access System comment dated September 5, 2003 that you enclosed.

The following are offered in response to these comment letters:

The State of Hawaii Historic Preservation Division will be consulted regarding the cultural significance of the 1900+ meters of trails mentioned in the addendum.

In addition, Mr. Irving Kawahaima, Acting Na Ala Hele Trails and Access Specialist will be contacted. We recognize there may be valuable input from the Na Ala Hele Trails and Access Advisory Council regarding the treatment of historic Hawaiian trails and interest in visiting the existing trail sites.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process. Please contact me if you have any further questions or comments.

Sincerely,

George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

September 5, 2003

HILUHILU.RCM2

LD-NAV

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

SUBJECT: Draft Environmental Assessment for Hiluhilu Development
North Kona Judicial District, Island of Hawaii

This is a follow-up to our letter to our letter to you dated
September 4, 2004, pertaining to the subject matter.

Enclosed please find a copy of the Division of Forestry and
Wildlife comment.

The Department of Land and Natural Resources has no other comment
to offer on the subject matter at this time.

Should you have any questions, please contact Nicholas A. Vaccaro
of the Land Division Support Services Branch at (808) 587-0384:

Very truly yours,

A handwritten signature in cursive script, appearing to read "Dierdre S. Mamiya".

DIERDRE S. MAMIYA
Administrator

C: HDLO

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

Division of Forestry & Wildlife

1151 Punchbowl Street, Rm. 325 • Honolulu, HI 96813 • (808) 587-0166 • Fax (808) 587-0160

August 21, 2003

MEMORANDUM

TO: Nick Vaccaro, Land Agent
Land Division

THRU: Dierdre S. Mamiya, Administrator
Land Division

FROM: *Michael G. Buck*
Michael G. Buck, Administrator
Division of Forestry and Wildlife

RECEIVED
LAND DIVISION
2003 AUG 25 A 9:39
DEPT OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

SUBJECT: **Draft Environmental Impact Statement - Hiluhilu Development,
Mahaiula-Kau, North Kona, Hawaii TMK: (3) 7-2-05:01.
(Ref: HA - 2003-004, LD-PEM)**

DOFAW has reviewed this subject document and provide the following comments for your consideration. The Developer must actively commit to the management of threatened and endangered plant species in approximately 65-75 acres of the lowland dry forest mentioned in section 6.1.3 - Vegetation and Wildlife of the draft EIS. This shall be accomplished through the North Kona Dry Forest Working Group which includes our DOFAW Hawaii Branch, Natural Area Specialist, Ms. Lisa Hadway. She can be reached at our Branch office in Hilo by calling 974-4383 to address DOFAW's concerns with the development of the management plan for endangered species. The plan must also address methods to control the invasive fountain grass during construction and post-construction because wildland fires are a major threat to the area that have destroyed most of all the native dryland habitat there. In conclusion, the Developer must commit to a long-term management for endangered plants to include periodic monitoring to assure that the mitigative prescriptions are successfully completed in the management plan. We appreciate the opportunity to comment on this project.

C: Hawaii DOFAW Branch
Vickie Caraway, State Botanist
Lisa Hadway, NARS Specialist, Hawaii Branch



December 17, 2003

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hide, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Mr. Michael G. Buck
Administrator
State of Hawaii
Department of Land & Natural Resources
Division of Forestry and Wildlife
1151 Punchbowl St, Room 325
Honolulu, HI 96813

Subject: Hiluhilu Development
Draft EIS

George I. Atta, AICP
Paul P. Chorney, AIA
Wendy Lee Cook, AIA, CDT
Philip T. Cuccia
Sutobin Halim
Jeremy C. Hsu, AIA
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kitamura
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimon, AIA
Sharon Ching Williams, AIA

Dear Mr. Buck:

Thank you for the letter of August 21, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development. The following are offered in response to your comments:

1. The developer will actively commit to the management of threatened and endangered plant species in the approximately 65-acre forest preserve that we are establishing. Roger Harris of our project team is a member of the North Kona Dry Forest Working Group and will work with Ms. Lisa Hadway.
2. The Final EIS (FEIS) will also address methods to control the invasive fountain grass during construction and post-construction in order to mitigate any potential wildland fires.
3. Long-term management for endangered plants will be discussed in Section 6.2.6, Vegetation and Wildlife.

Your comments and this response letter will be included in the FEIS. We appreciate your participation in the environmental review process.

Sincerely,

A handwritten signature in cursive script that reads "George Atta".

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

January 14, 2004

HILUHILUDEA.RCM4

RECEIVED

LD-NAV

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

JAN 15 2004

Dear Mr. Atta:

SUBJECT: Draft Environmental Assessment for Hiluhilu Development
North Kona Judicial District, Island of Hawaii

Thank you for the opportunity to review and comment on the subject matter.

A copy of the Draft Environmental Assessment pertaining to the subject matter was made available to the following Department of Land and Natural Resources' Divisions for their review and comment:

- Division of Forestry & Wildlife
- Division of State Parks
- Engineering Division
- Commission on Water Resource Management
- Office of Conservation and Coastal Lands
- Land-Hawaii District Land Office

Enclosed please find a copy of the Division of Forestry and Wildlife comment.

The Department of Land and Natural Resources has no other comment to offer at this time.

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at (808) 587-0384.

Very truly yours,

DIERDRE S. MAMIYA
Administrator

C: HDLO

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 29, 2003

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER

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

LD/NAV
Ref.: HILUHILUDEA.CMT2

Suspense Date: 1/12/04

MEMORANDUM:

TO:

- *XXX Division of Forestry & Wildlife
- *XXX Division of State Parks
- *XXX Engineering Division
- *XXX Commission on Water Resource Management
- *XXX Office of Conservation and Coastal Lands
- *XXX Land-Hawaii District Land Office

FROM: Deirdre S. Mamiya, Administrator
Land Division

DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE OF HAWAII
LAND DIVISION

2004 JAN - 9 P 4: 28

RECEIVED
LAND DIVISION

SUBJECT: Draft Environmental Assessment for Hiluhilu Development
North Kona, Island Of Hawaii - TMK: (3) 7-2-005: 001

Please review the document pertaining to the subject matter and submit your comments (if any) on Division letterhead signed and dated by the suspense date.

If you have any questions, please contact Nicholas A. Vaccaro at ext.: 7-0384.

Note: One (1) copy of the document is available for your review in the Land Division Office, Room 220.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

() We have no comments.

Division _____

Date: JAN - 8 2003

(X) Comments attached.
Signed: *[Signature]*

Title: MICHAEL G. BUCK, ADMINISTRATOR
DIVISION OF FORESTRY AND WILDLIFE

COPY

Division of Forestry & Wildlife

1151 Punchbowl Street, Rm. 325 • Honolulu, HI 96813 • (808) 587-0166 • Fax: (808) 587-0160

August 21, 2003

MEMORANDUM

TO: Nick Vaccaro, Land Agent
Land Division

THRU: Dierdre S. Mamiya, Administrator
Land Division

FROM: *Michael G. Buck*
Michael G. Buck, Administrator
Division of Forestry and Wildlife

SUBJECT: **Draft Environmental Impact Statement - Hiluhilu Development,
Mahaiula-Kau, North Kona, Hawaii TMK: (3) 7-2-05:01.
(Ref: HA - 2003-004, LD-PEM)**

DOFAW has reviewed this subject document and provide the following comments for your consideration. The Developer must actively commit to the management of threatened and endangered plant species in approximately 65-75 acres of the lowland dry forest mentioned in section 6.1.3 - Vegetation and Wildlife of the draft EIS. This shall be accomplished through the North Kona Dry Forest Working Group which includes our DOFAW Hawaii Branch, Natural Area Specialist, Ms. Lisa Hadway. She can be reached at our Branch office in Hilo by calling 974-4383 to address DOFAW's concerns with the development of the management plan for endangered species. The plan must also address methods to control the invasive fountain grass during construction and post-construction because wildland fires are a major threat to the area that have destroyed most of all the native dryland habitat there. In conclusion, the Developer must commit to a long-term management for endangered plants to include periodic monitoring to assure that the mitigative prescriptions are successfully completed in the management plan. We appreciate the opportunity to comment on this project.

C: Hawaii DOFAW Branch
Vickie Caraway, State Botanist
Lisa Hadway, NARS Specialist, Hawaii Branch

COPY



NA ALA HELE
Hawaii Trail & Access System

September 5, 2003

MEMORANDUM

TO: Nick Vaccaro, Land Agent
Land Division

THRU: Roger H. Imoto, Forestry and Wildlife Branch Manager *RHI*

FROM: *IK*
Irving Kawashima, Acting Na Ala Hele Trails & Access Specialist

SUBJECT: Comments For Draft Environmental Impact Statement - Hiluhilu Development, Mahaiula-Kau, North Kona, Hawaii TMK: (3) 7-2-05:01. (Ref: HA - 2003-004, LD-PEM)

DOFAW would like to provide additional comments for your consideration. The developer should consult with the State of Hawaii's Historic Preservation Division to determine the cultural significance of the 1900 + meters of trails mentioned in the ADDENDUM: Archaeological Inventory Survey of the Kau Development Area. DOFAW'S Abstractor did not uncover any evidence of ancient trails within the project area and speculates that these trails were used prior to any survey documentation. Survey documents only existed up until 1845. The developer should also consult with the Na Ala Hele Trails and Access Advisory Council which includes our DOFAW Hawaii Branch, Acting Na Ala Hele Trails and Access Specialist, Mr. Irving Kawahaima. They would like to visit these trail sites and provide input for the treatment of historic Hawaiian trails. Mr. Kawashima can be reached at our Branch office in Hilo by calling 974-4217. We appreciate the opportunity to comment on this project.

CC: Curt Cottrell, Trail & Access Program Manager
D. Moana Rowland, Abstractor
Nelson Ayers, DOFAW Administration Forester



GROUP 70
INTERNATIONAL

January 29, 2004

Francis S. Oda,
Arch. D., AIA, AICP
Norman GY. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Ms. Dierdre S. Mamiya, Administrator
Land Division
Department of Land and Natural Resources
State of Hawai'i
P.O. Box 621
Honolulu, HI 96809

**Subject: Hiluhilu Development
Draft EIS**

George I. Atta, AICP
Paul P. Chorney, AIA
Philip T. Cuccia
Sutobin Halim
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kitamura
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujman, AIA

Dear Ms. Mamiya:

Thank you for the letter of January 14, 2004 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development.

We understand that a copy of the Draft EIS was made available to the following DLNR divisions for their review: Division of Forestry and Wildlife, Division of State Parks, Engineering Division, Commission on Water Resource Management, Office of Conservation and Coastal Lands, and Land-Hawaii District Land Office.

We received the copy of the Division of Forestry and Wildlife comment dated December 29, 2003 and August 21, 2003. We have responded to these comments in a letter dated December 17, 2003. We recognize that the Department of Land and Natural Resources has no other comment to offer at this time.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process. Please contact me if you have any further questions or comments.

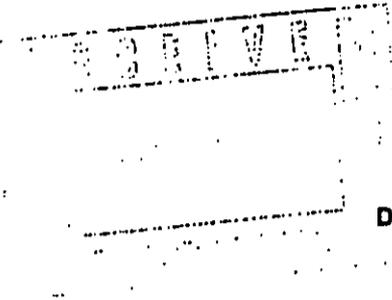
Sincerely,
Group 70 International, Inc.

George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

LINDA LINGLE
GOVERNOR



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

RODNEY K. HARAGA
DIRECTOR

Deputy Director
BRUCE Y. MATSUI
LINDEN H. JOESTING
BRIAN H. SEKGUCHI

IN REPLY REFER TO:

STP 8.0934

November 12, 2003

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Atta:

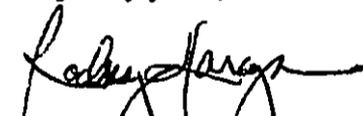
Subject: Hiluhilu Development
Draft Environmental Impact Statement (DEIS)

Thank you for allowing us the time to review the subject impact statement. The following are our comments at this time.

1. Our earlier comments Nos. 6 and 7, regarding airport/aviation concerns, in our letter of May 9, 2003 on the Environmental Preparation Notice are still applicable.
2. Another comment, which we made as part of Comment No. 1 in the same May 9 letter, regarding a proposed road from the Hiluhilu project intersecting with Queen Kaahumanu Highway at the entrance access road to Kona International Airport is still applicable because of its impact to the airport and the highway.
3. Our Highways Division is finalizing its review of the Draft EIS and we will provide the comments to you as soon as they are completed.

We appreciate your cooperation in understanding that we have concerns about the impacts that the Hiluhilu Development will have on our transportation facilities.

Very truly yours,


RODNEY K. HARAGA
Director of Transportation

c: Anthony Ching, Hawaii State Land Use Commission
Nancy Heinrich, Office of Environmental Quality Control
Christopher Yuen, Hawaii County Planning Department



December 22, 2003

Rodney K. Haraga
Director of Transportation
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Subject: Hiluhilu Development (Palamanui)
Environmental Impact Statement

Dear Mr. Haraga:

Thank you for your letter of November 12, 2003. Regarding your specific comments we offer the following responses:

1. We acknowledge the concerns mentioned previously in comments Nos. 6 and 7 regarding airport/aviation concerns in your letter dated May 9, 2003. We are aware that potential overflights may occur. Also, when we are further along in our planning and design work, we will submit FAA form 7460-1 for their review of potential impacts to airport operations.
2. We also acknowledge your comments about the project entrance access to Queen Kaahumanu Highway from the entrance access to Keahole (Kona) International Airport. We have eliminated one of the proposed options and have provided more descriptions on the airport entrance option. We will continue to work closely with both your Airports and Highways Divisions on this project.
3. We look forward to the review by your highways Division and will address any concerns they may have about our project.

Thank you again for your comments and interest in our project. Please call me at 523-5866 if you have any further comments or questions.

Sincerely,

George I. Atta, AICP, CEI
Project Manager

CC: Guido Giacometti; Alan Okamoto, Roger Harris; Keith Niiya

In LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS DIVISION
Kona International Airport at Keahole
73-200 Kupipi Street
Kailua-Kona, Hawaii 96740-2645

KOUNEY K. HAKAGA
DIRECTOR

BRUCE Y. MATSUI
DEPUTY DIRECTOR

IN REPLY REFER TO:
AIR-H
03.0297

October 2, 2003

Mr. George Atta
Chief Community Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307

Dear Mr. Atta:

**Subject: Hiluhilu Development
Draft Environmental Impact Statement (EIS)**

Dear Mr. Atta:

The Department of Transportation, Airports Division, Hawaii District, has reviewed the Hiluhilu Development Draft Environmental Impact Statement. We offer the following comments on the proposed project:

1. In 1991, Kona International Airport at Keahole obtained a Special Management Area (SMA) Use Permit to expand airport facilities. As a condition of this permit, we prepared and implemented the "Keahole Airport Water Quality Monitoring Program." Groundwater monitoring wells were installed upslope of airport activity, within airport operational areas, and downslope of the airport boundary. The upslope well, between the airport and HELCO, was located to verify that we were not receiving contaminated groundwater from the one industrial activity above the airport. Likewise, we installed monitoring wells between airport operational areas and the Natural Energy Laboratory of Hawaii (NELHA) to verify that airport or tenant operations were not contaminating groundwater, and potentially impacting NELHA activities.

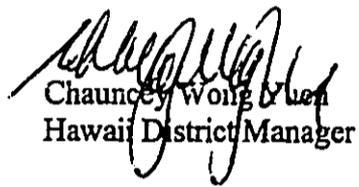
The Hiluhilu project proposal includes a golf course, medical facility, wastewater treatment plant, and stormwater injection wells. All of these developments have the potential to introduce contaminants to groundwater migrating beneath Kona International Airport. Installation of at least one groundwater monitoring well on the western edge of your property and implementation of a water quality monitoring program would serve to alleviate water quality concerns that your proposal might otherwise raise with respect to the airport.

2. The Draft EIS did not explore potential impacts to NELHA, through an evaluation of the groundwater/surface water relationship in this area.

3. Under the "Required Approvals and Permits" section, the Draft EIS did not include an Underground Injection Control (UIC) permit, which may be required by the Department of Health, Safe Drinking Water Branch for stormwater disposal.

We appreciate the opportunity to provide comments.

Very truly yours,


Chauncey Wong
Hawaii District Manager

CWY:ls:dh



December 17, 2003

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, A.P.
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Maki, AIA

George I. Atta, AICP
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Charles Y. Kaneshiro, AIA
Dean H. Kitamura
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Frank B. McCue
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Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA
Sharon Ching Williams, AIA

Mr. Chauncey Wong Yuen
State of Hawaii, Department of Transportation
Airports Division
Kona International Airport at Keahole
73-200 Kupipi Street
Kailua-Kona, HI 96740-2645

**Subject: Hiluhilu Development
Draft EIS**

Dear Mr. Yuen:

Thank you for the letter of October 2, 2003 regarding the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development.

We appreciate your review and comments regarding the residential, commercial, University development. The following are offered in response to your comments:

1. Regarding your concerns about the potential of introducing contaminants to the groundwater, Hiluhilu Development will develop a water quality monitoring program and install at least one groundwater monitoring well.
2. The Final EIS will discuss groundwater/surface water issues as it relates to any potential impacts to the Natural Energy Laboratory of Hawaii (NELHA).

The Underground Injection Control (UIC) permit will be listed in the Required Approvals and Permits section if one is required. The applicability of this requirement is currently under discussion with the Department of Health.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti; Roger Harris; Alan Okamoto

UNIVERSITY OF HAWAII
AT MANOA Environmental Center

October 7, 2003

RE: 0737

Guido Giacometti
Hiluhilu Development
P.O. Box 7121
Kamuela, Hawai'i 96748

Dear Mr. Giacometti:

Draft Environmental Impact Statement
Hiluhilu Development
North Kona, Hawai'i

The Hiluhilu Development LLC., proposes to develop a 725.2 acre vacant parcel in North Kona with residential units, a university village center and an 18-hole golf course. The site is located within the ahupua'a of Ka'u, near the Keahole International Airport, mauka of Queen Ka'ahumanu Highway and makai of the Makalei Estates. The property is privately owned by Hiluhilu Development LLC.

The applicant has partnered with the University of Hawai'i in developing a University Village to support the proposed West Hawai'i Campus, located adjacent to the subject property. The Hiluhilu Development seeks to provide a mixed density of residential units, residences for the University and the community, a mixture of classroom and teaching labs, a cultural center, commercial areas, conference facilities, facilities for community outreach and commercial training support, parking, athletic fields and medical wellness facilities.

Infrastructure facilities to support the development include internal circulation roadway network, a wastewater treatment and disposal system, a potable water supply and fire protection system, a non-potable water irrigation system and other utility systems.

The project involves the use of conservation district lands and will involve the reclassification of these conservation lands. The applicant will be seeking a Land Use Boundary Amendment to reclassify the existing Conservation and Agricultural District designations to an Urban District Designation.

2600 Dole Street, Krauss Annex 19, Honolulu, Hawai'i 96822-2313
Telephone: (808) 956-7381 • Facsimile: (808) 956-3980

An Equal Opportunity/Affirmative Action Institution

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Mr. Giacometti
Page 2

This review was conducted with the assistance of Mark Merlin, Biology and Dave Sims, Environmental Center.

General Comments

Given the extent and degree of landform alterations and infrastructure envisioned by this project, the descriptive detail included in this Draft EIS is seriously deficient. At best, the portrayals of elements of this proposed action are vague and generic. More commonly, as in the attention to questions of cumulative impacts or general socioeconomic analyses, the information provided is not substantive, or lacking altogether, or irrelevant as in the discussion of tsunami hazard in Section 6.2.2. Even recourse to detailed investigation of appendices produces conflicting and confusing information, as in the figures and tables of Appendix I regarding market characteristics of the region and extrapolated housing prices anticipated for the Hiluhilu residential units. With regard to the latter example, the preparers of the draft EIS promised that the ranges of market prices for the various housing units would be included in the statement (ref. 6/18/03 response letter to Mr. Anthony J. H. Ching.) In view of the importance of this information to any evaluation of the economic feasibility of this proposed action, these data should have been extensively discussed within the body of the draft EIS (ref. Section 11-200-19, Hawaii Administrative Rules: "*Care shall be taken to concentrate in important issues and to ensure that the statement remains an essentially self-contained document, capable of being understood by the reader without the need for undue cross-reference.*")

Project Nexus with UHCWH

We agree that there is a need for a West Hawai'i campus. However, although the draft EIS alludes frequently to the close integration of this project with this planned development, there is no clear discussion of how these projects are correlated. What is the current status of plans for this campus? How does the planned development intend to correspond to the planned construction schedule for the campus? Other than the inflated rationale, stretched at best, that this project will have a "stimulatory" secondary effect on the UHCWH, it's not clear exactly how the proposed development will meet either residential or recreational needs of a college community. Clearly, the concept of an integrated college/residential community is appealing, but without reasonable consideration of affordability, competing demand from retirement/second home markets, or detailed descriptions of accessibility to recreational amenities, no reliable evaluation of the potential success of this venture is feasible. Unfortunately, none of the required input data are coherently provided in this document.

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Recreation

The graphic representation of the Golf Course (Figure 3-1) is so sketchy that meaningful evaluation of the features and design of the course cannot be performed. A better golf course plan should be included.

The document states "The development of a golf course provides a recreational amenity for the residents in this area." Will this golf course be private or public? How many golf courses are presently in the North Kona area, and which of those offers wide public access? The document also states that, "The course will be periodically opened for general community use". Does this mean that the public will be invited as spectators or golfers? What will be the greens fees? Do the developers envision widespread use of the golf course by university students and faculty?

The golf course is close to the dry forest area, therefore the probability of encroachment by alien invasive species coming from the golf course landscaping (grasses and ornamentals) will be significant. These introduced plants could attract alien birds that could compete with the natural seed dispersal mechanisms within the dry forest. Will golf course runoff or irrigation overspray impinge on dry forest habitat?

Archaeology

The document further states that "The area is known to have numerous archaeological sites", and many appear to be within the golf course itself. The document states on page 5-5, "The primary users of the recreational facilities will be the project residents with some availability for the public as well." Will the sites within the golf course be accessible to the general public?

Socio-Cultural Advancement - Leisure

Section 226-23(b)(1), HRS, promotes, "a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently." Other than the golfing amenities offered primarily for residents, what other recreational opportunities are afforded by this project? What groups will benefit?

Section (b)(5) of the same chapter exhorts project proponents to "Ensure opportunities for everyone to use and enjoy Hawai'i's recreational resources." Again, are there specific plans other than a golf course, which will be "periodically" open to the public?

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On page 6-22, it is stated that, "Anticipated socio-economic effects [of the golf course] include the creation of new jobs and recreational amenities." How many jobs will it provide, and what will be the economic and social benefits to the wider community?

Water Conservation Measures

It is our understanding that the State Department of Health (DOH) requires specific plan approval for an R-1 water system, but no specifics are provided regarding compliance with DOH standards for separate supply infrastructure for the golf course effluent irrigation system. Indeed, the document is internally inconsistent, in that it refers on page 3-10 to use of recycled water for the golf course, but later the text asserts that irrigation for the golf course will "come from brackish wells drilled on site as originally proposed and permitted" (page 4-16.) If R-1 water is to be used, what will the sequence of development be? The golf course requires 1mgd during grow-in; total capacity of the Waste Water Treatment Plant (WWTP) at full build-out is .85mgd, but the WWTP facility will be built in 3 phases. Will installation of the golf course be delayed until full build-out of the residential project? If not, where will the irrigation water be obtained during the interval between golf course construction and full WWTP R-1 capacity achievement? Since UH is trying to be a model for sustainability, will reclaimed water (R1) be used for UH landscape irrigation as well as the golf course? Many of these ideas are vaguely referenced in this draft EIS, but lacking any specifics of design and layout, it is patently futile to attempt to provide a meaningful review of the proposed systems.

Open Space

The document states that smaller, passive community parks will be developed in the detailed planning of the site. The village will include recreational venues for residents, and 94 acres will be used for parking and open space. How much acreage will be used for each?

The document also states (page 5-3) "One of the purposes of the development is to offer golf and other recreational activities which involve the natural environment". Again, what other recreational activities will be offered?

Traffic

Section 6.2.14 describes long-term traffic considerations for this project, leading to recognition of significant deterioration of level of service ratings at major intersections. Mitigative measures to address the traffic concerns are itemized, but no effort is made either to assess quantitatively the cost of these improvements, or to assign the burden of these costs. Is it the project proponent's

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Mr. Giacometti
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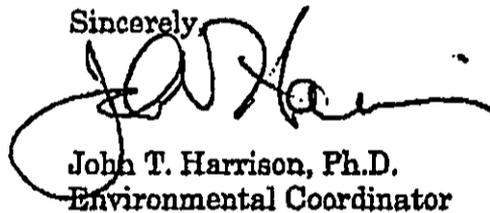
intent to assume some responsibility for these long-term infrastructure costs through payment of an impact fee, or will the burden fall on the county taxpayers as a whole?

Cumulative impacts

The draft EIS fails to describe development plans in a regional setting, allowing reasonable and necessary consideration of larger scale effects. Maps provided offer indications of adjacent development (e.g., Figure 4-2), but there's no discussion of population in the surrounding area or other existing or planned developments that will contribute to the growing needs for county police, fire, medical, educational, or public works services. (ref. Section 11-17(g) HAR: "...specific reference to related projects, public and private, existent or planned in the region shall be included for purposes of examining the possible cumulative impacts of such actions.")

Thank you for the opportunity to comment on this Draft EIS.

Sincerely,



John T. Harrison, Ph.D.
Environmental Coordinator

cc: OEQC
Anthony Ching, LUC
George Atta, Group 70
Mark Merlin
James Moncur
Dave Sims



GROUP 70
INTERNATIONAL

Francis S. Oda,
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James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimon, AIA
Sharon Ching Williams, AIA

December 22, 2003

Mr. John T. Harrison, Ph.D.
University of Hawaii
Environmental Center
2500 Dole Street
Krauss Annex 19
Honolulu, HI 96822-2313

**Subject: Hiluhilu Development
Draft EIS**

Dear Dr. Harrison:

Thank you for the letter of October 7, 2003 regarding the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development.

We appreciate your review and comments regarding the residential, commercial, University development. With reference to your letter, the following are offered in response to your comments:

General Comments: The following language on the market evaluation and economic feasibility of this project will be included in the Section 4.8 of the Final EIS: "Based upon the historical performance of the Hawaii County housing market, and upon the projected growth in new household formations, the demand for new residential construction can be segmented by tenure and type of unit. This will allow the market potentials for specific types of residential construction to be examined. The key components of residential construction demand during the next decade include new housing units to meet demands of new population growth and household formations, construction to meet the demands of the existing households in the area who desire to upgrade or downgrade into new ownership units, and construction to replace units lost through demolition and conversion.

THK projects new household formations will average 1,370 per year during the projection period 2002-2012 which will produce a demand for the construction of 1,451 dwelling units annually when adjusted for vacancies and demolitions. Single-family detached construction of 1,180 units annually during the next decade will account for approximately 81.4% of total construction in the Hawaii County area. Townhome and condominium construction will average 90 units annually, or 6.1% of the total market followed by rental apartment construction with 180 units annually, or 12.3% of total construction."

Letter to Mr. John T. Harrison, Ph.D.
 December 22, 2003
 Page 2 of 4

This project intends to meet a portion of this demand. Specifically, we are planning to supply to the market the following housing unit types at the following prices:

PRICING RECOMMENDATIONS FOR REAL ESTATE PRODUCTS AT UNIVERSITY VILLAGE		
	Recommended Average Prices	Average Unit Size
Residential Real Estate - Lots	Sale Price	(Sq. Ft.)
Ocean View Estate Lots	\$400,000	40,000
Ocean View Lots	\$300,000	15,000
Golf View Lots	\$200,000	12,000
Residential Real Estate - Built Product		
Patio Homes	\$350,000	1,800
Two Bedroom Condominiums	\$275,000	1,300
Three Bedroom Condominiums	\$350,000	1,600
Village Real Estate - Leased	Annual Lease Rate/SF	Space (SF)
UH Classroom and Lab Space	\$12	60,000
Village Retail	\$24	80,000
Village Real Estate - Residential Rentals	Land Value (\$/unit)	Units
Apartments	\$35,000	100 units
International Student Housing	\$25,000	75 units
University Village Inn	\$40,000	120 rooms
Senior Housing	\$30,000	80 units

Project Nexus with UHCWH: The current plan for UH Center West Hawaii envisions a Community College in the middle portion of the 500 acre parcel. The revised plans in this report have been presented to the Board of Regents and they have tentatively accepted the proposed changes. The construction schedule of the West Hawaii Campus is contingent on funding, which is uncertain at this time. However, Hiluhilu Development has committed to sizing its infrastructure to accommodate the development of the UHCWH on the adjacent parcel. Hiluhilu Development will bring the roadway, sewer water and drainline to the common property line with UH West Hawaii. The remaining construction schedule for UH will depend on when CIP funding is available.

Recreation: The Golf Course graphic, Figure 3-1, will be revised and enlarged in the Final EIS.

The golf course will be a semi private daily fee course open to the general public for designated periods. Fees have not yet been established but there will be a graduated scale depending on the golfer. Use by University faculty and students is being considered.

Portions of the golf course may be located adjacent to the dry forest area. Care will be taken to prevent the possible introduction of alien species into the dry forest. A forest maintenance and management plan will deal with such issues. Hiluhilu Development is working with the North Kona Dry Forest Working Group to develop this plan.

Letter to Mr. John T. Harrison, Ph.D.
December 22, 2003
Page 3 of 4

Archaeology: An archaeological/cultural program is being developed. Access to sites within the golf course will be allowed and managed according to this plan.

Socio-Cultural Advancement – Leisure: In addition to golf, five acres of active and five acres of passive parks will be developed on the site. Additionally, there is a pedestrian oriented village design with trails and bike paths throughout the site. Wellness facilities will also be developed in the project.

The following information will be added to Section 6.2.12, Population and Employment: This project will provide just over 1,000 permanent jobs by 2010, and approximately 1,750 jobs by 2017. The economic impact on Hawaii County includes; property taxes of \$4.9 million in 2010, increasing to \$7.3 million by 2017. Other County revenue benefits are \$2.3 million in 2010, increasing to \$3.9 million by 2017. Additional information will be provided in the revised Fiscal Impact Assessment and Market Feasibility Report for Palamanui.

The golf course will be built in Phase I. Brackish well water will be used to irrigate it in early years. As treated effluent becomes available, it will supplement a brackish irrigation system.

Water Conservation Measures: Golf course irrigation will begin with the brackish water source. Use of the wastewater effluent will occur as the development builds out. Regarding use of reclaimed water for UH Landscaping, this has not been decided but will be discussed with the University as we continue to plan our project together.

Open Space: Smaller, passive community parks will be designed in the various increments of the Palamanui Development. The exact acreage and location have not been determined as our plan is still in the conceptual phase. However, we will have a minimum of 5 acres of active parks with playfields and courts and 5 acres of passive park. Regarding the village site, the site plan acreage is still being finalized. The open space acreage includes the village green and spaces along the pedestrian main street that forms the spine of the village.

The Palamanui Development is not seeking to maximize density and open spaces will be generously included in all areas of the site. Active and passive parks will be developed. Again, exact acreage is not yet available but is being developed.

Trails, the dry land forest preserve and archaeological preserves and buffer areas will all be part of the open space/recreational amenities.

The golf course is obviously a major open space/recreational amenity of the project. It will be a combination public/private course and serve both the project and the region.

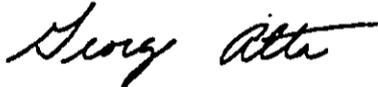
Letter to Mr. John T. Harrison, Ph.D.
December 22, 2003
Page 4 of 4

Traffic: While the TIAR recognizes the long-term impacts we have not assigned costs to the mitigation action needed to address these issues as they are the result of regional conditions and our projects only contribute to a portion of the overall impact. Hiluhilu Development will contribute its fair share of any regional improvements as needed and relevant to our project. Intersection improvements and improvements internal to our site that address traffic congestion will be constructed by Hiluhilu Development.

Cumulative Impacts: Section 4.10 will discuss public services and facilities impacted from the proposed development. Population of the surrounding area will also be discussed along with more graphics depicting the surrounding land use and zoning patterns. A discussion of other projects impacting the region will be included.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,



George Atta, AICP
Chief Community Planner

cc:

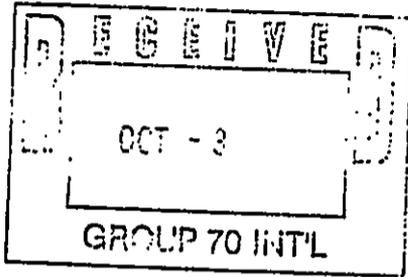
Guido Giacometti
Roger Harris
Alan Okamoto

PHONE (808) 594-1888

FAX (808) 594-1885



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813



HRD03/1086

September 29, 2003

George Atta
Group 70 International
925 Bethel St., Fifth Floor
Honolulu, HI 96813

RE: Hiluhilu Development, TMK 3-7-2-05:01

Dear Mr. Atta,

OHA is in receipt of the Draft Environmental Impact Statement for Hiluhilu Development. OHA has the following comments.

Connection to the University of Hawaii

The draft EIS is heavily dependent on the development of the University of Hawaii Campus on the adjoining property. Indeed, the rationale for building Hiluhilu is contingent on serving the proposed UH population. As the Draft EIS contains no assurances from UH that there is a partnership between it and Hiluhilu, or that the UH campus will be built within the Hiluhilu timeframe, we suggest that the connection to UH be made a secondary aspect of the proposed development. Doing so would allow us to evaluate Hiluhilu on its own merit.

Water

It is not clear from the analysis provided whether the existing wells have a sustainable yield that will provide enough water for the project. OHA suggests that you use the same units throughout your analysis.

Rampant development in the Kona area has stressed several wells near the shoreline. These wells are showing increasing levels of salinity. The water analysis should include an assessment of whether enough water will be available to this project, in light of other projects in the area that will also be tapping into the water source.

OHA also notes that the consultants for the Cultural Assessment raised concerns about the "greening of Kekaha." Instead they asked that landscaping for the project incorporate the fact that Kekaha is a dry area. OHA concurs with this suggestion. We suggest that the golf course be a more environmentally friendly dry course, and that landscaping use drought tolerant native plants, rather than exotic plants.

Flora and Fauna

The proposed project area is rich in native plants and has a very unique and rich lowland dry forest segment. OHA agrees with the mitigation measures to protect these resources. The measures include:

1. Preserve as much of the Lowland Dry Forest fragment as possible. We suggest that the actual amount to be preserved be included in the Final EIS. OHA suggests that no less than 95% of the fragment be preserved as this is an invaluable resource to Native Hawaiians, botanists and endangered species.
2. Preserve as many wiliwili stands as possible. OHA suggests that they all be incorporated into the landscaping.
3. Preserve all the maua, 'aiea, and uhiuhi trees. OHA agrees. These are all endangered species.
4. Select native species that occur naturally on the property as landscaping elements in areas that will be graded. We suggest that only naturally occurring native species be used in landscaping common areas of the project.

Cultural Historic and Archaeological Resources

The archaeologist recommends that 12 of the 83 sites, or 14% of the sites recorded be preserved. Given the richness of the sites in the project area, OHA suggests that more sites be preserved and incorporated into the design of the project. For example, some of the cultural informants had suggested that existing remnants of trails be preserved and re-connected and used as walking paths for the residents and university students. OHA notes that Site 14362, a Mauka/makai trail, will be preserved. We suggest that this trail also be linked and used.

OHA would also like some narrative explaining why a particular site was chosen over a different site with similar functions. For example, Site 14375, a habitation complex was not chosen for preservation, although other sites were. OHA would like some rationale explaining how sites to be preserved were chosen.

The cultural informants noted that the Kekaha area is noted for water collection caves, yet none are reported in the archaeological survey. Is there a reason no water caves were found?

Burials

We note that no burials were identified in this archaeological survey, although other surveys have identified burials in the area. Given the level of habitation in the area, it is highly likely that additional burials will be found should development be approved. We suggest that the project proponent develop a treatment plan in the event that inadvertent burials are found, and that the Hawaii Island Burial Council be allowed to review the plan.

Cultural Impact Assessment

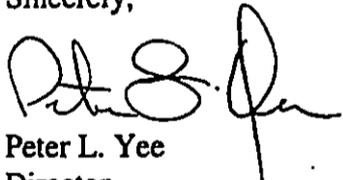
The Cultural Impact Assessment suggests that Kau is an area rich in history, but not currently accessed for cultural practices. However, as the cultural informants point out, the area is rich in medicinal and cultural plants. We concur with the cultural informants suggestions that access to the medicinal plants should be allowed, and that use of the lauhala grove by weavers should be encouraged.

Conclusion

OHA is not convinced that this is a viable project, given its dependence on the proposed University of Hawaii, West Hawaii campus. We are also concerned about the availability of water for this project. Finally, given the richness of archaeological sites, we suggest that more sites be preserved and integrated into the proposed development.

Thank you for this opportunity to comment. If you have further questions, please contact Pua Aiu at 594-1931 or e-mail her at paiu@oha.org.

Sincerely,



Peter L. Yee
Director

Nationhood and Native Rights



January 28, 2004

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASIO
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Mr. Peter L. Yee, Director
Nationhood and Native Rights
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Subject: Hiluhilu Development
Draft EIS

Déar Mr. Yee:

Thank you for the letter of September 29, 2003, regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development (Palamanui).

On October 22, we met with Pua Aiu of your office to discuss concerns raised in your review. The following highlights our discussions and reiterates our response to your comments:

Connection to the University of Hawaii

Yes, one must evaluate Palamanui on its own merit. While the UH connection is an important component of the Palamanui plan, Palamanui will be developed with or without the UH component. In this light, please review this environmental impact statement on Palamanui's individual merits. The Developer and the University of Hawaii have reached a letter of understanding to plan their properties with consideration of their mutual goals. Attached is a copy of this letter for your information. The Board of Regents has been presented with this plan.

Water

Mr. Stephen Bowles has prepared a report on groundwater resources, which concludes that sources are adequate to meet the water demand for the Palamanui project. Preliminary studies by R.M. Towill for the Department of Land and Natural Resources also come to similar conclusions. The deficiencies are in storage and transmission facilities. The two wells that have been drilled by Hiluhilu Development are obligated as part of a larger water delivery system. They do not meet the full development of the Palamanui project. They were never developed with the above purpose in mind. Incrementally they are part of the system that will ultimately serve the entire region.

George I. Atta, AICP
Paul P. Chorney, AIA
Philip T. Cuccia
Sutebin Halim
Roy A. Inouye, AIA, CSI
Stuart M. Jew, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kitamura
Katherine M. MacNeil, AIA
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Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
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Scott Tangonan
Wesley N. Ujimoto, AIA

Letter to Mr. Yee, OHA
January 28, 2004
Page 2 of 3

Regarding the greening of Kekaha we are in agreement with the spirit and direction of the comment. The golf course will use more xeriscape plants for landscaping and will highlight the beauty of the lava landscapes while creating the necessary tees and fairways. Native plants will be emphasized.

Flora and Fauna

Thank you for expressing your support of the mitigation measures we have adopted.

Cultural Historic and Archaeological Resources

We will strive to preserve more of the sites than those identified as significant by our project archaeologists. The exact number will depend on the final site plan as we fine-tune our plan. We will strive to preserve more trail segments and link them with modern pathways. Further study will be needed as we develop more detailed cultural preservation plans.

Some sites were chosen for preservation over other sites with similar features or functions because they were either in better condition, more intact, part of a larger cluster or better examples of a similar type or function.

Water Caves

Further investigation has confirmed that several caves appear to have been used for water collection. Where appropriate, we will preserve these sites and use some of them as interpretive features in the cultural management plan.

Burials

Thus far, we have found no burials on the site. Therefore we have not prepared any treatment plans. However, should we encounter burials, we will follow all laws that are applicable to the situation. At such time, the State Historic Preservation Office and the Hawaii Island Burial Council will be notified.

Cultural Impact Assessment

We agree with the recommendations from our consultant and will continue to work with our cultural advisory group and other local individuals and groups in preparing a plan to accommodate cultural practices and access to cultural materials. We also plan to expand the hala grove and other native plants on the site landscaping.

Conclusion

The viability of the project is not related to the development of the University of Hawaii Center West Hawaii (UHCWH). We feel the development of the UHCWH only makes a good viable project even better. A Feasibility Study for the project was conducted by Clive Jones evaluating population trends and market demand. The Study concludes that there is a strong market demand for the residential, medical and commercial services it will provide independent of the development of UHCWH.

Letter to Mr. Yee, OHA
January 28, 2004
Page 3 of 3

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process. Please call me at 523-5866 if there are any further questions.

Sincerely,
Group 70 International, Inc.



George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto

PHONE (808) 594-1888

FAX (808) 594-1885



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

HRD04-1086

April 7, 2004

George Atta, AICP
Chief Community Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307

**Subject: Final Environmental Assessment for the Proposed Palamanui Project
by Hiluhilu Development, LLC., TMK: (3)-7-2-05:01**

Dear Mr. Atta:

Thank for your letter of transmittal received by the Office of Hawaiian Affairs (OHA) dated March 30, 2004 regarding the Final Environmental Impact Statement (EIS) for the Proposed Palamanui Project by Hiluhilu Development, LLC. c/o Island Advisors, Inc. to support the University of Hawai'i's proposed West Hawai'i campus located on a vacant 725.2 acre parcel in the North Kona Judicial District, Island of Hawai'i, Ahupua'a of Kau, TMK: (3)-7-2-05:01. Your letter provides OHA with an opportunity to review and comment on the proposed project.

The proposed project involves reclassification of Conservation lands to Urban (260.7 acres are in the Conservation District, 464.5 acres are in the Agriculture District) by the State Land Use Commission. The State Land Use Commission at its April 1, 2004 meeting considered acceptance of Hiluhilu Development, LLC's Final EIS (Docket No. A03-744 Hiluhilu Development, LLC) for the proposed reclassification of lands (noted above). However, as a consequence of testimony that OHA staff provided, and because of a request by the Land Use Committee for further clarification on mitigation measures that the company would undertake for traffic flow, archeological and other potential problems on the proposed site, Hiluhilu Development, LLC withdrew its Final EIS.

Despite the Land Use Commission's acceptance of Hiluhilu Development, LLC's request to withdraw their Final EIS, OHA staff is concerned with several proposed

actions contained in the March 2004 EIS. OHA staff would like additional information and clarification on these items (outlined below) prior to receiving the revised document. Additionally, OHA staff has several recommendations regarding treating the proposed site as a cultural landscape in accordance with National Park Service (NPS) guidelines.

Burial Sites

The Final EIS for the proposed Palamanui project notes that "while there were no burials found during the archeological inventory survey, any inadvertent discovery made during the various preparation and construction phases of the proposed project, will follow proper protocols as required by the Hawai'i State Historic Preservation Division." However, as the Final EIS indicates, if any significant cultural deposits or human burials are encountered on the site, work will cease in this area and the State Historic Preservation Division will be contacted.

Archeological Sites

OHA staff would like a color coded, labeled (overlay map) prepared that shows: (1) each of the precontact temporary and permanent (lava tube, complex, enclosure, enclosure/shrine, C-shape, modified outcrop, platform, terrace) habitation, agricultural, ceremonial, potential/probable burial sites (i.e. structures that typically contain burials underneath a specific structure), trails, Cairns, Historic Road Beds, "Hunting Blind", *Pāhoehoe* excavation, walls, alignments, animal pens, petroglyphs, *Heiau* sites (83 in total, with exact SIHP # designation, location, and square footage as noted on Figure 5, and Table 3 of the Archeological Inventory Survey of the Kāū Development Area for the Final EIS for the Palamanui Project¹; (2) Draft Water Master Plan (proposed reservoirs and water lines, and existing water lines, et. al); (3) Draft Sewer Master Plan (trunk sewer line, et. al); (4) Kau Vegetation Reconnaissance – Locations of Rare and Endangered Plants²; and (5) Potential areas of concern for access to rare medicinal plants or other plants used by qualified la'au lapa'au practitioners and their students in relationship to all of the land use features of the proposed project (institutional, golf course, single-family and multi-family residential units, inn, commercial, sites requiring fill or grading and grubbing, water and sewer lines, roads, paths, electrical lines, et al.

Note: The map should include a complete inventory of archeological sites, proposed structures, et. al. and each site/structure should be drawn to scale (square footage/acreage).³ Please indicate sites that would be demolished or destroyed as a consequence of the proposed project. Chapter 4.0, Environmental Setting, Table 4.4, Site Significance and Recommended Treatments notes that the majority of SIHP

¹Final EIS for Palamanui, A Project by Hiluhilu Development, Volume 2, Appendices A-F, Appendix C, Archeological Inventory Survey.

²*Id.*, Volume 2, Appendices A-F, Appendix B, Biological Reconnaissance.

³Final EIS for Palamanui, A Project by Hiluhilu Development, Chapter 3.0, Project Description, Table 3-1, Land Uses for Palamanui should be included in the overlay map. Square footage breakdowns should be added for the single family residential (lot, units) houses and condos, multi unit residential, the golf course, and open space, parking and preservation. Additionally, water supply and sewer, roads, et. al. figures should be calculated and added to the final map.

sites are scheduled for Data recovery, or No further work. Please clarify your definition of Data recovery, No further work, Preservation (i.e. what actions will be taken, what is involved for each proposed treatment recommendation: photography, demolition, et. al).

Cultural Inventory Survey

The Cultural Impact Statement (CIS) that was prepared for Group 70 (project consultant) and Hiluhilu Development, LLC (project developer) by Maria E. Ka'imipono Orr for the Hiluhilu Application Process Project, Kaʻo Ahupua'a, Land of Kekaha, District of North Kona, Hawai'i Island, Hawai'i, notes "Although much effort was made to locate people who are knowledgeable about Kau and/or the Lands of Kekaha in general, there may be others who have even more pertinent knowledge specifically about Kau and the people who were traditional guardians of the land. Consideration should be given to them should they come forth as information about the land and development is made public." The project consultant for the CIS indicates that additional interviews and the formulation of an integrated natural/cultural resources management plan for the project and project area will be conducted.

It is not clear that the project developers have taken any steps to preserve and connect the remnants of trails (Trails of Kaʻo) for students, residents, visitors, and Native Hawaiian practitioners, or how access will be provided for landscaping and salvaging cultural plants,⁴ as requested in a September 29, 2003 letter from OHA.

OHA staff would like the project consultants to more thoroughly identify and address the effects of the proposed project on Hawai'i's culture and traditional and customary rights pursuant to Section 343-2, Hawai'i Revised Statutes, as amended by Act 50 Session Laws of Hawaii 2000.

OHA would like additional testimony from Native Hawaiians, kapunas and other cultural practitioners about cultural practices that have been undertaken in the proposed project area, the impact of the project on these practices, alternatives for the proposed action, and mitigation measures proposed.⁵ OHA would also like the formulation of a natural/cultural resources plan included in the revised Final EIS. The Cultural Impact Study included in the March 2004 EIS is an insufficient analysis of the cultural practices (prehabitation, et. al) conducted on the project site and archeological significance of the area.

Flora and Fauna

OHA issued a letter on September 23, 2003 noting "the proposed project area is rich in native plants and has a very unique and rich lowland dry forest segment." OHA's position on mitigation measures to protect flora and fauna resources has not

⁴ Has a plan been developed for allowing Native Hawaiians to remove timber from Kaʻo? How many trees would they be able to remove? Would tree removal be conducted in a sustainable fashion?

⁵ A more in-depth discussion of how early Hawaiians used caves (lava tubes) for water catchment should also be included.

changed. OHA would like to emphasize that preservation of Lowland Dry Forest should continue to be a priority on the part of the developers. Additional measures need to be taken to create larger protected areas that encompass archeological features and flora and fauna as a cohesive unit (not as scattered and fragmented units).

Water Supply

OHA staff would like clarification on how water supply issues will be resolved for the proposed project.

Golf

Appendix A, Civil Infrastructure, Section 3.4.2 Golf Course Irrigation⁶ notes that water for golf course irrigation will be provided by a system with two supply sources. The primary source will be water recycled from the on-site wastewater treatment plant (WWTP), and the secondary source will be 3 on-site non-potable wells. The WWTP capacity will be 850,000 gallons per day (gpd) scheduled to be completed in 2014, 10 years after the proposed project is initiated. Three private wells will be developed on site to produce nonpotable water for golf course irrigation. Hiluhilu Development, LLC needs 1,000,000 gpd for golf related (non-potable water) with a wastewater processing plant that will add 850,000 gpd 10 years from now.

Your proposed project indicates that 3 private wells with brackish water will be used for irrigation of the golf course, prior to the completion of the wastewater treatment plant. Please indicate which species of grass you are planning on using for the golf course, and clarify if the proposed species of grass that will be used for the golf course is highly salt tolerant.

Note: The golf course over a period of ten years (if the 800,000 gpd figure is used as a low estimate) would require 2,920,000,000 billion gallons of water. This figure would be higher if the 1,000,000 gpd figure is used initially, decreasing over the ten year period. Given the recent water shortages that have been identified by the Honolulu Board of Water Supply, and "the absence of water" that continues to be problematic for area farmers according to a March 2004, Draft Report, County of Hawai'i, Ka'u to South Kona Water Master Plan. According to Section 5.5.3 Agriculture Growth and Water Needs⁷ of the plan the regional agricultural water demands for the Ka'u to South Kona Water are 11 MGD. The study notes that "brackish water can be used for agricultural irrigation"⁸ since no potable water source well or distribution system is located in the region. The irrigation for this single proposed 18-hole golf course is a significant competing interest for water that agriculture uses in the same region.

Waiahole Decision

The importance of guaranteeing competing interests in water rights is emphasized in the Hawai'i Supreme Court's holding in the *Waiahole* decision (94 Haw. 97 (2000)).

⁶*Id.* Refer to Footnote 2, Appendix A, Civil Infrastructure.

⁷Draft Report, Ka'u to South Kona Water Master Plan County of Hawai'i, March 2004.

⁸*Id.*

In *Waiahole*, the court held that public uses, including the availability of sufficient water to maintain native stream flora and fauna and enough water to ensure Native Hawaiian traditional and customary practices are not threatened take higher precedence than private uses, such as golf courses or landscaping. This case is particularly important because the proposed project involves a golf course and is in a "characteristically dry and arid environment where the risks from flooding are virtually nonexistent."⁹

Hawai'i State Constitution, Article XI, Sections 3 and 7

Article XI, Section 3 of the Hawai'i State Constitution notes, "The State shall conserve and protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency and assure the availability of agriculturally suitable lands. The legislature shall provide standards and criteria to accomplish the foregoing." Article XI, Section 7 indicates, "The State has an obligation to protect, control and regulate the use of Hawaii's water resources for the benefit of its people." It is unclear from the March 2004 Final EIS that the agricultural and water interests of the residents of the County of Hawai'i are protected or controlled as a part of the proposed project.

Other Land Uses

Hiluhilu Development, LLC has 205,800 gpd available for the proposed project through their existing agreement with County Department of Water Supply in a Water Agreement dated June 15, 1999 between K-W Kau, LLC, K-W Kohanai, LLC and the Water Board (formerly known as the Water Commission) of the County of Hawai'i for a project that proposes to need 1,206,000 gpd (potable water) for land uses that are non-golf related. Two uncompleted wells (potable water) located on the north and south corners of the Mākālei Estates have a production capacity of 750,000 gpd, totaling 1,500,000 gpd, which if completed would cover the requirements for potable water sources for non-golf water sources.

Note: The projected 1.206 MGD (potable water) requirement for the Palamanui project is greater than the "approximately 1 MGD [Million Gallons per Day] of water" consumed within the project area (Ka'u to South Kona Water Master Plan) in 2000.¹⁰ The entire County of Hawai'i, according to the study, consumes 22.35 MGD (potable water) a year.¹¹ As a consequence, the proposed project, consumes a significant percentage of the County of Hawai'i's current water demands. By comparison the proposed 18-hole golf course uses up to 365 MGD (292 MGD if 800,000 gpd figure is used initially) in a year (non-potable water).

Supplemental Information

- Please provide a figure to supplement the Final EIS that indicates how much each land use (residential houses and condos, commercial, institutional, et. al.) will use in gpd broken down by sources (i.e. specific well, County water hook-up),

⁹ Final EIS for Palamanui, A Project by Hiluhilu Development, Chapter 4.0, Environmental Setting, 4.10 Drainage, Flood, and Tsunami Hazards.

¹⁰ *Id.*

¹¹ *Id.*

- type (potable versus non-potable)¹² and estimated and actual capacity (proposed non-portable brackish wells for golf course irrigation).
- Please provide documentation that enough water is actually available to support the golf course build out in each phase of development (1,000,000 gpd initially and 800,000 gpd subsequently) and that it will not rely exclusively on County of Hawai'i (County Department of Water Supply) water sources if the proposed non-potable brackish wells yield a volume of water that is negligible or lower than expected.
 - Additionally, please provide evidence that other sources of water are available for the other land uses (all other uses) proposed in this project.

Conclusion

Currently, it appears that the project will require 2,206,000 gpd (potable and non-potable water sources and that Hiluhilu Development, LLC has guaranteed access to only 205,800 gpd (potable water) through their Department of Water Supply agreement, leaving them to find sources for 2,000,200 gpd. Two uncompleted wells (potable water) located on the north and south corners of the Mākālei Estates have a potential production capacity of 750,000 gpd, totaling 1,500,000 gpd. If they are completed they would cover the requirements for potable water sources for non-golf water sources. However, it is unclear when these wells will be completed, leaving a deficit in the interim. Additionally, it is unclear if the 3 private non-potable brackish wells proposed to cover the 1,000,000 gpd requirement to irrigate the golf course, in the 10 year interim for the scheduled completion of the proposed 850,000 gpd wastewater treatment plant. Given the dry and arid environment where the project is proposed, the Constitutionally protected competing interests for water use in the area (County of Hawai'i residents, farmers), the large percentage of potable and non-potable water that project proposes to use (as a significant percentage of the total potable and non-potable water volume that the residents of the County of Hawai'i use as a whole), the rights that Native Hawaiian practitioners have to access water for traditional and customary practices, please categorically demonstrate that the project will not have a negative impact on each of these impacted uses/interests. Please also identify mitigation measures that the developer's of the proposed project will take to mitigate these potential access/use issues.¹³

¹² *Id.* Refer to Footnote 3, Chapter 3.0, Project Description, Table 3-6, Potable Water Demand, breaks down water requirements by potable water demand (gpd) for the Palamanui and U.H. West Hawai'i campus during Phases 1, 2 and 3. The Kau Wells 1 and 2, which were intended to have a sustainable yield of 1.6 million gpd (of which 81 EU's or 48,000 gpd are used by Hiluhilu Development, LLC for the Mākālei Estates subdivision, TMK: (3) 7-2-15: Multiple parcels, leaving Hiluhilu Development, LLC 262 EU's or 205,800 gpd under the succeeded rights of KW Kau (an agreement for water rights to Kau Wells 1 and 2)), will not provide enough potable water for the project, if the proposed development of two uncompleted wells (potable water) located on the north and south corners of the Mākālei Estates (which have anticipated production capacity of 750,000 gpd) is not completed. Note: EU figure calculations were explained by Finn McCall, Engineering, Department of Water Supply, County of Hawai'i.

¹³ A desalination plant is one example of a measure that could be taken to mitigate water use/access issues.

NPS Cultural Landscape

The National Park Service (NPS) has defined a cultural landscape as "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values."¹⁴ According to the NPS Preservation Brief #36, there are four general types of cultural landscapes, not mutually exclusive: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes. In this case, OHA staff recommends that they be treated as historic vernacular and ethnographic landscapes. These are defined by the NPS as follows:

- *Historic Vernacular Landscape*--a landscape that evolved through use by the people whose activities or occupancy shaped that landscape. Through social or cultural attitudes of an individual, family or a community, the landscape reflects the physical, biological, and cultural character of those everyday lives. Function plays a significant role in vernacular landscapes. They can be a single property such as a farm or a collection of properties such as a district of historic farms along a river valley. Examples include rural villages, industrial complexes, and agricultural landscapes.
- *Ethnographic Landscape*--a landscape containing a variety of natural and cultural resources that associated people define as heritage resources. Examples are contemporary settlements, religious sacred sites and massive geological structures. Small plant communities, animals, subsistence and ceremonial grounds are often components.¹⁵

A significant portion of the proposed Hiluhilu Development, LLC's proposed project affects an area that was shaped by precontact habitations and contains religious sacred sites and settlements.

National Historic Preservation Act, Section 106 Consultation

The University of Hawai'i (UH) receives \$43 million in federal grants each year, which triggers the 106 Consultation Process of the National Historic Preservation Act (NHPA). A NHPA, Section 106 Consultation (36 CFR Part 800, "Protection of Historic Properties") is required because of UH's involvement in the project. 106 Consultations are mandatory for all federal (or federally funded undertakings) affecting historic or traditional cultural properties. To initiate a Section 106 Consultation please send a written request for a consultation to:

¹⁴Charles A. Birnbaum, ASLA. "Protecting Cultural Landscapes: Planning Treatment and Management of Historic Landscapes". Preservation Brief #36, Technical Preservation Services. National Park Service. Washington, D.C. September, 1994.

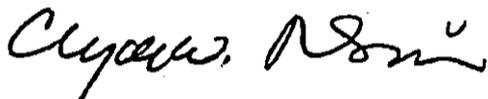
¹⁵*Id.*

Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, HI 96813
Attn: 106 Consultation

OHA staff doesn't believe that Hiluhilu Development, LLC or Group 70 have taken adequate steps to finalize its community outreach efforts (consultations with Native Hawaiian practitioners, or kupunas),¹⁶ or addressed all of its legal requirements to consult affected parties.

If you have questions or concerns please contact Matthew Myers, Policy Advocate at 594-1945 or matthewm@oha.org.

'O wau iho nō,



Clyde W. Nāmu'o
Administrator

¹⁶The Cultural Impact Statement (CIS) that was prepared for Group 70 (project consultant) and Hiluhilu Development, LLC (project developer) by Maria E. Ka'imipono Orr for the Hiluhilu Application Process Project, Kaō Ahupua'a, Land of Kekaha, District of North Kona, Hawai'i Island, Hawai'i



April 22, 2004

Francis S. Oda, Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
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Mr. Clyde W. Namu'o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

**Subject: Palamanui - A Hiluhilu Development Project
Environmental Impact Statement
TMK: (3)-7-2-05:01
Kau Ahupua'a, North Kona, Island of Hawai'i**

George I. Atta, AICP
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Donna D. Pennington
Christine M. Ruotola, AICP
James L. Sione, AIA
Scott Tarragonan
Wesley N. Ujimori, AIA

Dear Mr. Namu'o:

We received your letter dated April 7, 2004 regarding the proposed Palamanui project. Your staff has requested additional information and clarification on a number of items. We offer the following responses to these comments:

Burial Sites

While your staff has no questions regarding this matter, we would like to reiterate that there have been no findings of burials on the project site. Should we encounter burials, we will follow all laws that are applicable to the situation. At such time, the State Historic Preservation Office and the Hawaii Island Burial Council will be notified.

Archaeological Sites

The environmental impact statement provides figures and maps illustrating locations of known existing resources and proposed land use features.

In response to your request for a map with colored overlays which show the relationship of the archaeological and botanical features on the site to proposed urban improvements and related infrastructure, we have prepared the attached map.

At this point, the project is still at a conceptual level and details regarding specific building structures are not available. Nevertheless, as the plan continues to be refined, the siting of the proposed land uses will be considerate of resource constraints and opportunities such as those you have listed.

Letter to Mr. Namu'o, OHA Administrator
April 22, 2004
Page 2 of 9

Site Significance

The sites recorded in the Archaeological Inventory Survey for the project area are assessed for their significance based on criteria established and promoted by the DLNR-SHPD and contained in the draft Hawaii Administrative Rules Chapter 13, Section 13-284-6, dated 1998. Appendix C of the EIS report contains the full Archaeological Inventory Survey report. As clarified on page 245 of Appendix C, sites marked with a significance letter D, are found to have yielded or are likely to yield, information important for research on prehistory or history. A data recovery plan will be developed and submitted to DLNR-SHPD for review and approval for all sites recommended for data recovery. The data recovery plan will describe actions to be taken regarding the treatment of the site. Likewise, a Preservation Plan will be prepared and submitted for sites recommended for preservation. A Preservation Plan will further clarify and detail the methodology regarding preservation of the proposed archaeological features and sites. Where no further work is indicated for specific archaeological sites, this means that sufficient information has been gathered about this site and no further research and study is necessary.

Cultural Inventory Survey

Steps are being taken to preserve the remnants of trails in Palamanui. The trails have been identified, described, photographed and recorded by the archaeologist, ethnographers, entomologist and or biologist. Details of these reports are found in the appendices of the EIS. These reports also include location maps of these trails. This information has been used in the siting of proposed facilities. By and large the trails are preserved and proposed facilities are sited away from the trails. It is intended that new trails will be constructed to link and connect certain remnant trails you have described.

The Cultural Impact Statement has been prepared in accordance to Act 50 Session Laws of Hawaii 2000 regarding the effects the proposed project will have on Hawaii's culture and traditional and customary rights.

Hiluhilu Development LLC recognizes that Palamanui contains valuable cultural history and resources. The archaeological, botanical, and ethnological studies were conducted in efforts to better understand the rich history and resource uses throughout the project site and to preserve and perpetuate them in the development of the site plan.

A general assessment finds that the collection of this information already provides a beneficial impact of the proposed development by increasing public access and awareness to the rich history of this area. The information gathered through these studies will directly benefit the community through its inclusion in the development of potential educational and interpretive activities.

As noted in Section 8.4 of the Final EIS "Hiluhilu Development is aware that preservation and management of archaeological and cultural resources is an ongoing process. Specific

Letter to Mr. Namu'o, OHA Administrator

April 22, 2004

Page 3 of 9

management plans for the historic sites, cave environments and trails are being developed. Inventory surveys have been conducted. A cultural advisory committee for Palamanui has been formed and will continue to advise the Developer. Mitigation plans will be part of a larger integrated cultural and natural resources management plan (INCRMP) that is being developed with the project teams consultants and the advisory committee. Additionally, Hiluhilu Development will work with the State Historic Preservation Division (SHPD), other local kūpuna, interested government officials, area residents, and the administration and students of the UHCWH to ensure that the management plans are responsive to both public and agency concerns. The development of interpretive programs is being deferred until a later date to allow the students and staff of the UHCWH to become directly involved with those actions. A detailed inventory map will be utilized in the siting of buildings to avoid impacting significant sites. These sites will be available as an overlay map to be used in future site planning as the various increments of the project are developed."

Furthermore, "when the project is completed, there are several potential impacts to the sites that may occur in the future. These impacts include, but may not be limited to, damage to sites due to removal of surface rock from site features for landscaping efforts by homeowners; unintentional disturbance to site features by visitors, especially children; and intentional destruction of site features and deposits, by artifact collectors or vandals. Another impact is the continued deterioration of the sites due to natural processes, especially destructive vegetation growth within and on the architectural features of dry-laid stone. These issues can be addressed in the Covenants, Conditions and Restrictions (CC&Rs). Hiluhilu Development will work with the Homeowners' Association (HOA) to draft these CC&Rs to establish preservation/conservation easements for environmental, archaeological, and cultural areas on this property. "

More input from Native Hawaiians, kūpuna and cultural practitioners

Page 3 of your letter requests for additional testimony from Native Hawaiians, kūpuna and other cultural practitioners about cultural practices that have been undertaken in the proposed project area, the impact of the project on these practices, alternatives for the proposed action, and mitigation measures proposed.

Input from Native Hawaiians, kūpuna and other cultural practitioners about cultural practices that have been undertaken in the proposed project area will continue to be heard. A cultural committee which consists of Native Hawaiians, kūpuna and other cultural practitioners will be meeting with Hiluhilu Development twice a year to provide advice.

The most recent meeting of the cultural committee was held Saturday, April 17, 2004 at the project site: Attending were kūpuna Mr. George ("Uncle Kinoulou") Kahananui, Sr., Mr. Robert Punihaole, Mr. Karin Haleamau, Mr. Peter Park, Ms. Annie Coelho, Mrs. Ruby McDonald. From the University of Hawaii West Hawaii Center: Mrs. Sandra Sakaguchi

Letter to Mr. Namu'o, OHA Administrator
April 22, 2004
Page 4 of 9

Provost, Mrs. Kathy Damon and Mr. Kalani Flores of Hawaiian Studies. The Developers team included Mr. Guy Lam, Mr. Guido Giacometti, Mr. Roger Harris and Mrs. Maria Orr, Consultant.

"OHA would also like the formulation of a natural / cultural resources plan included in the revised Final EIS."

An Integrated Natural Cultural Resources Management Plan (INCRMP) will be implemented to protect and manage the important cultural places and practices in Palamanui. The INCRMP will include active participation by the developer and representatives from native Hawaiian kūpuna from the Kekaha region. Specifically, members of the Hewahewa and Mahi families whom have relationships with the project site have been and will be consulted.

It is not possible, however, to complete this plan on the requested time frame. One major reason is that the State Historic Preservation Officer and staff have to review, comment and approve such a plan after they have completed their review and acceptance of the Archaeological Inventory Survey and their review of the Cultural Impact Assessment. The Integrated management plan is a "work-in-progress." It is expected that the integrated natural cultural resource management plan will be in written and map form by Summer of 2004.

Mr. Namu'o, as you are aware, Hawaii's environmental review process was first enacted in 1974 to ensure that systematic consideration was given to the environmental consequences of actions proposed within our state. Its requirements are defined in Chapter 343, Hawaii Revised Statutes (HRS) and Title 11, Chapter 200, Hawaii Administrative Rules (HAR) of the Department of Health. The review process offers many opportunities to prevent environmental degradation and protect human communities through increased citizen involvement and informed decision-making.

The EIS for Palamanui was prepared with these intentions in mind. The EIS report contains three volumes of information regarding the project site, plans and strategies to mitigate adverse impacts the proposed project may have on the existing natural and culturally significant resources.

The development team has consulted with OHA specifically as recommended in your letter dated April 14, 2003, namely Ruby McDonald, Kohanaiki 'Ohana, and Hannah Springer.

As indicated earlier, Hiluhilu Development LLC and its archaeological and cultural consultants have solicited input from longtime residents of the project area and persons with knowledge and interest in the cultural and natural history of this area and the overall

Letter to Mr. Namu'o, OHA Administrator
April 22, 2004
Page 5 of 9

Kekaha region. A number of these "cultural consultants" have met with the Hiluhilu "team" on more than one occasion and have provided valuable input on local resources. (See Cultural Assessment, Appendix D). As stated earlier, most of them have agreed to meet on the site approximately twice a year over the future to provide on-going cultural input. This group is being called the Cultural Advisory Committee. An overlapping and similar committee has been in place for the past ten years, providing advice and input to the Hawaii Community College and West Hawaii Center planning efforts for the adjacent 500-acre UH owned site. The members of this committee are: Mr. Eli Nahulu, Mr. Wendell Davis, Mr. Angel Pilago, Ms. Leinaala Lightner, Ms. Hannah Springer, and Mr. Gene Leslie, Mr. Curtis Tyler and others.

Flora and Fauna

The lowland dry forest continues to be a priority feature of the proposed project site. OHA's stated concerns are being addressed. 1) The main concentration of endangered species (13 Halapepe trees) and valuable botanical resources lies in the upper left portion of the site. In conformity with recommendations from Dr. Patrick Hart, Botanical consultant and the North Kona Dryland Forest Working Group, Hiluhilu Development LLC has set aside a large (65+ acre) Preservation area that encompasses archaeological, cultural, flora and fauna resources in the regenerating elama forest. This preserve area will be linked to other valuable cultural sites in the project area by way of additional trails and preserves.

Native Hawaiians will be allowed to remove a limited amount of timber from this site for personal, non-commercial use. Interested persons should contact Hiluhilu Development LLC. Any such activity would be subject to conformity with the projects integrated natural cultural historic resources management plan. A more detailed discussion of how early Hawaiians used caves for water catchment will also be provided as the Integrated plan and interpretative materials are developed.

Water Supply

Your letter inquired as to the grass to be used for the golf course. The grass that is being considered is seashore paspalum which is a highly salt tolerant grass that has been used in golf courses.

Your letter referred to potential agricultural uses of water. While we understand the concerns about preserving critical resources for agriculture in Hawaii, this project should not detract from agriculture in Kona. The land in this area is not well suited to commercial agriculture. The soils are very poor and the cost of developing infrastructure such as irrigation systems and roads would make it prohibitively expensive to put the land into production. The County Plan and the Keāhole to Kailua Development Plan have recognized that these lands are better suited for urban expansion. By locating future urban

Letter to Mr. Namu'o, OHA Administrator
April 22, 2004
Page 6 of 9

expansion in this area, there should be less pressure to urbanize more potentially productive agricultural land elsewhere for residential use.

The groundwater study which is Appendix J of the EIS showed that there is sufficient groundwater flow in this area to support the project. Groundwater for other areas in North Kona and areas such as South Kona and the District of Ka'u would therefore not be impacted by this project.

Hawaii State Constitution, Article XI, Sections 3 and 7

The soil study conducted by Dr. Yusuf Tamimi concluded that given the marginal productivity of the land and the cost of grading, providing access and providing irrigation water, the project site was not suitable for commercial agriculture. Appendix H of the EIS contains the soils study.

Section 6.1.19 of the EIS states that the reclassification of the project site to Urban classification would accordingly not remove any land suited for agriculture. The soil classification for the project site is Land Study Bureau E. The project site has no cultivatable land. Rainfall in the upper area of the site is marginal and very inadequate for agriculture in the middle and lower areas of the site. The portion of the project below the 1,000 foot elevation level is not covered by the Agricultural Lands of Importance in the State of Hawaii (ALISH) study. Any remaining area at the mauka end of the project site which could fall within the ALISH classification would comprise only a very small area.

Other Land Uses

Your letter refers to the use of potable water in South Kona and the portion of the District of Ka'u that was included in the 2000 study. While potable water consumption in that area may be less than the projected potable water for Palamanui, the potable water for Palamanui will come from the groundwater in North Kona as shown in Appendix J. The groundwater needs for Palamanui will therefore not affect any potable water or brackish water sources that could be developed for other areas such as South Kona or the District of Ka'u.

Supplemental Information

Your letter requested the breakdown information on the potable and nonpotable water uses. Section 3.2.7.4 of the FEIS describes potable water use as: "432,000 gpd residential, 30,000 gpd village commercial, 159,000 gpd community commercial, 30,000 gpd medical, 150,000 gpd for flexible research and development, 405,000 gpd UH West Hawaii. All potable water will be supplied via the County DWS system. The DWS will determine which wells will supply which of their storage tanks.

Irrigation water will be supplied by water from the brackish wells which will be drilled on the upper portion of the project and by recycled water that will be provided from the private sewage treatment plant. The groundwater study in Appendix J assessed the

Letter to Mr. Namu'o, OHA Administrator
April 22, 2004
Page 7 of 9

sustainable yield of the groundwater sources to provide both potable water and the irrigation water and found the yield to be adequate.

Conclusion

Your letter also referred to potable and nonpotable water and sources. As you describe elsewhere in your letter, the nonpotable irrigation water will be provided by brackish water wells to be drilled on the project site. That irrigation water usage is expected to be 1,000,000 gpd initially until the golf course grows in. Once that occurs, the irrigation usage will be 800,000 gpd. However, the irrigation water will be supplemented by the recycled wastewater so the brackish water demand will drop as the development proceeds and more wastewater is generated. Because of this, the actual total groundwater pumpage at any given point will not be 2,206,000 gpd as your letter indicates.

With respect to the completion of the wells in Mākālei Estates, outfitting of Well No. 2 is virtually complete, so we expect that well to be dedicated to DWS in the near future. The outfitting of Well No. 1 will be part of the agreement which must be reached with DWS on obtaining additional water commitments for potable water. We do not wish to be unduly repetitious, but the DWS wells will be relied on only to supply potable water and not the irrigation water, so the total projected demand at full buildout is 1.2 mgd of potable water. The improvements that Hiluhilu will make to the potable water system will not only cover the outfitting of Well No. 2, but also upgrading and extending the water transmission main from Mākālei Estates and appropriate storage tanks and connection to the northern end of DWS's main line on Queen Ka'ahumanu Highway.

NPS Cultural Landscape

In response to your comments on page 7 of your letter regarding the National Park Services' work on protecting cultural landscapes we offer the following:

1. This 725-acre project site is not in a category where the federal preservation rules would apply.
2. We feel this project and the proposed integrated management plan are being developed in a manner consistent with the spirit of the objectives of preservation and management contained in the National Park Services publications.

National Historic Preservation Act, Section 106 Consultation

The project does not trigger Section 106 of the National Historic Preservation Act Consultation process. The University of Hawaii's involvement in the development of the proposed project is limited to a formal agreement to share a future vision for the use of parcels which lay adjacent to one another. The Palamanui project does not use federal funds which triggers Section 106 of the National Historic Preservation Act.

However, Hiluhilu Development has engaged in consultation in the development of this environmental impact statement. Consultation is the process of seeking, discussing, and

Letter to Mr. Namu'o, OHA Administrator
April 22, 2004
Page 8 of 9

considering the views of other participants. Chapter 11 of the EIS identifies the agencies, organizations and individuals contacted during the preparation of the EIS. Local area experts consulted in regards to natural and cultural resources, include Ruby McDonald, Kohanaiki 'Ohana, Hannah Springer and the North Kona Dryland Forest Working Group. An advisory committee has been established to provide future consultation needs regarding these matters. In addition, parties affected by the Land Use Commission petition have been informed of the project, including the State Attorney General, Time Warner Enter. Co., Verizon Hawaii, Inc., County Planning Commission, [K-W Kau, LLC., K-W Kohanaiki] and Mākālei Estates Community Association.

To date, the Office of Hawaiian Affairs has provided the following input on this project:

1. A written letter in response to the EIS Prep Notice dated April 14, 2003, signed by Peter Yee, Director of Nationhood and Native Rights Division with staff contact person as Jerry Norris.
2. A written letter in response to the Draft EIS dated September 14, 2003, signed by Peter Yee, Director of Nationhood and Native Rights Division with staff contact person as Pua Aiu.
3. In person meeting on October 22, 2003, with OHA staff Pua Aiu to discuss concerns raised in your letter dated September 14, 2003.
4. Testimony by OHA staff person Matthew Myers on April 1, 2004 at the Land Use Commission Hearing.
5. Site visit by OHA staff Matthew Myers.
6. A written letter dated April 7, 2004, signed by Administrator Clyde Namu'o with staff contact person as Matthew Myers.
7. Ongoing site visit and consultation by OHA Kona representative, Ruby McDonald.

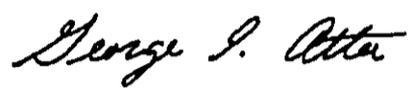
To date, the developer has responded to the Office of Hawaiian Affairs in the following manner:

1. Copy of the EIS Preparation Notice
 2. A written response letter to comments regarding EIS Preparation Notice dated April 14, 2004.
 3. Copy of the Draft EIS
 4. Personal meeting with Pua Aiu on October 22, 2003 to discuss concerns expressed in your letter dated September 14, 2003.
 5. A written response letter dated January 28, 2004 regarding concerns raised by Draft EIS.
 6. Copy of Final EIS
 7. Escorted site visit with OHA staff person Matthew Myers on April 8, 2004 by Roger Harris.
 8. Cultural advisory committee meeting on site with OHA Kona representative Ruby McDonald on April 17, 2004 with development team representatives.
- Mr. Namu'o, we appreciate the detailed attention your staff has given in his review of the environmental impact statement for the Palamanui project. We respectfully submit this

Letter to Mr. Namu'o, OHA Administrator
April 22, 2004
Page 9 of 9

letter to acknowledge your concerns and to provide a professional response as part of the environmental review process.

Sincerely,
Group 70 International, Inc.



George Atta, AICP
Chief Community Planner

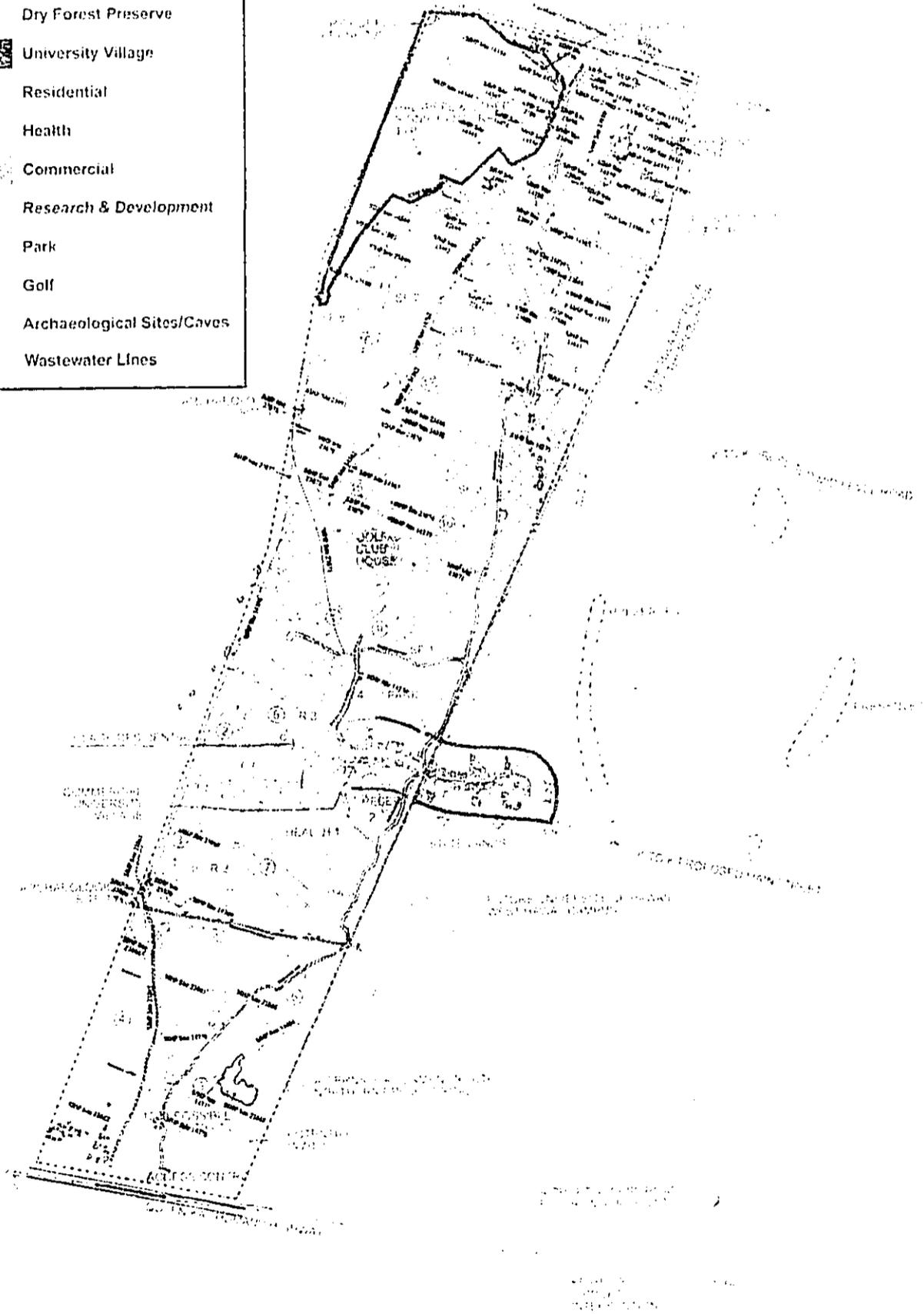
cc: Guido Giacometti
Roger Harris
Alan Okamoto
Peter Yee, OHA
Anthony Ching, LUC

Encl: Map

RECEIVED AS FOLLOWS

Legend

- Dry Forest Preserve
-  University Village
- Residential
- Health
-  Commercial
- Research & Development
- Park
- Golf
- Archaeological Sites/Caves
- Wastewater Lines



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United States Department of the Interior

U.S. GEOLOGICAL SURVEY
WATER RESOURCES
677 Ala Moana Blvd., Suite 415
Honolulu, HI 96813
Phone: (808) 587-2400/Fax: (808) 587-2401

May 3, 2004

Mr. Clyde W. Namu'o
State of Hawaii
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, HI 96813

Dear Mr. Namu'o:

In response to your request of April 20, 2004, we have reviewed "Appendix J: Groundwater Resources of Kau, North Kona, Hawaii: A Water Study for Hihuhilu Development, LLC" (Waimea Water Services, Inc., 2003) of the Final Environmental Impact Statement for Palamanui, a project by Hihuhilu Development. Waimea Water Services, Inc (2003) estimated the sustainable yield for the land of Kau, north Kona, based on a water-budget for an area on the western part of Hualalai Volcano. Sustainable yield was assumed to be about 60 percent of the estimated recharge for the selected area (Waimea Water Services, Inc., 2003, p. 5).

The estimated value of sustainable yield is difficult to evaluate for the following reasons.

1. No explanation is provided regarding the criteria used to delineate the recharge area. Why was the area shown in figures 2 and 3 selected? Furthermore, a map should be provided showing the delineated recharge area in relation to all existing and proposed wells (including all County and private wells near the project site).
2. No quantitative analysis is provided for the effects of pumping from the project wells on nearby ground-water areas. How will salinity in existing and proposed wells (including all County and private wells near the project site) be affected by pumping from the project wells?
3. No explanation is provided as to why sustainable yield was estimated to be about 60 percent of recharge (Waimea Water Services, Inc., 2003, p. 5). The State Water Resources Protection Plan estimates sustainable yield to be 44 percent of recharge in areas where the initial head is 4 to 10 feet. A recent assessment of the Hawi area of Hawaii used numerical models to estimate that about 40% of the recharge could be sustainably pumped (Oki, 2002, "Reassessment of ground-water recharge and simulated ground-water availability for the Hawi area of North Kohala, Hawaii", USGS Water-Resources Investigations Report 02-4006).
4. The water-budget analysis in Appendix II, "Hydrologic (water) Budget", is not documented adequately. Was the water budget computed on an annual or monthly

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Mr. Clyde W. Namu'o

Page 2

time scale? Was evapotranspiration or recharge allowed to occur first? Were median monthly rainfall maps used, and if so, why was median rainfall chosen over mean rainfall? What pan coefficients were used for the various vegetation types in the study area?

In addition, Appendix J does not address the following issues.

1. No quantitative analysis is provided to estimate the potential effects of allowing runoff to be "directed underground." Pesticides, metals, nutrients, and other organic compounds are among the contaminants that may reach the underlying ground-water body and eventually the coastal environment.
2. A quantitative analysis is needed to estimate the long-term effects of using brackish water to irrigate the golf course. Continued use of brackish irrigation water will lead to increased salinity in the underlying ground-water body.

I hope these comments are helpful. Please feel free to contact me at 587-2405 if you have any questions or concerns.

Sincerely,



Gordon Tribble
District Chief



July 13, 2004

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Soaman, AIA,
ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Mr. Gordon Tribble
District Chief
U.S. Geological Survey
Water Resources
677 Ala Moana Blvd., Suite 415
Honolulu, HI 96813

**Subject: Palamanui – A Hiluhilu Development Project
Environmental Impact Statement
TMK: 7-2-005:001**

George I. Atta, AICP
Paul P. Chorney, AIA
Philip T. Cuccia

Dear Mr. Tribble,

Pete C. Galvez, AIA
Sutobin Halim
Roy A. Inouye, AIA, CSI
Charles Y. Kaneshiro, AIA
Stephen H. Kelly, AICP
Katherine M. MacNeil, AIA

We received a copy of your letter dated May 3, 2004, to Mr. Clyde Namu'o of the Office of Hawaiian Affairs regarding "Appendix J: Groundwater Resources of Kau, North Kona, Hawai'i: A Water Study for Hiluhilu Development, LLC, prepared by Waimea Water Services, Inc.". The comments are addressed in order of the questions listed in your letter.

Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Donna D. Pennington
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA

1. The area selected for estimating recharge was determined by a field review of potentially contributing lands located southwest of the northwest rift zone of Hualalai. The area lies in what is apparently a water table basal lens (see Bauer, 2003, "A Study of the Ground-water Conditions in North and South Kona and South Kohala Districts" page 39, CWRM). All of the wells nearby, with the exception of HR #5 and 4358-01, tap this basal lens.

There is a map (Figure 1) in the WWS study, which shows the project area relative to the study area used to display the recharge estimates. The map on page six (of the WWS water study) shows the project in relation to the wells of record in the immediate vicinity of the project.

2. All of the pumping wells are located up gradient from the proposed brackish well and will not be affected. There are no pumping wells below elevation 1400' nearby. Due to distances, no impact on salinity is expected from the use of the wells on the Palamanui site.

Letter to Mr. Tribble, USGS, Water Resources
July 13, 2004
Page 2 of 3

The 60% estimate of recharge represents a reasonable estimate of sustainable yield is based on the fact that there are no significant soils in the selected recharge area and that there is no runoff. By comparison, the 40% estimate by the USGS for North Kohala is for an area of relatively deep soils and significant runoff. The original estimates in the State Water Resources Plan of 44% includes all areas.

Regardless, all three estimates are based on indirect and/or synthesized data. The most conservative (lowest) quantity used for this application is that based up on the water budget method. Any indirect method applied should be site specific and consider a range of estimates.

By far the most accurate method of determining sustainable yield is derived from actual response to pumping. The Commission on Water Resource Management has relied on actual pumping results in setting the sustainable yield for the Iao Aquifer on Maui.

At Kukio, just north of the northwest rift zone of Hualalai, the aquifer has been stress tested through heavy pumping and then allowed to recover. The evidence concludes that the salinity rises only temporarily and recovers rapidly when allowed an adequate rest period during the day. The same behavior, in unconfined basal aquifers, has also been documented at Wailea, Maui.

According to Jacob Baer (Technion-Israel Institute of Technology, Haifa, Israel) in an editorial entitled **Management of a Coastal Aquifer**. "In most cases, the objective function is to maximize sustainable yield of the aquifer (here defined to be the volume of water that can be withdrawn annually), subject to quality, economic, reliability level, legal and other constraints" form **GROUND WATER**, vol. 42, No. 3, May-June 2004.

The statement by Jacob Baer, an internationally recognized authority, clearly states that sustainable yield is a range of numbers and is based on a series of contributing factors.

- 4a. The water budget was computed monthly.
- 4b. The rainfall is based on twelve monthly median rainfall maps by Giambelluca and others, 1986, and converted to average annual rainfall.

Letter to Mr. Tribble, USGS, Water Resources
July 13, 2004
Page 3 of 3

- 4c. The evapotranspiration was calculated in both methods and averaged.
- 4d. The monthly pan values were based on a map created by Ekern and Change, 1985, by calculating each month's mean monthly to mean annual ration, based upon the Lalamilo pan.

Regarding Appendix J, the following comments are offered:

1. Any contaminants applied in the project area, now or upon development, potentially will reach the ground-water. Management practices mandated by the Department of Health and practiced by land managers are intended to minimize or mitigate such potential.
2. The area is underlain by a very brackish aquifer below elevation 1000' and the water from the brackish wells is expected to range between 700 and 1200 mg/L when pumped. The irrigation water will be applied to a basal lens quality of equal or higher salinity. It is doubtful the salinity will increase significantly until the regional pumpage exceeds the sustainable yield. This pumpage is likely to be mitigated with the application of recycled wastewater as planned.

We will forward you a copy of the Draft EIS for your review upon its completion.
We appreciate your participation in the environmental review process.

Sincerely,



George Atta, AICP
Chief Community Planner

cc: Clyde Namu'o
Guido Giacometti
Roger Harris
Alan Okamoto

UNIVERSITY OF HAWAII AT MĀNOA
Department of Civil and Environmental Engineering

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UNIVERSITY OF HAWAII
May 5, 2004

MAY 13 4 03 PM '04
STATE OF HAWAII
OFFICE OF THE ATTORNEY GENERAL

Mr. Clyde W. Namuo, Administrator
State of Hawaii Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, HI 96813

Dear Mr. Namuo:

This is in response to your letter of April 20, 2004, concerning the review of the report "Appendix J: Groundwater Resources of Kau, North Kona, Hawaii: A Water Study for Hiluhilu Development, LLC, prepared by Waimea Water Services, Inc".

Based on my review of this report, I would like to offer the following preliminary comments:

1. This report stated (Page 7) that "it appears that there are adequate water resources in the recharge sub area to support the planned project". However, this statement was made based on the sustainable yield, which was estimated by studying groundwater flow only, without considering water quality (or salinity).
2. According to the report (Page 2) freshwater heads at wells 4458-01 and 4458-02 (at an elevation of 1800') are about 7 feet, and the freshwater head at well 4360-01 (at an elevation of 680') is about 3.3 feet. It also indicated that salinity of Well 4360-01 is 580 mg/L in terms of chlorides (or about 1160 mg/L in terms of TDS). Apparently there is already a serious seawater intrusion problem in the project area; proposed pumping from the Wells 4458-01 and 4458-02 at a rate of 1.21 mgd would probably cause further seawater intrusion and make the salinity at wells 4458-01 and 4458-02 above the acceptable upper limit of 400 mg/L of TDS.
3. Reliable groundwater resources evaluation in the project area requires a careful study of groundwater flow and salinity transport.

It is my pleasure to be of service to the Office of Hawaiian Affairs. Please let me know if you have further questions regarding this review.

Aloha,



Clark C.K. Liu, Ph.D., P.E.; F.ASCE
Professor of Civil & Environmental Engineering and
Researcher of Water Resources Research Center

Cc. W. Chen – Dean of Engineering
J. Moncur – Director, Water Resources Research Center
R. Riggs – Chair – Civil and Environmental Engineering



July 13, 2004

Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
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Jeffrey H. Overton, AICP
Donna D. Pennington
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Mr. Clyde C.K. Liu
Professor of Civil & Environmental Engineering
Researcher of Water Resources Research Center
University of Hawai'i at Mānoa
2540 Dole Street
Holmes Hall 383
Honolulu, HI 96822-2382

**Subject: Palamanui – A Hiluhilu Development Project
Environmental Impact Statement
TMK: 7-2-005:001**

Dear Mr. Liu,

We received a copy of your letter dated May 5, 2004, to Mr. Clyde Namu'ō of the Office of Hawaiian Affairs regarding "Appendix J: Groundwater Resources of Kau, North Kona, Hawai'i: A Water Study for Hiluhilu Development, LLC, prepared by Waimea Water Services, Inc.". The comments are addressed in order of the questions listed in your letter.

1. & 2. Sustainable yield includes water quality as a matter of fact. Water quality beneath the Lands of Kau can best be estimated from samples taken from well #4360-01 at Kalaoa. In 1980, samples were collected from studies at NELHA which reported the Chlorides at 520 mg/L. Pumping tests of the well in 1968 showed that at a pumping rate of 300 gpm, the salinity would be expected to increase to about 750 mg/L chlorides.

The native salinity is the result of tidal mixing in the aquifer and, while there is a rise in salinity during pumping, stress and relax testing of the nearby Kukio wells shows a quick recovery of the salinity when pumps are stopped. (T.K. Duarte, 2002, Long Term management and discounting of groundwater resources with a case study of Kukio, Hawai'i.)

It is expected that the salinity in the brackish portion of the lens below elevation 100' will increase as a result of up gradient pumping from wells 4458-01 and 02 and possibly from the Huehue Ranch wells 1, 2, 3 and 4, although the latter wells are more remote.

Letter to Mr. Liu, University of Hawai'i at Mānoa
July 13, 2004
Page 2 of 2

As pumping begins, the actual sustainable yield will become established. Until the pumping is on-line, all sustainable yield estimates by indirect means must be considered as speculative estimates.

Wells 4458-01 and 02 will be owned and operated by the DWS. Their operations must comply with standards set forth by the Safe Drinking Water Act. The present secondary standard for TDS is 500 mg/L, and for total chlorides it is 250 mg/L and neither is mandatory.

3. We agree with comment number 3 and have used the available information in the preparation of the study. Until new data is available through pumping and/or wells, additional studies will not yield new data. It is unclear as to what is meant by "careful study".

We will forward you a copy of the Draft EIS for your review upon its completion. We appreciate your participation in the environmental review process.

Sincerely,



George Atta, AICP
Chief Community Planner

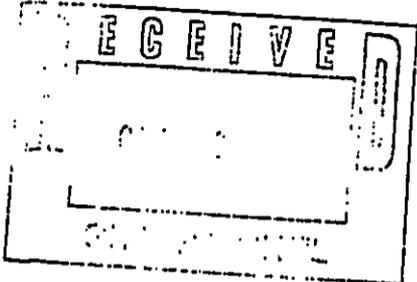
cc: Clyde Namu'o
Guido Giacometti
Roger Harris
Alan Okamoto

Harry Kim
Mayor



Christopher J. Yuen
Director

Roy R. Takemoto
Deputy Director



County of Hawaii
PLANNING DEPARTMENT
101 Paushi Street, Suite 3 • Hilo, Hawaii 96720-3043
(808) 961-8288 • Fax (808) 961-8742

September 29, 2003

Mr. George Atta
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307

Dear Mr. Atta:

Draft Environmental Impact Statement
Hiluhilu Development, LLC
TMK: 7-2-05:1

Thank you for the opportunity to review the above-captioned Draft Environmental Impact Statement (DEIS). The following are our comments on the DEIS:

1. Page 1-2:
 - a. Zoning: The property is also zoned Open. The Open zoning corresponds to the State Land Use Conservation District.
 - b. Keahole to Kailua Development Plan: The K to K Land Use Concept Map designates portions of the property as Residential and Village Center. The Plan does not specifically state that "golf courses could be developed in this area."
2. Page 1-7:

Other Alternatives: Reference is made to "Kawaihae to Kailua roadway..." Should it not be "Keahole" rather than "Kawaihae"?
3. Page 3-2:

Mr. George Atta
Group 70 International, Inc.
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Section 3.1.2: What is the difference between the 10 acres of general commercial space and the 20 acres for community commercial developments? The proposal is to provide 106 acres for commercial use. According to a recent calculation done by the Planning Department, there are approximately 867 acres of commercial zoned lands between Keahole and Keauhou. Was a separate study done to justify the need for an additional 100+ acres of commercial lands for this area? If not, will one be done?

Section 3.1.3: While it may be a good idea to have a linkage between this property and the adjacent University property, is there a firm commitment by the University to do a joint development? Further, according to Figure 3-2 on page 3-3, it appears that commercial development is also proposed on the University's land. Does this mean that additional commercial lands will be provided on the University's land?

4. Page 3-4:

Section 3.1.4: States that the golf course "will be periodically open for general commercial use." Please clarify.

Section 3.1.5: What is the University's development time frame, especially since efforts are being made to coordinate this development with the development of the University's land?

5. Page 3-11:

Section 3.2: Cite the development time frame for the project.

6. Page 4-15:

Section 4.6: "Kaiminani" Drive is one word.

7. Page 5-2:

This section appears to justify the proposed University rather than the Hiluhilu Development's project. This section needs to be re-written.

Mr. George Atta
Group 70 International, Inc.
Page 3
September 29, 2003

7. Page 5-4:

Please include a statement as to the significance of the Dry Forest Area. We support the concept on Fig. 3-1 of preserving most of the Dry Forest Area.

8. Page 5-8:

Section 5.3.2.2 (from previous page): Page 3-4 states that the golf course will be periodically opened to the public. This section states that the golf course "will enhance recreational opportunities for the public. Please explain how this golf course will be operated.

Section 5.4.1: States that the General Plan LUPAG Map designation is "Conservation and Agriculture." This is incorrect. The General Plan designation is "Urban Expansion Area." Therefore, no General Plan amendment is required. Page 5-11 (Land Use) states the correct General Plan designation.

9. Page 5-10:

Under Housing Discussion, states that a total of 950-1,000 residential units will be provided. This is inconsistent with the figures presented on page 2-2.

10. Page 5-16:

Section 5.4.5 (from previous page): The Kona Regional Plan designates the property as Agricultural 3-acre and not Alternate Urban Expansion. This is correctly stated on Page 1-2.

Section 5.4.6: The property is also zoned Open (O). The Open district corresponds with the current State Land Use Conservation District.

11. Page 6-22:

Change "Nansei" to "Nansay".

Mr. George Atta
Group 70 International, Inc.
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12. Page 7-1:

First Paragraph states that "a lack or (sic) recreational opportunities from the absence of the golf course." If the golf course will be private and only opened to the public occasionally, than realistically, there still would be a lack of recreational opportunities.

The discussion in this section appears to state that the proposed University development is contingent upon the development of this project and that no action on this development would prevent the University from relocating from its present leased facilities. This is not the case. With adequate funding, the University could proceed with its development.

13. Page 9-1:

Since portion of the golf course will be located in the area currently within the State Land Use Conservation District, an amendment to Use Permit No. 180 (golf course) needs to be filed with the County Planning Commission.

14. Appendix A (Civil Infrastructure):

Page 1, Section 1.0: Number of units does not correspond with page 3-2. Also, no hotel units are listed on page 3-2 of the DEIS. Are hotel units part of the proposal? The commercial acreage is also difference than that presented on page 3-2.

15. Appendix E (Traffic Impact Report)

Page 3: The figures are also different from those used in Appendix A and page 3-2 of the DEIS.

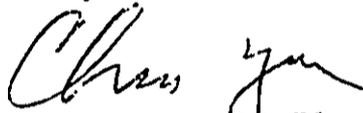
16. The conceptual plan describes a mauka-makai road connecting to Makalei Drive, which would create a connection between the Mamalahoa Highway (State Highway 190) and the Queen Kaahumanu Highway. The K-K Plan includes a connecting road in this area, called "University Drive." This is a highly desirable connection for traffic movement in the

Mr. George Atta
Group 70 International, Inc.
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area. Kaiminani Drive is far from ideal because of steepness and many driveways directly exiting onto the road. Unfortunately, Makalei Drive is also rather steep in areas and has direct driveway access. The EIS should discuss the alternative of a new road connecting from the mauka end of the Hiluhilu development through T.M.K. Nos. 7-2-05:08 and 7-2-06:09.

Again, thank you for the opportunity to provide comments on the DEIS. We look forward to receiving a copy of the Final EIS. Should you have any questions, please feel free to contact Norman Hayashi of this office at (808) 961-8288.

Sincerely,



CHRISTOPHER J. YUEN
Planning Director

NH/CJY:pak
P:\pwin60\norm\letters\atta hiluhilu deis 9-23-03

cc: Mr. Anthony Ching, Executive Director, State Land Use Commission
Office of Environmental Quality Control – Attn: Ms. Nancy Heinrich



December 17, 2003

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

**Subject: Hiluhilu Development
Draft EIS**

Dear Mr. Yuen:

Thank you for the letter of September 29, 2003, regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development. We have prepared the following responses to your comments:

1. Page 1-2. a. Corrections will be made to the zoning designation of the property site. A zoning map illustrating the Open designation of the project area will be included in the Final EIS.

Page 1-2. b. Thank you for clarifying that the Keahole to Kailua Development Plan does not specifically state, "golf courses could be developed in this area." This statement will be deleted from the Final EIS.

2. Page 1-7. The other alternative reference should be "Keahole" rather than "Kawaihae." Corrections will be made to the text in the Final EIS.

3. Page 3-2. Section 3.1.2. A separate study was done to justify the need for the proposed commercial uses for this project. The Market Evaluation of the Hiluhilu project and University Village Development Opportunities, conducted by Knowledge Based Consulting Group, in association with THK Associates, are provided as Appendix I of the Draft EIS report. This report includes a market analysis for the residential and commercial land uses at the Hiluhilu Development site. Space requirements for retail, office and research and development space were estimated based on projected annual job growth in the trade area. The 10-acre general commercial refers to commercial space that serves a larger regional market and the 20-acre community commercial acreage targets services that meet the needs of the Palamanui community and the adjacent University of Hawaii West Hawaii Campus.

Section 3.1.3. A Memorandum of Understanding (MOU) regarding the proposed development linkages does exist between the University of Hawaii and the Hiluhilu Development. A copy of the MOU is attached.

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Wesley N. Ujimori, AIA
Sharon Ching Williams, AIA

Letter to Mr. Yuen, HI County Planning Dept.
December 17, 2003

Page 2 of 4

Commercial activities are envisioned to be located side by side with educational facilities. Hiluhilu Development will provide access and infrastructure that is sized to accommodate the University's West Hawaii Campus. The Village Plan is conceptual in nature and the exact mix of uses is an ongoing process. We are not planning the University site and the Site Plan is illustrative rather than descriptive. Our development program remains flexible and the University is a partner in our planning. Uses will tend to be mixed with commercial, institutional, recreational and instructional spaces. We are assuming that much of the architecture will design flexible spaces that can be converted as markets change and the University of Hawaii gradually develops on its side of the boundary.

4. Page 3-4. Section 3.1.4. The proposed golf course will be a private course open to the public. While details are pending, in general it will be a private daily fee course open to the public during designated times. Members would have certain privileges at the clubhouse and for reservation times on the golf course. Public play would be allowed on designated days and times outside of the reserved time for members. Some times may be made available to programs such as the UH golf program or junior golf groups.

Page 3.1.5. We recommend questions regarding the development of the University be answered by the University. Nevertheless, we can say that efforts are being made to work jointly with the University to develop the proposed project. However, the should state explicitly that the proposed development at Hiluhilu will be developed regardless of the University's ability to develop their parcel. It is our understanding that the Hiluhilu project will be developed simultaneously with the development of the University of Hawaii, Phase I. The availability of Hiluhilu improvements should provide the University with access to infrastructure and facilities from which to develop their vision.

5. Page 3-11. Section 3.2 The project is envisioned to be developed over a ten-year period, in three phases, beginning in the year 2005. A detailed absorption schedule is attached and will be included in the Final EIS.
6. Page 4-15. Section 4.6. Corrections to the spelling of Kaiminani drive will be made in the Final EIS.
7. Page 5-2. The discussion regarding the project's relation to Section 226-10 of the Hawaii State Plan will be re-written in the Final EIS as follows: The proposed Hiluhilu development supports research, education and training programs as evident in its joint development efforts with the University of Hawaii. In addition, the Hiluhilu project will provide more economic development benefits to Hawaii. Also, the text will expand on

the Palamanui Development to show that it is viable in its own and the University connection simply makes a good project better.

Page 5-4. The Dry Forest Area located to the north of the jeep road has never experience a major disturbance and a 65-75 acre portion of this area may rank amongst the most intact Lowland Dry Forest fragments remaining on the island. Thirteen individuals of the federally endangered Halapepe grow in the Lowland Dry Forest portion of the property. The preservation of this Dry Forest Area supports the Hawaii State Plan Section 226-12 (b), which aims to promote the preservation of significant natural resources.

8. Page 5-8. Section 5.3.2.2. The golf course will be operated as a daily fee semi-private course. See response #4 of this letter.

Page 5-8. Section 5.4.1 Thank you for clarification on the General Plan designation as Urban Expansion Area. Corrections will be made to the Final EIS.

9. Page 5-10. The project program has been finalized. The latest numbers are 845 residential units, 80 elderly housing units and a 120 room University Inn.
10. Page 5-16. Section 5.4.5. Thank you for clarifying the correct designation of the property by the Kona Regional Plan. Corrections will be made in the Final EIS.

Section 5.4.6. We understand that the property is zoned open. Changes will be made to this section in the Final EIS.

11. Page 6-22. Nansei will be changed to Nansay.
12. Page 7-1. The golf course will be a daily fee, semi-private course that will be open to the public. Therefore this will create an expansion of recreational resources. The number of days and hours it will be open to the public is still undetermined but it will be enough to function as an additional facility the public can look to for golf experiences.

The discussion about the development of the University was never meant to imply that the University would not develop without the Palamanui project. The text will be revised to more clearly describe the independent nature of the two parties and the two projects.

13. Page 9-1. Since a portion of the golf course is proposed to be located in an area currently within the State Land Use Conservation District, an

Letter to Mr. Yuen, HI County Planning Dept.
December 17, 2003
Page 4 of 4

amendment to Use Permit No. 180 (golf course) will be filed with the County Planning Commission.

14. The number of units will be clarified and made consistent through the text. There is a University Inn proposed for the project that includes 120 rooms. The discrepancies in commercial acreage will also be corrected in the FEIS.
15. These discrepancies have been corrected and are included in the FEIS.
16. Our TIAR describes two options for access from Queen Kaahumanu Highway to our Palamanui Project and the University of Hawaii West Hawaii site. The roads will be designed to county/state standards for collector streets. Preliminary agreements with the Department of Hawaiian Homelands (DHHL) and the Department of Land and Natural Resources (DLNR) to plan an access route through their lands to create the University Drive/Palamanui Access Road have been mentioned. Conceptual plans of these routes and intersections are underway.

We recognize the steepness of Makalei Drive and feel that this connection is an interim situation. Ideally an alternate route with a gentler slope should be developed but such a route will require adjustments that involve other landowners and alternate financing methods. This issue remains one of the unsolved issues of the FEIS.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,



George Atta, AICP
Chief Community Planner

cc: Guido Giacometti, Roger Harris, Alan Okamoto

SECTION V

RECOMMENDED DEVELOPMENT PROGRAM, PRICING AND REAL ESTATE ABSORPTION PATTERNS AT PALAMA NUI

The proposed program for the Palama Nui/ University Village project reflects the market findings of THK and KBCG as well as project team planning inputs, discussions with University of Hawaii (UH) administrators, and a review of the UH Master Plan for the West Hawaii Campus. It is subject to revision and confirmation based upon further discussions with UH; County and Community input; land planning, urban design, engineering and traffic considerations; market refinement from ongoing consumer research; financial analysis; construction considerations; and numerous other influences.

Product Mix

There is strong market support for a mix of moderately priced residential products within the University Village community setting at Palama Nui. Based upon the analysis of market support and the strong consumer response to the University Village concept, the development program includes a mix of lots, patio homes, townhomes, apartments, and senior housing targeted to meet the needs of local and seasonal residents. The village commercial program includes classroom and cultural facilities, village shopping, and a University related inn/conference center along with student and faculty housing. Outside the village center, space has been allocated for a medical campus, research and development activities, and future community commercial.

Palama Nui Development Plan

Development Program for Palama Nui			
	Total Units	Acres	Average Price @
Single Family Residential (lots)			
Ocean View Estates	70	70.0	\$400,000
Ocean View Lots	200	100.0	\$300,000
Golf View Lots	120	46.2	\$200,000
Single Family Residential (built)			
Patio Homes	30	16.0	\$350,000
Two Bedroom Condos	60	7.5	\$275,000
Three Bedroom Condos	60	7.5	\$350,000
Subtotal Single Family	590	247.2	
Multi Unit Residential			
Apartments	100	8.0	
International Student Housing	75	5.0	
Senior Housing	80	5.0	
Subtotal Multi Family	255	18.0	
Total Residential	845	265.2	
Commercial (acres)			
University Leases		6.0	60,000
Village Commercial		8.0	80,000
University Village Inn	120	8.0	60,000
Medical, R&D, & Community Commercial			
Medical Campus		10.0	120,000
R&D		50.0	220,000
Community Commercial		20.0	200,000
Golf Course			
		180.0	
Open Space, Parking, & Preservation			
		177.8	
Subtotal Commercial & Other	120	459.8	
TOTAL UNITS AND ACREAGE	965	725.0	

There are a total of 845 units in the residential program including 590 for sale single family and attached residential units as well as 255 multi family rentals including apartments, student housing, and senior housing. In addition to the residences, the Palama Nui plan includes a 120 unit University Inn. Thus the total housing count (residences plus transient) is 965 units.

Pricing

The proposed unit prices for the Palama Nui development cover a wide range reflecting market ability to pay and the perceived value of the community amenities inherent in the University Village concept.

PRICING RECOMMENDATIONS FOR REAL ESTATE AT PALAMA NUI

PRICING RECOMMENDATIONS FOR REAL ESTATE PRODUCTS AT UNIVERSITY VILLAGE

	Recommended Average Prices	Average Unit Size	Recommended Price
	<u>Sale Price</u>	<u>(Sq. Ft.)</u>	<u>Per Square Foot</u>
Residential Real Estate - Lots			
Ocean View Estate Lots	\$400,000	40,000	\$10
Ocean View Lots	\$300,000	15,000	\$20
Golf View Lots	\$200,000	12,000	\$17
Residential Real Estate - Built Product			
Patio Homes	\$350,000	1,800	\$194
Two Bedroom Condominiums	\$275,000	1,300	\$212
Three Bedroom Condominiums	\$350,000	1,600	\$219
Village Real Estate - Leased			
	<u>Annual Lease Rate/SF</u>	<u>Space (SF)</u>	
UH Classroom and Lab Space	\$12	60,000	
Village Retail	\$24	80,000	
Village Real Estate - Residential Rentals			
	<u>Land Value (\$/unit)</u>	<u>Units</u>	
Apartments	\$35,000	100 units	
International Student Housing	\$25,000	75 units	
University Village Inn	\$40,000	120 rooms	
Senior Housing	\$30,000	80 units	
Other Commercial			
	<u>Land Value (\$/acre)</u>	<u>Acres</u>	
Medical Campus	\$400,000	10	
R&D	\$250,000	50	
Community Commercial	\$700,000	20	
Golf Memberships			
Entrance Fee	Per Member \$30,000		

Source: Knowledge Based Consulting Group

Affordable housing will be accommodated within a mix of rental and for sale units.

REAL ESTATE ABSORPTION

The project is anticipated to commence construction in 2004 with basic infrastructure and golf course development. Initial real estate sales will begin in 2005 and include ocean view estates and ocean view lots along or near the golf course. Housing and commercial space in the University Village will be available for occupancy one to two years later. Total buildout of the residential and commercial areas is expected in 2014.

SUMMARY ABSORPTION SCHEDULE AT PALAMA NUI

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Single Family Detached												
Ocean View Estates												
Annual			30	20	20							
Cumulative			30	50	70	70	70	70	70	70	70	70
Ocean View Lots												
Annual			20	30	35	35	40	40				
Cumulative			20	50	85	120	160	200	200	200	200	200
Golf View Lots												
Annual				20	20	20	30	30				
Cumulative				20	40	60	90	120	120	120	120	120
Patio Homes												
Annual				20	20	20	20					
Cumulative				20	40	60	80	80	80	80	80	80
Multi Family												
Two Bedroom Condos												
Annual					10	20	10	20				
Cumulative					10	30	40	60	60	60	60	60
Three Bedroom Condos												
Annual					10	20	10	20				
Cumulative					10	30	40	60	60	60	60	60
Subtotal For Sale Housing												
Annual			50	90	115	115	110	110	0	0	0	0
Cumulative			50	140	255	370	480	590	590	590	590	590
Rentals												
Apartments												
Annual					100							
Cumulative					100	100	100	100	100	100	100	100
International Student Housing												
Annual					75							
Cumulative					75	75	75	75	75	75	75	75
Senior Housing												
Annual						80						
Cumulative						80	80	80	80	80	80	80
Total Residential Units												
Seasonal			5	14	43	63	74	85	85	85	85	85
Permanent			45	126	387	563	662	761	761	761	761	761
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Commercial Absorption Schedule												
University Village Inn												
Annual					60,000							
Cumulative					60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000
University Leases												
Annual				30,000				30,000				
Cumulative				30,000	30,000	30,000	30,000	60,000	60,000	60,000	60,000	60,000
Village Commercial												
Annual				20,000		20,000		40,000				
Cumulative				20,000	20,000	40,000	40,000	80,000	80,000	80,000	80,000	80,000
Medical Campus												
Annual				30,000	30,000	30,000	30,000					
Cumulative				30,000	60,000	90,000	120,000	120,000	120,000	120,000	120,000	120,000
R&D												
Annual					10,000	10,000	15,000	20,000	30,000	40,000	45,000	50,000
Cumulative					10,000	20,000	35,000	55,000	85,000	125,000	170,000	220,000
Community Commercial												
Annual							25,000	25,000	25,000	35,000	40,000	50,000
Cumulative							25,000	50,000	75,000	110,000	150,000	200,000
Golf Course												
Annual			0.5	0.5								
Cumulative			0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0



December 22, 2003

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

**Subject: Hiluhilu Development
Draft EIS – Additional responses**

Dear Mr. Yuen:

We would like to provide you with a clarification to our response letter dated December 17, 2003 in response to your letter of September 29, 2003, regarding your review of the Draft EIS for the Hiluhilu Development.

The project program has been finalized. The latest numbers are 845 residential units, including 590 single-family homes, 100 apartments, 75 student-housing units, and 80 units for seniors. Commercial area of 14 acres in University Village (includes 6 acres reserved for classrooms and teaching labs) plus a 120 room University Inn, 10 acre medical campus, 20 acre community commercial center, and 50 acre low density research and development facility. Attached are summary materials for your understanding. These materials are excerpts from the Marketing and Fiscal Impact Analysis report that will be provided in the Appendix of the Final EIS for the Palamanui Hiluhilu Development project:

1. Summary of Economic and Fiscal Impacts for Palamanui Project
2. Development Program for Palamanui - Table 1 Hiluhilu Development Plan
3. Real Estate Absorption. Summary Absorption Schedule at Palamanui

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

Enclosures:

cc: Guido Giacometti, Roger Harris, Alan Okamoto

Summary of Economic and Fiscal Impacts for Palamanui Project

Program

Population of 2,800 persons in 845 housing units, including 590 single family homes, 100 apartments, 75 student housing units, and 80 units for seniors

Commercial Area of 14 acres in University Village (includes 6 acres reserved for classrooms and teaching labs) plus a 120 room University Inn, 10 acre medical campus, 20 acre community commercial center, and 50 acre low density research and development facility.

Investment

The Palama Nui project will have a project cost/ investment of just over \$300 million over a ten-year period (2004 to 2014).

Impact on Hawaii County

The County of Hawaii would receive annual property taxes of \$6.4 million at project buildout (2014) as well as other county revenue of \$3.4 million. This total revenue of \$9.8 million will be offset by county service costs of \$4.6 million.

The net annual County surplus is \$2.7 million in 2010, increasing to \$5.3 million by 2014. The cumulative surplus from project opening to final buildout is \$25.5 million

Impact on State of Hawaii

The State of Hawaii would receive an estimated \$3.9 million per year in excise tax, income tax, and other revenues from residents at buildout (2014). This will be supplemented by \$4.7 million in revenue from excise taxes on commercial operations, including retail sales, hotel taxes, and taxes on commercial rents.

Total State revenues at buildout will be approximately \$8.6 million, while service costs are estimated at \$5.2 million. This provides for a surplus of \$3.4 million in 2014, and a cumulative surplus of \$17.7 million over the buildout period.

During construction, the State will receive additional excise tax, revenue on finished development and building materials, conveyance taxes, and income taxes on construction wages and businesses. These will amount to \$13.9 million over the buildout period.

Employment

Palama Nui will create 1,000 permanent jobs by 2010 and around 1,850 jobs by 2014.

Construction at Palamanui will support nearly 2,600 person years of employment or about 250 jobs per year over the life of the project.

Indirect Impact

Including indirect impacts of construction expenditures recirculating in the Hawaii economy, construction of the Palama Nui project will generate:

- \$370 million in economic output
- 3,638 jobs
- \$172 million in household income

TABLE 1
Hilu Hilu Development Plan

Development Program for Palama Nui

	Total Units	Acres	Average Price @
<u>Single Family Residential (lots)</u>			
Ocean View Estates	70	70.0	\$400,000
Ocean View Lots	200	100.0	\$300,000
Golf View Lots	120	46.2	\$200,000
<u>Single Family Residential (built)</u>			
Patio Homes	80	16.0	\$350,000
Two Bedroom Condos	60	7.5	\$275,000
Three Bedroom Condos	60	7.5	\$350,000
Subtotal Single Family	590	247.2	
<u>Multi Unit Residential</u>			
Apartments	100	8.0	
International Student Housing	75	5.0	
Senior Housing	80	5.0	
Subtotal Multi Family	255	18.0	
Total Residential	845	265.2	
<u>Commercial (acres)</u>			
University Leases		6.0	60,000
Village Commercial		8.0	80,000
University Village Inn	120	8.0	60,000
<u>Medical, R&D, & Community Commercial</u>			
Medical Campus		10.0	120,000
R&D		50.0	220,000
Community Commercial		20.0	200,000
<u>Golf Course</u>			
		180.0	
<u>Open Space, Parking, & Preservation</u>			
		177.8	
Subtotal Commercial & Other	120	459.8	
TOTAL UNITS AND ACREAGE	965	725.0	

REAL ESTATE ABSORPTION

The project is anticipated to commence construction in 2004 with basic infrastructure and golf course development. Initial real estate sales will begin in 2005 and include ocean view estates and ocean view lots along or near the golf course. Housing and commercial space in the University Village will be available for occupancy one to two years later. Total buildout of the residential and commercial areas is expected in 2014.

SUMMARY ABSORPTION SCHEDULE AT PALAMA NUI

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Single Family Detached												
Ocean View Estates												
Annual			30	20	20							
Cumulative			30	50	70	70	70	70	70	70	70	70
Ocean View Lots												
Annual			20	30	35	35	40	40				
Cumulative			20	50	85	120	160	200	200	200	200	200
Golf View Lots												
Annual				20	20	20	30	30				
Cumulative				20	40	60	90	120	120	120	120	120
Patio Homes												
Annual				20	20	20	20					
Cumulative				20	40	60	80	80	80	80	80	80
Multi Family												
Two Bedroom Condos												
Annual					10	20	10	20				
Cumulative					10	30	40	60	60	60	60	60
Three Bedroom Condos												
Annual					10	20	10	20				
Cumulative					10	30	40	60	60	60	60	60
Subtotal For Sale Housing												
Annual			50	90	115	115	110	110	0	0	0	0
Cumulative			50	140	255	370	480	590	590	590	590	590
Rentals												
Apartments												
Annual					100							
Cumulative					100	100	100	100	100	100	100	100
International Student Housing												
Annual					75							
Cumulative					75	75	75	75	75	75	75	75
Senior Housing												
Annual						80						
Cumulative						80	80	80	80	80	80	80
Total Residential Units			50	140	430	625	735	845	845	845	845	845
Seasonal			5	14	43	63	74	85	85	85	85	85
Permanent			45	126	387	563	662	761	761	761	761	761
Commercial Absorption Schedule												
University Village Inn												
Annual					60,000							
Cumulative					60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000
University Leases												
Annual				30,000				30,000				
Cumulative				30,000	30,000	30,000	30,000	60,000	60,000	60,000	60,000	60,000
Village Commercial												
Annual				20,000		20,000		40,000				
Cumulative				20,000	20,000	40,000	40,000	80,000	80,000	80,000	80,000	80,000
Medical Campus												
Annual				30,000	30,000	30,000	30,000					
Cumulative				30,000	60,000	90,000	120,000	120,000	120,000	120,000	120,000	120,000
R&D												
Annual					10,000	10,000	15,000	20,000	30,000	40,000	45,000	50,000
Cumulative					10,000	20,000	35,000	55,000	85,000	125,000	170,000	220,000
Community Commercial												
Annual							25,000	25,000	25,000	35,000	40,000	50,000
Cumulative							25,000	50,000	75,000	110,000	150,000	200,000
Golf Course												
Annual			0.5	0.5								
Cumulative			0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Harry Kim
Mayor



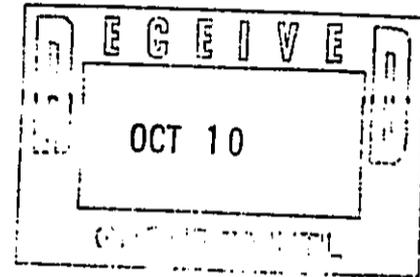
Patricia G. Engelhard
Director

Pamela N. Mizuno
Deputy Director

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

October 7, 2003

George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawai'i 96813-4307



Subject: Hiluhilu Development
Tax Map Key: (3) 7-2-05:001
Draft Environmental Impact Statement

Dear Mr. Atta:

Thank you for allowing us the opportunity to review and provide comment on the Draft Environmental Impact Statement "EIS" for the proposed Hiluhilu Development.

With respect to the relatively large scale of the proposed mixed use development and the projected "strong market support" and anticipated "higher than average capture rates" for residential development in this location it is our recommendation that sincere consideration be afforded to provide sufficient amenities to service the active recreational needs of the prospective residents of this development in the form of private or public parks.

We acknowledge that development of the golf course is a commendable goal and would be a valuable amenity to the community and its residents once it is constructed and in operation. However, the master plan states "the (golf) course will be periodically open for general community use" without definitively stating quantity of public use in either rounds per year or some other useful criteria by which public recreational opportunities can be measured. The master plan also states that athletic fields will be provided that are directly related to the University. Once again, the direct benefit to prospective residents are suspect because use of said fields will be under the auspices of the University with preference given, understandably, to University interests as opposed to general public recreational needs.

At present it is our position that the North Kona district has an insufficient amount of public parks for active recreation relative to both its population and the quantity and diversity of recreational activities demanded by its residents. The proposed considerable increase in dwelling units without the provision of recreational parks with amenities such as athletic fields (soccer, baseball, softball, etc.) and courts (basketball, tennis, volleyball, etc.), children's

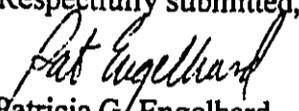
Group 70 International, Inc.
October 7, 2003
Page 2

playgrounds, community centers, and similar public facilities geared for use by residential communities is of concern to this department. Also, the location of this development is relatively distant from the current population center of the district where a majority of the public recreational facilities are located. The nearest County Park is Kailua Park located at the old Kona Airport site which is a considerable distance away geographically and when considering the overburdened traffic conditions experienced on that commuting route currently. Further, Kailua Park and its facilities are heavily utilized with more demands on it from the general public and special interest athletic organizations than it will ever be able to accommodate.

In keeping with the ideal of developing a "unique urban node for North Kona", we strongly feel that the developer should expend greater efforts in developing facilities for the active recreational needs of the future occupants of the proposed residential component and for the users of the proposed commercial components of the Hiluhilu Development.

Please call our Staff Planner, James Komata at 961-8531 should you have any questions or wish to discuss our concerns in more detail.

Respectfully submitted,


Patricia G. Engelhard
Director

cc: Anthony Ching, Executive Director, Hawai'i State Land Use Commission
Nancy Heinrich, Office of Environmental Quality Control



Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihel, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

George I. Alta, AICP
Paul P. Chomey, AIA
Wendy Lee Cook, AIA, CD
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Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimoto, AIA
Sharon Ching Williams, AIA

December 17, 2003

Ms. Patricia Engelhard
County of Hawaii
Department of Parks & Recreation
101 Pauahi Street, Suite 6
Hilo, HI 96720

**Subject: Hiluhilu Development
Draft EIS**

Dear Ms. Engelhard:

Thank you for the letter of October 7, 2003 regarding the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development.

We appreciate your review and comments regarding the residential, commercial, University development. The following are offered in response to your comments:

The proposed development will have sufficient amenities such as parks and other recreational facilities to serve the future residents in the area. We acknowledge that there is an insufficient amount of public parks in this region. This will be taken into consideration while designing the residential/recreational elements for this project.

The golf course will be daily-fee and semi-private use, with opportunities for public play. At this time the degree of public play has not been determined, but we clearly see local residents as a major component of our service market. More details will be provided as we develop the program.

Athletic fields will be part of the University of Hawaii, West Hawaii campus and therefore will not be accessible to the public at all times. However, like the golf course, the fields will have limited public use opportunities similar to the use of athletic fields at other UH campuses. Prior experiences indicate that there are large periods when the general public has access to UH facilities.

We acknowledge your comment about the shortage of recreational amenities in North Kona. Our project will increase the supply of recreational amenities with the new golf course and scattered community parks throughout the site. The University Village will have both indoor and outdoor recreational facilities. We also note that the State of Hawaii is placing great effort at developing Kekaha State Park makai of the Highway. Facilities related to the UH will also have recreational amenities.

The Palamanui project will have at least 5 acres of passive and 5 acres of active recreational parks in the development. The active parks have not been designed but are likely to include basketball, volleyball and tennis. Other recreational amenities such as a recreation center with pools will be considered. Bicycle and jogging paths will also be developed into the project to encourage a healthy and active lifestyle. We do plan to make Palamanui a complete community with the necessary complement of recreational resources.

Letter to Ms. Patricia Engelhard
December 17, 2003
Page 2 of 2

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,



George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

Harry Kim
Mayor



Bruce C. McClure
Director

Dixie Kaetsu
Managing Director

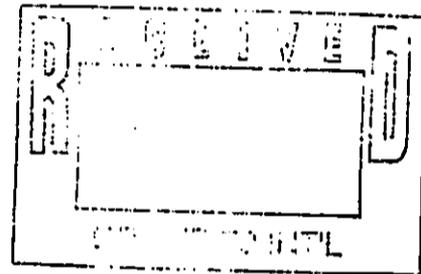
County of Hawaii
DEPARTMENT OF PUBLIC WORKS
101 Pauahi Street, Suite 7 · Hilo, Hawaii 96720-4224
(808) 961-8321 · Fax (808) 961-8630

Ronald K. Takahashi
Deputy Director

October 7, 2003

George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813

Subject: Draft Environmental Impact Statement
Applicant: Hiluhilu Development, LLC
TMK: 7-2-005:001



We reviewed the subject DEIS and have the following comments:

Proposed Roadway System

The proposed roadway network is not consistent with the Keahole to Kailua (K to K) Development Plan, dated April 1991. The K to K Plan provides for two mauka-makai roads and three north-south roads within the study area. Ordinance 93-45 calls for the construction and dedication of those facilities to the County within the portion of the property covered under that ordinance. Ordinance 93-45 should be included in the background information. We defer to the Planning Director regarding conformance to the K to K Plan and Ordinance 93-45, with the following observations and recommendations:

University Drive in the K to K plan, is to be an 80-foot wide mauka-makai collector mentioned as the **Airport Access Road Alternative** in the subject Traffic Impact Report. It would serve as the major collector until north-south collectors are constructed. The study should address the adequacy of the proposed 60-foot width through the study area given that the north-south collectors have no set timetable for completion. In addition, Makalei Drive which is proposed in this study to provide the mauka connection to Mamalahoa Highway through Makalei Subdivision, was not designed and constructed to County collector street standards. It is constructed to local street standards with a 50-foot wide right-of-way, maximum grades of 18 percent and with individual parcels taking direct access from it. Construction of University Drive from the airport access connection at Queen Kaahumanu Highway to Mamalahoa Highway, bypassing Makalei Drive is recommended.

Kau Drive is described in the K to K plan as "a secondary mauka makai road that links the Lands of Kau directly with the Queen Kaahumanu Highway corridor." Kau Drive is the Northern Project Access Road in the subject Traffic Impact Report. As recommended above, the

DPW Comments to Hiluhilu DEIS
October 7, 2003
p. 2 of 2

Airport Access Road Alternative is the preferred makai connection.

Mid Level Road (Ane Keohokalole Hwy), a 120-foot wide arterial relocated to the previous alignment of Waena Drive, is not provided through the study area as recommended in the K to K Plan.

Kealakaa Street Extension, an 80-foot wide collector is not provided through the study area as recommended in the K to K Plan.

Main Street (Kamanu street Extension) is properly depicted in Figure 3.1, however in the K to K Plan, an 80-foot minimum right-of-way is proposed for collector facilities rather than the 60-foot width proposed in the subject study.

The Traffic impact report assumes that the mitigative measures will be implemented. The project should be conditioned on the completion of those improvements.

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



Galen M. Kuba, Division Chief
Engineering Division

KE

c: Hawaii State Land Use Commission
Office of Environmental Quality Control
Planning Director
ENG-HILO/KONA



December 17, 2003

Francis S. Oda, Arch. D., AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hiteshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Mr. Galen M. Kuba
County of Hawaii
Department of Public Works
101 Pauahi Street, Suite 7
Hilo, HI 96720-4224

**Subject: Hiluhilu Development
Draft EIS**

George I. Atta, AICP
Paul P. Chomey, AIA
Wendy Lee Cook, AIA, CDT
Philip T. Cuccia
Sutobin Halim
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Charles Y. Kaneshiro, AIA
Dean H. Kitamura
Katherine M. MacNeil, AIA
Frank B. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ructala, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimori, AIA
Sharon Ching Williams, AIA

Dear Mr. Kuba:

Thank you for the letter of October 7, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development. The following are offered in response to your comments:

- 1. Proposed Roadway System:** We acknowledge your comments about the differences between our proposed site plan and the 1991 K to K Plan. We also understand that the Planning Director will make the call to determine conformity. The FEIS will include more discussion on the Keahole to Kailua (K to K) Development Plan and the Palamanui project's consistency with this plan. Key components of Ordinance 93-45 will be implemented into the Section 3.1.5.1, Roadway System. With the revisions, we feel our plans address the intent and purpose of the K to K Plan. We will work with your department in addressing any additional concerns.
- 2. University Drive:** The Airport Access Road Alternative, which will be termed the preferred alternative in the FEIS, is to be an 80-foot wide mauka-makai collector. This road alignment will run through DLNR and DHHL lands and the applicant will acquire letters of support from these agencies in order for this alignment to be implemented. The ultimate completion of the University Drive Roadway is still undetermined. A linkage with the Makalei Road will ultimately be made but we do not view this as the permanent mauka-makai link and we are aware that it was not designed or constructed to serve this purpose. The ultimate, completed alignment of the collector road remains unresolved.
- 3. Kau Drive:** The proposal for Kau Drive may or may not connect to Queen Kaahumanu Highway as depicted in the K to K Development Plan. It will be an internal collector road if all approvals for the University Drive alignment are received. Otherwise, it will be the main access.

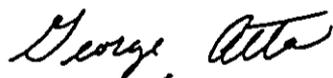
Letter to Mr. Galen M. Kuba
December 17, 2003
Page 2 of 2

4. **Mid Level Road & Kealakaa Street Extension:** We acknowledge that we have not shown the Ane Keohokalole Highway extension on our plans. We have shown three mid-level road extensions through our property. We note that the Northern edge of our property is the limit of proposed urbanization for the County in its General Plan. It was our hope that two mid-level roadways would suffice and that given the uncertainties of future urban expansion to the North and timeline for implementation that a reassignment of future trip generators could be made to redirect it to the two other mid-level roadways. Having three mid-level corridors segments our project in a way that detracts from the atmosphere, character and circulation that we desire and we believe there are other ways to address the projected future traffic issues.
5. **Kealakoa Street Extension:** We have revised our site plan to include this extension. Our project site plan had shown a road reserve for this purpose along the mauka edge with the Makalei Estates Subdivision.
6. **Main Street:** This alignment will be consistent with the proposed designs in the K to K Development Plan.

The mitigation measures identified in our TIAR that are within the Palamanui (Hiluhilu) project site will be implemented. Those requiring State DOT and adjacent landowner approval are currently under discussion. Hiluhilu Development will pay its fair share of required transportation improvements.

Your comments and this response letter will be included in the FEIS. We appreciate your participation in the environmental review process.

Sincerely,



George Atta, AICP
Chief Community Planner

cc: Guido Giacometti
Roger Harris
Alan Okamoto



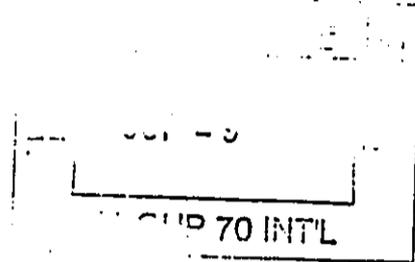
DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

345 KEKUANAOA STREET, SUITE 20 • HILO, HAWAII 96720

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

October 3, 2003

Mr. George Atta, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307



**DRAFT ENVIRONMENTAL IMPACT STATEMENT
HILUHILU DEVELOPMENT
TAX MAP KEY 7-2-005:001**

We have reviewed the subject document and our comments are as follows.

A Water Agreement dated June 15, 1999, between K-W Kau, LLC, K-W Kohanaiki, LLC. and the Water Board (formerly known as the Water Commission) of the County of Hawaii provides the Hiluhilu Development 343 equivalent units (EU) of water at a maximum of 600 gallons per day per EU. Forty-one (41) units have already been granted for Phases I and II of the Hiluhilu Development. The remaining units of water will become available upon completion of Section 3.1, "Conditions to Kau Commitment," as stated in the Water Agreement. Improvements in Section 3.1 include outfitting Well No. 2 with a 700 GPM submersible pump and providing the necessary appurtenances, a transmission line between Well No. 2 and Department of Water Supply's (DWS) Puukala Tank, and a water system on the property built to DWS's Standards.

Should there be any questions, please contact Ms. Shari Komata of our Water Resources and Planning Branch at 961-8070.

Sincerely yours,


Milton D. Pavao, P.E.
Manager

SHK:sco

copy - Mr. Anthony Ching, Hawaii State Land Use Commission
Ms. Nancy Heinrich, Office of Environmental Quality Control

... Water brings progress...



October 21, 2003

Francis S. Oda, AIA, AICP
Norman G.Y. Hong, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
Roy H. Nihei, AIA, CSI
James I. Nishimoto, AIA
Ralph E. Portmore, AICP
Stephen H. Yuen, AIA
Linda C. Miki, AIA

Mr. Milton D. Pavao, Manager
County of Hawaii
Department of Water Supply
345 Kekuaaoa St., Suite 20
Hilo, HI 96720

Subject: **Hiluhilu Development
Draft EIS**

George I. Atta, AICP
Paul P. Chorney, AIA
Wendy Lee Cook, AIA, CDT
Philip T. Cuccia
Sutobin Halim
Jeremy C. Hsu, AIA
Roy A. Inouye, AIA, CSI
Stuart M. Jow, AIA
Charles Y. Kaneshiro, AIA
Dean H. Kitamura
Katherine M. MacNeil, AIA
Frank S. McCue
Kyle K. Nakamoto
Kathryn A. Nam
Jeffrey H. Overton, AICP
Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimoto, AIA
Sharon Ching Williams, AIA

Dear Mr. Pavao,

Thank you for the letter of October 3, 2003 regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development. The following are offered in response to your comments:

1. This project will be in compliance with the Water Agreement dated June 15, 1999.
2. The following improvements will also be implemented for this project: a) outfitting Well No. 2 with a 700 GPM submersible pump and providing necessary appurtenances; b) a transmission line between Well No. 2 and the DWS Puukala Tank; and c) a water system on the property built to DWS's standards.

Your comments and this response letter will be included in the FEIS. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti
Roger Harris
Alan Okamoto

FILE

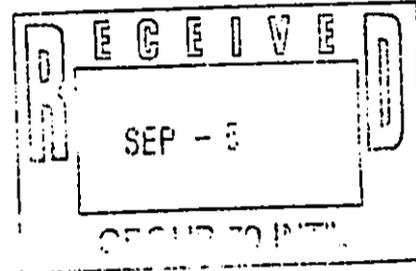


Hawai'i Forest Industry Association

P. O. Box 10216
Hilo, Hawai'i 96721
hawaii-forest.org

(808) 933-9411
Fax (808) 933-9140
hawaii.forest@verizon.net

3 September 2003



Guido Giacometti, Principal
Hiluhilu Development, LLC
c/o Island Advisors, Inc.
P.O. Box 7121
Kamuela, HI 96743

Dear Mr. Giacometti,

On behalf of the North Kona Dryland Forest Working Group, I am writing to express our appreciation of Hiluhilu Development's invitation to visit the native dryland forest at Palama Nui, which we did on August 26 with the assistance of Mr. Roger Harris.

The Working Group is pleased to note your interest in preserving and restoring the remaining forest, and would like to take this opportunity to convey our intention to submit a proposal to Hiluhilu Development, LLC, regarding the management of approximately 65 acres of forest on your property.

The native forest remnant of most interest lies in the northeastern corner of the property described in your DEIS' Hiluhilu Master Plan, mauka of most of the golf course and adjacent to state-owned forested agricultural land which lies to the immediate north. These 65 acres have been the subject of a biological reconnaissance performed recently by Patrick Hart, Ph.D., and were previously assessed by Dr. Samuel Gon III, Heather Cole and Hannah Springer who also documented the unique cultural and biological resources of the area. The 65 acres appear to be mostly closed canopy regenerating forest, which indicates relatively good health, although there were signs of feral goats and cattle as well as other threats which should be addressed. Of particular interest was halapepe (*Pleomele hawaiiensis*), an endangered species, which occurs in this forest.

During our visit on August 26, we also noted some additional trees and forested patches outside of the 65 acres which deserve management, including the endangered uhiuhi (*Mezoneuron kawaiense*) and several examples of large wiliwili (*Erythrina sandwicensis*).

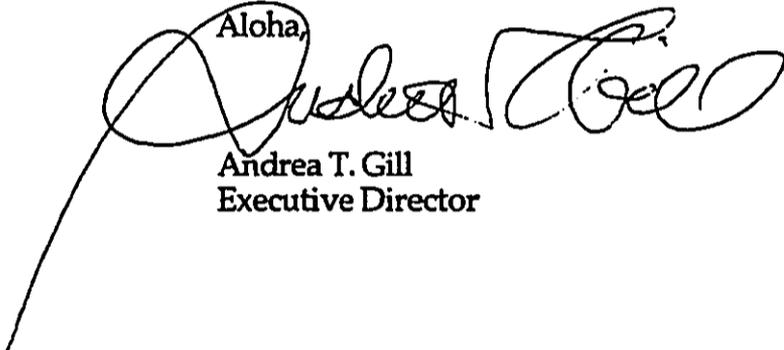
The Hawai'i Forest Industry Association coordinates the North Kona Dryland Forest Working Group, an affiliation of some 40 landowners, public agencies, interested individuals, nonprofit organizations, scientists and private businesses which is currently managing approximately 78 acres of dryland forest a few miles north of Palama Nui at Ka'upulehu, on Kamehameha Schools property. This Working Group has been operating since 1993; among its accomplishments are: complete enclosure fencing;

Mr. Guido Giacometti, page 2
3 September 2003

firebreaks and a fire response plan; rodent and ungulate control; outplanting over 3,000 seedlings, including many individuals of nine endangered plant species; the engagement of several hundred youth and adult volunteers; and the development of an interpretation and outreach program. We anticipate that our success in coordinating and facilitating the management and restoration of these valuable forest remnants will be relevant to your interests at Palama Nui.

Thank you again for your invitation to visit and assess the forest, and for the opportunity to work with Hiluhilu Development, LLC.

Aloha,



Andrea T. Gill
Executive Director

cc: ✓ George Atta, AICP
Anthony Ching, State Land Use Commission
Genevieve Salmonson, OEQC
Roger Harris



Francis S. Oda,
Arch. D., AIA, AICP
Norman G.Y. Heng, AIA
Sheryl B. Seaman, AIA, ASID
Hitoshi Hida, AIA
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Christine M. Ruotola, AICP
James L. Stone, AIA
Scott Tangonan
Wesley N. Ujimon, AIA
Sharon Ching Williams, AIA

December 17, 2003

Ms. Andrea T. Gill
Executive Director
Hawaii Forestry Industry Association
P.O. Box 10216
Honolulu, HI 96721

**Subject: Hiluhilu Development
Draft EIS**

Dear Ms. Gill:

Thank you for the letter of September 3, 2003 regarding the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development.

We appreciate your review and comments regarding the preservation and restoration of the 65-acre dry forest. Mr. Roger Harris of our team has been in communication with the North Kona Dryland Forestry Working Group and we hope to work with them in the management of the preserve.

We appreciate your interest in submitting a management proposal for the site and look forward to receiving it. Please note that we are working with the University of Hawaii and may include an educational/stewardship program related to the preserve as part of our overall plans. The following are offered in response to your comments:

Preservation of additional trees and forested patches outside of the 65 acres, which deserve management, is being addressed as the design of the golf course, residential, University Village, and commercial components are done. The GPS location of these plants has been identified and we will try to protect and incorporate as many of the species as possible into protected pockets integrated into the landscaping of the site. Recommendations provided by Dr. Hart will be followed. Protective enclosures and new planting from seedlings on site are added measures for protecting these sites.

A fire response plan and rodent and ungulate control plans will be considered as we continue to develop our plans in greater detail. We look forward to working with your association in developing these plans.

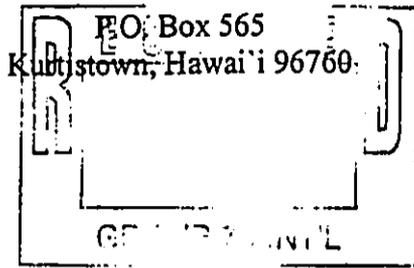
Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,


George Atta, AICP
Chief Community Planner

cc:

Guido Giacometti; Roger Harris; Alan Okamoto



28 September 2003

State Land Use Commission
P.O. Box 2359
Honolulu, Hawaii 96804-2359
Contact: Anthony Ching

Re: *Please deny the request to reclassify 725.2 acres designated "Conservation and Agricultural District" to "Urban District" in the Ahupua`a of Ka`u, North Kona* TMK: 7-2-05:01

Dear Mr. Ching & To Whom it May Concern:

Aloha! As a spring 2003 *Honors* graduate from the *University of Hawaii at Hilo (UH-H)*, I would like to enlighten the Land Use Commission on an insider/student perceptive on *Hiluhilu Development LLC* proposal to construct an 18-hole golf course, commercial/retail establishments, residential units, and etc. on 725.2 acres.

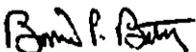
Most students are struggling financially and at the same time striving to maintain a good Grade Point Average (GPA)—we don't have the time or the money to 'play golf'. A second realistic fact is that many students are raising children and are even more on *extra* low-income. Academics and golf don't mix!

Hiluhilu Development LLC proposal to amend Open Space Lands--protected in "Conservation and Agriculture" designations--725.2 acres should not be reclassified to "Urban" designation. The students of the future West Hawaii Campus deserve a natural learning environment, which is rich with greenery and open space which will promote a most advantageous educational environment-- rather than concrete and asphalt—commercial space!

The Land Use Commission must consider this priceless opportunity to establish a world-renowned West Hawaii Campus of the University of Hawaii System. It is not *pono* to have mixed density residential units, other residences for the community and the university—this is what is called URBAN SPRAWL. If *Hiluhilu Development LLC* were sincere in truly offering amenities to the future students of the West Hawaii Campus, it would be creating suggestions such as those made by *UH-Manoa* students in their "Understanding Student Services Committee" stated in *The Honolulu Advertiser*, 9/28/03, pA6; which follows:

- A more "student-centered" campus, including a centralized "one stop shop" for enrollment services.
- More attention to developing a thriving "campus life"
- Improved parking (currently at both *UH-H* and at *UH-Manoa* parking is a nightmare)
Please see: "Campus parking a drag" *Hawaii Tribune-Herald*, p1, 9/21/03
- More inviting landscaping
- More gathering places with safe, quiet, comfortable late-night study areas

Hiluhilu Development LLC has proposed 'commercial' areas, which is a great percentage of the 725.2 acres of land in question, which constitutes an extremely large area of land usage. **The growth in Kona is phenomenal isn't it time for long-range vision and PLANNING??** The Land Use Commission is considering 725.2 acres of land adjacent to a hopefully prestigious oasis of a "Kona" West Hawaii University, **will be it be a clogged metropolitan bummer or a glorious refuge of Higher Education?!** The decision of the Land Use Commission will have unprecedented ramifications. Accountability of *pololei* (correct) judgment by the Land Use Commission in the matter of reclassifying "Conservation and Agricultural District" lands to Urban District designation is imperative. **Once those lands are developed, there's no getting them back.**

Mahalo,  Bonnie P. Bator and `Ohana

C: Office of Environmental Quality Control Group 70 International, Inc Hiluhilu Development LLC
235 S. Beretania Street 925 Bethel Street ~ 5th Floor c/o Group 70 International
Leiopapa A Kamehameha ~ Suite 702 Honolulu, Hawai'i 96813
Honolulu, Hawaii 96813



December 15, 2003

Ms. Bonnie P. Bator
P.O. Box 565
Kurtistown, HI 96760

**Subject: Hiluhilu Development
Draft EIS**

Dear Ms. Bator:

Thank you for the letter of September 28, 2003 regarding the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development.

We appreciate your review and comments regarding the residential, commercial, University development. The following are offered in response to your comments:

In response to your comments regarding a natural learning environment for the students of the future West Hawaii campus, there will be approximately 65 acres of dry forest that will be preserved and set-aside along with an Interpretive Center that UH students and faculty can access for learning and educational purposes. The landscape plan for this development will consist of preserving native plants on site and using native plants in the landscape palette. This will create a more inviting campus and overall development. Also, the University campus site is not a part of this application and the plan for West Hawaii has the entire 500-acre parcel adjacent to our site to develop lower density campus facilities if the UH wishes.

We feel mixed uses with residential, commercial, research/development, and the University actually minimizes urban sprawl. Urban sprawl is more prevalent when there is a separation of uses, which leads to more acreage of land being lost to development. The mixing of land uses creates a compact urban form, an urban village concept, which invites more pedestrian orientation.

The compact University design will create more of a one-stop shop approach for student services. The mixed-use design will enhance the campus life, by having commercial uses that cater to student lifestyle and will also create more gathering places for student and social interaction.

Approximately 13-14% or 95-100 acres of the 725.2 acres will consist of commercial/village use. The commercial, medical campus, and research and development uses will compliment the University and serve students and nearby residents. We do not feel this will cause a "clogged" urban experience. There may be a positive effect in that by locating jobs in the northern end of Kailua-

Francis S. G. ...
Arch ... AICP
Norman G. ... AIA
Suzuki B. ... AIA, ASO
Hirosaki Hida ... AIA
Roy H. ... AIA, CSI
James I. ... AIA
Ralph E. ... AICP
Stephen H. ... AIA
Linda C. ... AIA

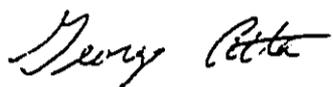
George I. ... AICP
Paul P. ... AIA
Wendy Lee ... AIA, CDF
Philip T. ...
Sutobin ...
Jeremy C. ... AIA
Roy A. ... AIA, CSI
Stuart M. ... AIA
Charles Y. ... AIA
Dean H. ...
Katherine M. ... AIA
Frank B. ...
Kyle K. ...
Kathryn A. ...
Jeffrey H. ... AICP
Christine M. ... AICP
James L. ... AIA
Scott ...
Wesley N. ... AIA
Sharon Ching Williams, AIA

Letter to Ms. Bonnie P. Bator
December 15, 2003
Page 2 of 2

Kona we would be helping to disperse some of the traffic flow away from the congested heart of Kailua-Kona.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,



George Atta, AICP
Chief Community Planner

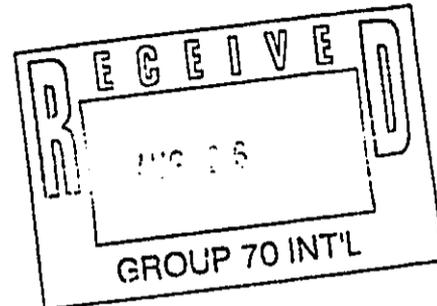
cc:

Guido Giacometti
Roger Harris
Alan Okamoto

GEN-5 (EIS)



August 22, 2003



Francis Oda, Arch.D., AIA, AICP
Principal Architect
Group 70 International, Inc.
925 Bethel Street - Fifth Floor
Honolulu, HI 96813

Dear Mr. Oda:

**Re: Hiluhilu Development Draft EIS
North Kona Judicial District, Hawaii
TMK: 3-7-2-5: 01**

Thank you for the opportunity to comment on the July 2003 Draft EIS of the Hiluhilu Development. We forwarded the subject document to Hawaii Electric Light Co., Inc. (HELCO) and have received the following comments:

- (1) Section 6.2.15 Utilities/Power - Paragraph 1. HELCO recommends that the last sentence of the first paragraph on page 6-20 be deleted and substituted with the following sentence:

The existing electrical transmission line runs parallel to the Queen Ka'ahumanu Highway across the subject property. This line is a portion of the line connecting HELCO's Poopoomino and Keahole switching stations.

- (2) Section 6.2.15 Utilities/Power - Paragraph 2. HELCO suggests replacing this paragraph with the following two paragraphs:

In order to serve the entire project, a 150-foot by 150-foot substation lot located adjacent to the existing 69,000-volt transmission line easement must be dedicated to HELCO in fee simple. This lot is required to install a new electrical substation to convert the voltage from 69,000 volts to 12,000 volts to serve the project loads. Based on the 725 acres available for the residential and commercial development, HELCO will require a new substation to serve the project's anticipated loads. The developer's electrical consultant is required to submit a load schedule to HELCO before the final electrical requirements may be determined. HELCO may be able to serve the initial phases of the development from the Makalei Estates underground distribution system just mauka of the project site, provided that HELCO's Huehue substation capacity is upgraded from 7.5 MVA to 10.0 MVA and the proper easements are obtained.

WINNER OF THE EDISON AWARD
FOR DISTINGUISHED INDUSTRY LEADERSHIP



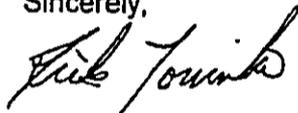
Francis Oda
August 22, 2003
Page Two

HELCO's total system generating capacity is 233,700 kW and the system peak load was 177,900 kW, which occurred on December 30, 2002. The current generation reserve margin of 31.4% is adequate to serve the proposed project. An additional 40,000 kW generating capacity is planned to be installed at Keahole Power Plant in the near future.

- (3) General Comments. A remote meter reading option is now available using the electrical lines as a communication medium to a central master receiver. This option will require additional equipment in the HELCO meters as well as the master receiver at the substation. A cost estimate of this option may be requested from the Engineering Department.
- (4) HELCO would appreciate the opportunity to review the pre-final construction plans to determine whether the project will impact its facilities. Prior to commencement of any relocation work, a written request from the landowner will be necessary, and the work should be coordinated with HELCO.

Our point of contact for this project, and the originator of these comments, is Clyde Nagata, Manager, Engineering Department, Hawaii Electric Light Co., Inc. (808/969-0321). I suggest your staff deal directly with Clyde to coordinate HELCO's continuing input in this project.

Sincerely,



Kirk Tomita
Senior Environmental Scientist

cc: OEQC
C. Nagata
H. Kamigaki





December 17, 2003

Francis S. Oda,
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Wendy Lee Cook, AIA, CST
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Subobin Halim
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Wesley N. Ujimoto, AIA
Sharon Ching Williams, AIA

Mr. Kirk Tomita
Senior Environmental Scientist
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, HI 96840-0001

**Subject: Hiluhilu Development
Draft EIS**

Dear Mr. Tomita:

Thank you for the letter of August 22, 2003, regarding your review of the Draft Environmental Impact Statement (DEIS) for the Hiluhilu Development. The following are offered in response to your comments:

- (1) Section 6.2.15 Utilities/Power – Paragraph 1. The revision you suggested will be made in the Final EIS.
- (2) Section 6.2.15 Utilities/Power – Paragraph 2. The revision you suggested will be made in the Final EIS. To confirm: A 150 foot by 150 substation lot located adjacent to the existing 69,000 volt transmission line easement will be dedicated to HELCO in fee simple. In addition, we have an electrical consultant who will prepare a load schedule for HELCO to review.
- (3) General Comments. Thank you for informing us of the availability of new technologies in remote meter readings. We will consider this option. We will contact HELCO's Engineering Department for more information.
- (4) Per your interest, we will provide pre-final construction plans for HELCO to review.

Your comments and this response letter will be included in the Final EIS. We appreciate your participation in the environmental review process.

Sincerely,

George Atta, AICP
Chief Community Planner

cc: Guido Giacometti, Roger Harris, Alan Okamoto

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Section 12.0
Preparers of the Draft EIS

PALAMANUI – A HILUHILU DEVELOPMENT PROJECT

Final Environmental Impact Statement

12.0 PREPARERS OF THE EIS

This environmental impact statement was prepared for the applicant, the Hiluhilu Development LLC, by Group 70 International, Inc. The following list identifies the individuals and organizations involved in the preparation of this report and their respective contributions.

Group International, Inc.

Francis Oda, AIA, AICP	Conceptual Master Plan
George Atta, AICP	Project Manager
Hitoshi Hida, AIA	Project Designer
Kimberly Evans	Planner
Dennis Silva, Jr., AICP	Planner
Becky Hayashida	Planner
Joy Rabara	Graphics Preparation
Kristin Rocheleau	Document/Graphics Preparation

Other Consultants

Belt Collins
Patrick Hart

Robert Rechtman
Maria Orr
Austin Tsutsumi
Barry Neal
Yoichi Ebisu
Yusuf Tamimi
Clive Jones, KBCG & THK
Waimea Water Services, Inc.
Roger Harris
Island Advisors
Keauhou Kona Construction Corporation
Nakamoto, Okamoto & Yamamoto
Hawai'i Biological Survey

Technical Area

Civil Engineer
Botanical Studies & Wildlife
Resources (Flora & Fauna)
Archaeology
Ethnology
Traffic
Air Quality
Noise
Soil
Market Feasibility
Water
Planning
Project Management
Planning
Legal
Cave Fauna

REDUCED IN FILE

PALAMANUI - A HILUHILU DEVELOPMENT

Final Environmental Impact Statement

Estimated Market Values for Palamanui

	2003	2004	2005	2006	2007	2008
Single Family Detached						
Ocean View Estates						
Average Lot Value	\$ 400	\$ 416	\$ 433	\$ 450	\$ 468	\$ 484
Average Improvement Value	\$ 1,000	\$ 1,040	\$ 1,082	\$ 1,125	\$ 1,170	\$ 1,211
Cumulative	\$ -	\$ -	\$ 12,979	\$ 22,497	\$ 67,852	\$ 94,899
Ocean View Lots						
Average Lot Value	\$ 300	\$ 312	\$ 324	\$ 337	\$ 351	\$ 364
Average Improvement Value	\$ 750	\$ 780	\$ 811	\$ 844	\$ 877	\$ 911
Cumulative	\$ -	\$ -	\$ 6,490	\$ 16,873	\$ 47,379	\$ 89,422
Golf View Lots						
Average Lot Value	\$ 200	\$ 208	\$ 216	\$ 225	\$ 234	\$ 242
Average Improvement Value	\$ 500	\$ 520	\$ 541	\$ 562	\$ 585	\$ 607
Cumulative	\$ -	\$ -	\$ -	\$ 4,499	\$ 9,359	\$ 26,766
Patio Homes						
Average Lot Value	\$ 350	\$ 364	\$ 379	\$ 394	\$ 409	\$ 424
Average Improvement Value	\$ -	\$ -	\$ -	\$ 7,874	\$ 16,378	\$ 25,552
Cumulative	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ -	\$ -	\$ -	\$ 7,874	\$ 16,378	\$ 25,552
Multifamily						
Two Bedroom Condos						
Average Lot Value	\$ 275	\$ 286	\$ 297	\$ 309	\$ 322	\$ 333
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ 3,217	\$ 10,032
Cumulative	\$ -	\$ -	\$ -	\$ -	\$ 3,217	\$ 10,032
Total	\$ -	\$ -	\$ -	\$ -	\$ 3,217	\$ 10,032
Three Bedroom Condos						
Average Lot Value	\$ 350	\$ 364	\$ 379	\$ 394	\$ 409	\$ 424
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ 4,095	\$ 12,771
Cumulative	\$ -	\$ -	\$ -	\$ -	\$ 4,095	\$ 12,771
Total	\$ -	\$ -	\$ -	\$ -	\$ 4,095	\$ 12,771
Apartments						
Average Lot Value	\$ 200	\$ 208	\$ 216	\$ 225	\$ 234	\$ 242
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ 23,397	\$ 24,333
Cumulative	\$ -	\$ -	\$ -	\$ -	\$ 23,397	\$ 24,333
Total	\$ -	\$ -	\$ -	\$ -	\$ 23,397	\$ 24,333
International Student Housing						
Average Lot Value	\$ 150	\$ 156	\$ 162	\$ 169	\$ 175	\$ 181
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ 13,161	\$ 13,688
Cumulative	\$ -	\$ -	\$ -	\$ -	\$ 13,161	\$ 13,688
Total	\$ -	\$ -	\$ -	\$ -	\$ 13,161	\$ 13,688
Senior Housing						
Average Lot Value	\$ 175	\$ 182	\$ 189	\$ 197	\$ 205	\$ 212
Average Improvement Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,000
Cumulative	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,000
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,000
Total Residential Values	\$ -	\$ -	\$ 19,469	\$ 51,744	\$ 184,838	\$ 314,552
Seasonal			\$ 1,947	\$ 5,174	\$ 18,484	\$ 31,452
Permanent			\$ 17,522	\$ 46,569	\$ 166,354	\$ 283,099
Commercial (acres)						
University Village Inn (per room (\$000))	\$ 125	\$ 130	\$ 135	\$ 141	\$ 146	\$ 151
Total	\$ -	\$ -	\$ -	\$ -	\$ 17,548	\$ 18,211
University Leases (value per SF)	\$ 125	\$ 130	\$ 135	\$ 141	\$ 146	\$ 151
Total	\$ -	\$ -	\$ -	\$ 4,218	\$ 4,387	\$ 4,556
Village Commercial (value per SF)	\$ 125	\$ 130	\$ 135	\$ 141	\$ 146	\$ 151
Total	\$ -	\$ -	\$ -	\$ 2,812	\$ 2,925	\$ 3,038
Medical Campus (value per SF)	\$ 200	\$ 208	\$ 216	\$ 225	\$ 234	\$ 242
Total	\$ -	\$ -	\$ -	\$ 6,749	\$ 14,038	\$ 21,919
R&D (value per SF)	\$ 100	\$ 104	\$ 108	\$ 112	\$ 117	\$ 121
Total	\$ -	\$ -	\$ -	\$ -	\$ 1,170	\$ 2,411
Community Commercial (value per SF)	\$ 125	\$ 130	\$ 135	\$ 141	\$ 146	\$ 151
Total	\$ -	\$ -	\$ -	\$ -	\$ 146	\$ 151
Golf Course (\$000)	\$ 16,000	\$ 16,640	\$ 17,306	\$ 17,998	\$ 18,718	\$ 19,448
Total	\$ -	\$ -	\$ 8,653	\$ 17,998	\$ 18,718	\$ 19,448
Total Commercial Values	\$ -	\$ -	\$ 8,653	\$ 31,777	\$ 58,785	\$ 72,611
Total Project Value	\$ -	\$ -	\$ 28,122	\$ 83,521	\$ 243,623	\$ 387,163

Table 3-4

Palamanui Estimated Market Values

LU DEVELOPMENT PROJECT

Final Impact Statement

2007	2008	2009	2010	2011	2012	2013	2014
468 \$	487 \$	506 \$	526 \$	547 \$	569 \$	592 \$	616
1,170 \$	1,217 \$	1,265 \$	1,316 \$	1,369 \$	1,423 \$	1,480 \$	1,539
67,852 \$	94,899 \$	124,001 \$	128,961 \$	134,120 \$	139,485 \$	145,064 \$	150,866
351 \$	365 \$	380 \$	395 \$	411 \$	427 \$	444 \$	462
877 \$	912 \$	949 \$	987 \$	1,026 \$	1,067 \$	1,110 \$	1,155
47,379 \$	89,424 \$	141,399 \$	197,390 \$	246,342 \$	298,895 \$	310,851 \$	323,285
234 \$	243 \$	253 \$	263 \$	274 \$	285 \$	296 \$	308
585 \$	608 \$	633 \$	658 \$	684 \$	712 \$	740 \$	770
9,359 \$	26,766 \$	48,082 \$	71,060 \$	94,431 \$	119,558 \$	124,341 \$	129,314
409 \$	426 \$	443 \$	461 \$	479 \$	498 \$	518 \$	539
16,378 \$	25,550 \$	35,429 \$	36,846 \$	38,320 \$	39,853 \$	41,447 \$	43,105
322 \$	335 \$	348 \$	362 \$	376 \$	391 \$	407 \$	423
3,217 \$	10,037 \$	13,919 \$	21,713 \$	22,581 \$	23,485 \$	24,424 \$	25,401
409 \$	426 \$	443 \$	461 \$	479 \$	498 \$	518 \$	539
4,095 \$	12,775 \$	17,714 \$	27,635 \$	28,740 \$	29,890 \$	31,085 \$	32,329
234 \$	243 \$	253 \$	263 \$	274 \$	285 \$	296 \$	308
23,397 \$	24,333 \$	25,306 \$	26,319 \$	27,371 \$	28,466 \$	29,605 \$	30,789
175 \$	182 \$	190 \$	197 \$	205 \$	213 \$	222 \$	231
13,161 \$	13,687 \$	14,235 \$	14,804 \$	15,396 \$	16,012 \$	16,653 \$	17,319
205 \$	213 \$	221 \$	230 \$	239 \$	249 \$	259 \$	269
- \$	17,033 \$	17,714 \$	18,423 \$	19,160 \$	19,926 \$	20,723 \$	21,552
184,838 \$	314,505 \$	437,800 \$	543,151 \$	626,462 \$	715,570 \$	744,193 \$	773,961
18,484 \$	31,450 \$	43,780 \$	54,315 \$	62,646 \$	71,557 \$	74,419 \$	77,396
166,354 \$	283,054 \$	394,020 \$	488,836 \$	563,816 \$	644,013 \$	669,774 \$	696,564
146 \$	152 \$	158 \$	164 \$	171 \$	178 \$	185 \$	192
17,548 \$	18,250 \$	18,980 \$	19,739 \$	20,529 \$	21,350 \$	22,204 \$	23,092
146 \$	152 \$	158 \$	164 \$	171 \$	178 \$	185 \$	192
4,387 \$	4,562 \$	4,745 \$	9,869 \$	10,264 \$	10,675 \$	11,102 \$	11,546
146 \$	152 \$	158 \$	164 \$	171 \$	178 \$	185 \$	192
2,925 \$	6,083 \$	6,327 \$	13,159 \$	13,686 \$	14,233 \$	14,802 \$	15,395
234 \$	243 \$	253 \$	263 \$	274 \$	285 \$	296 \$	308
14,038 \$	21,900 \$	30,368 \$	31,582 \$	32,846 \$	34,159 \$	35,526 \$	36,947
117 \$	122 \$	127 \$	132 \$	137 \$	142 \$	148 \$	154
1,170 \$	2,433 \$	4,429 \$	7,238 \$	11,633 \$	17,791 \$	25,164 \$	33,868
146 \$	152 \$	158 \$	164 \$	171 \$	178 \$	185 \$	192
		3,954 \$	8,225 \$	12,830 \$	19,571 \$	27,755 \$	38,486
18,718 \$	19,466 \$	20,245 \$	21,055 \$	21,897 \$	22,773 \$	23,684 \$	24,631
18,718 \$	19,466 \$	20,245 \$	21,055 \$	21,897 \$	22,773 \$	23,684 \$	24,631
58,785 \$	72,695 \$	89,047 \$	110,867 \$	123,684 \$	140,552 \$	160,236 \$	183,965
243,623 \$	387,200 \$	526,847 \$	654,018 \$	750,147 \$	856,122 \$	904,429 \$	957,925

Unit (\$000)

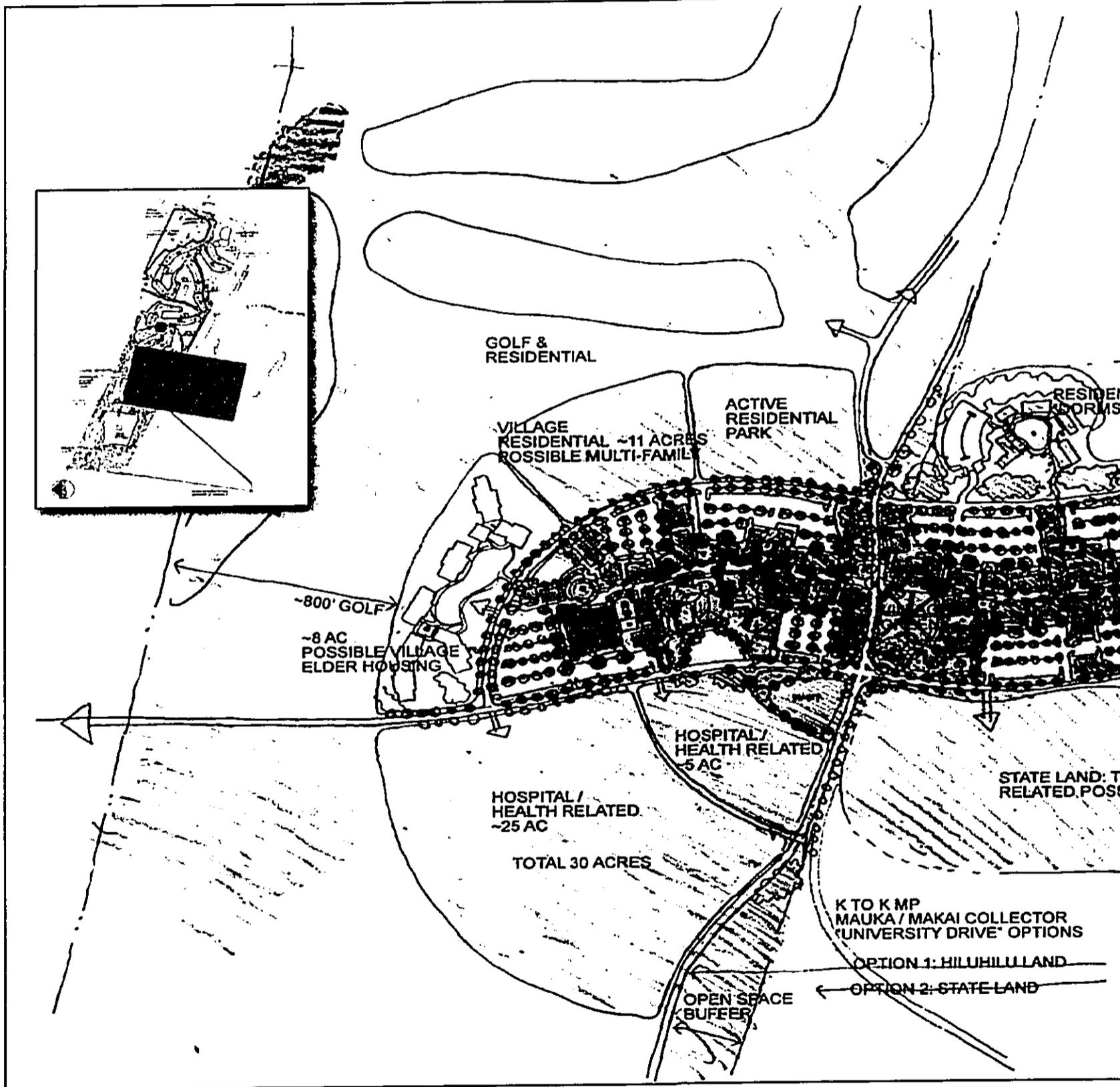
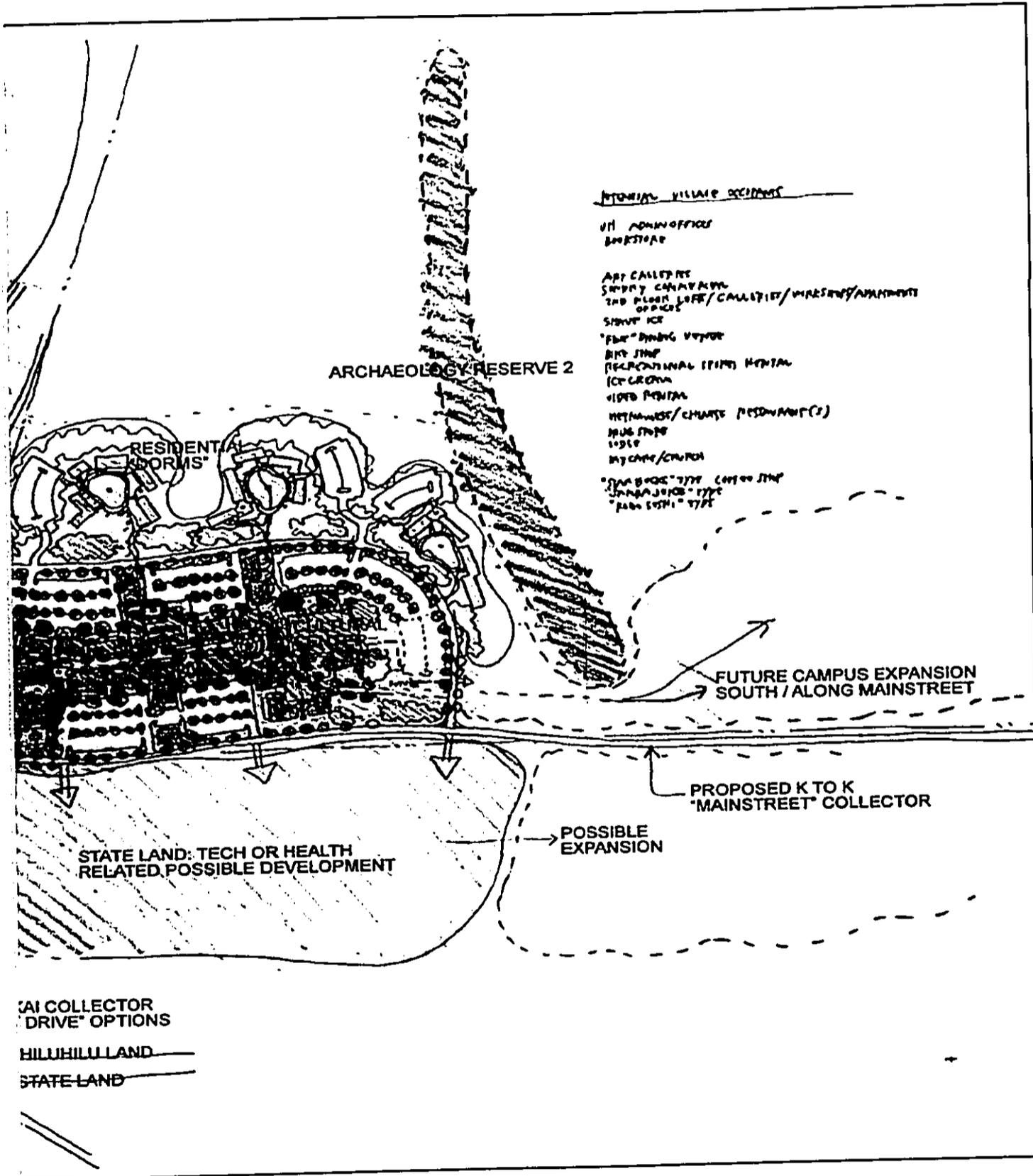


Figure 3-2

Master Plan Detail: University Village

LU DEVELOPMENT PROJECT

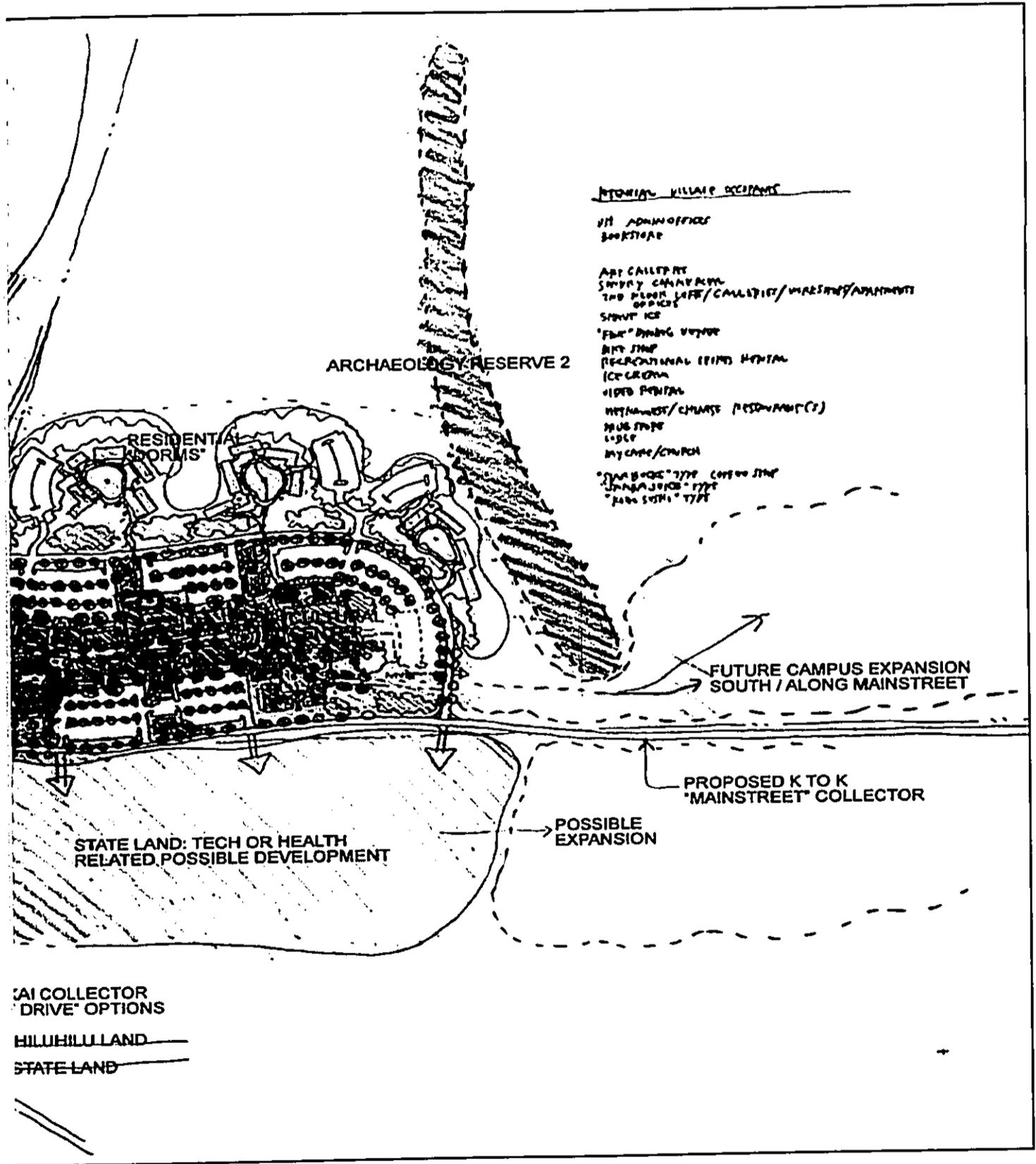
Initial Impact Statement



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LU DEVELOPMENT PROJECT

Final Impact Statement



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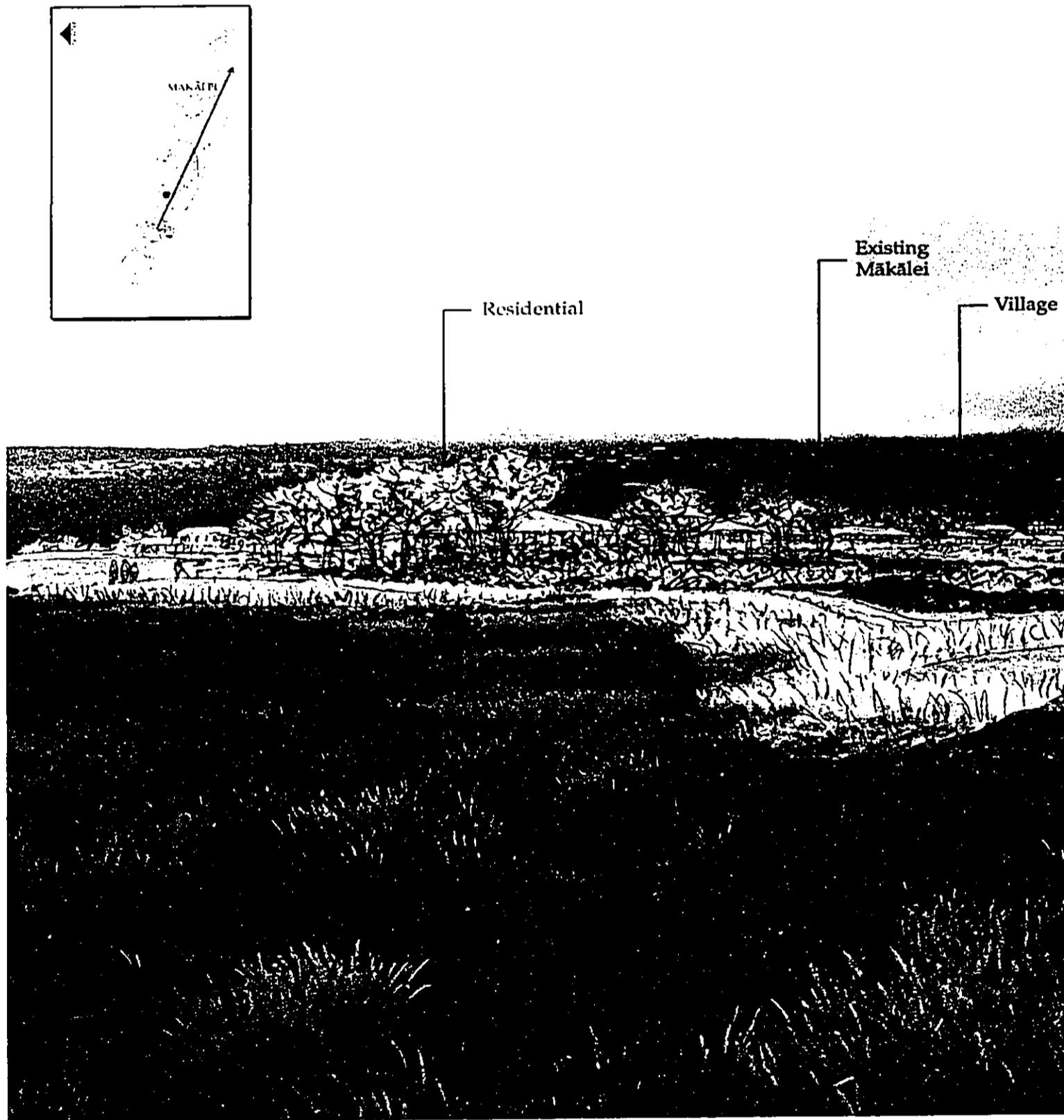


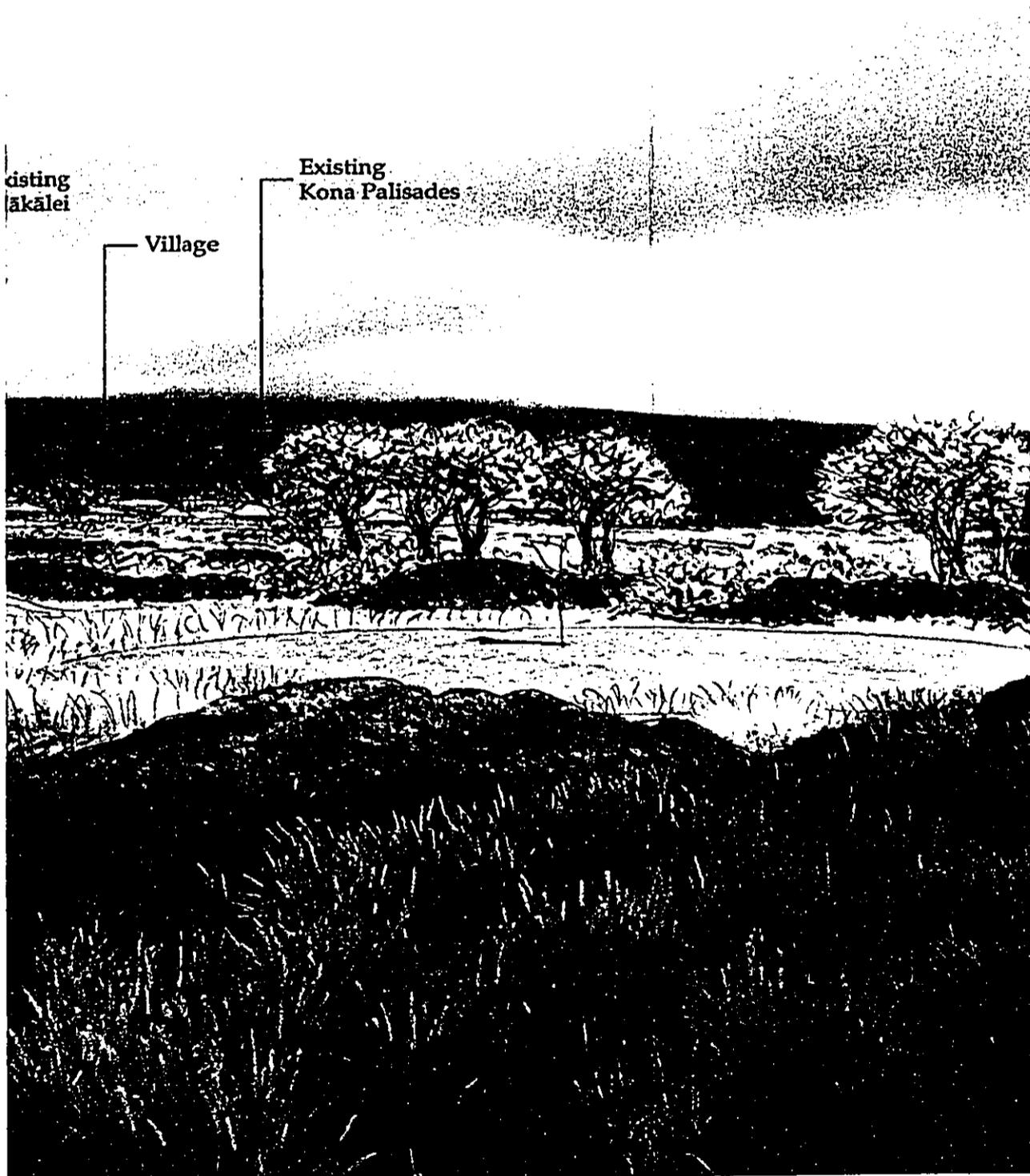
Figure 3-4

View Impacts of Palamanui Project

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LU DEVELOPMENT PROJECT

Final Impact Statement



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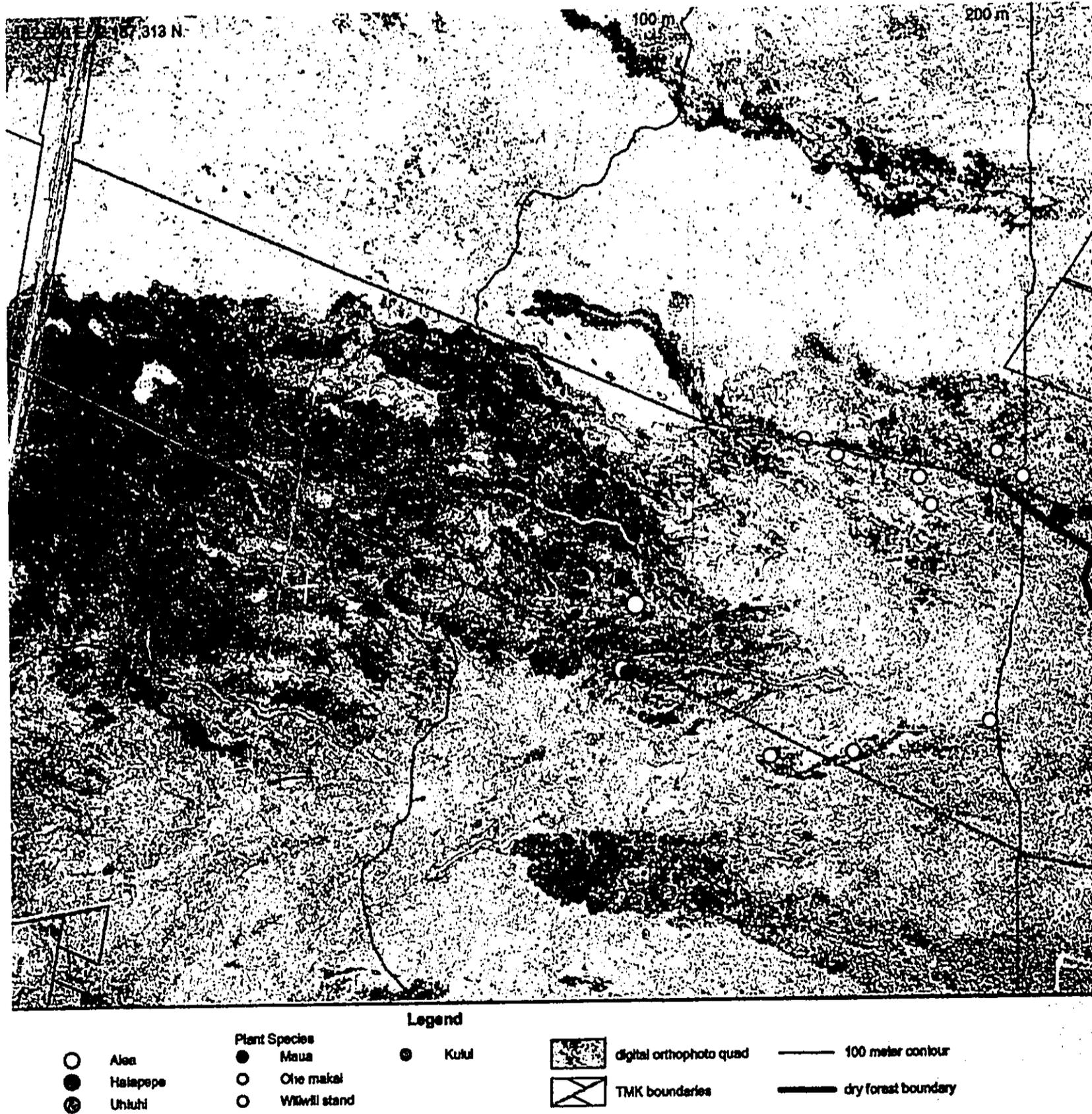


Figure 4-6

Vegetation - Location of Rare and Endangered Plants

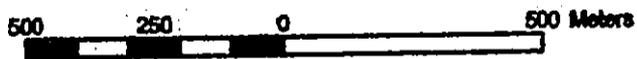
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Initial Impact Statement



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Universal Transverse Mercator Projection, Zone 5, Datum NAD 83

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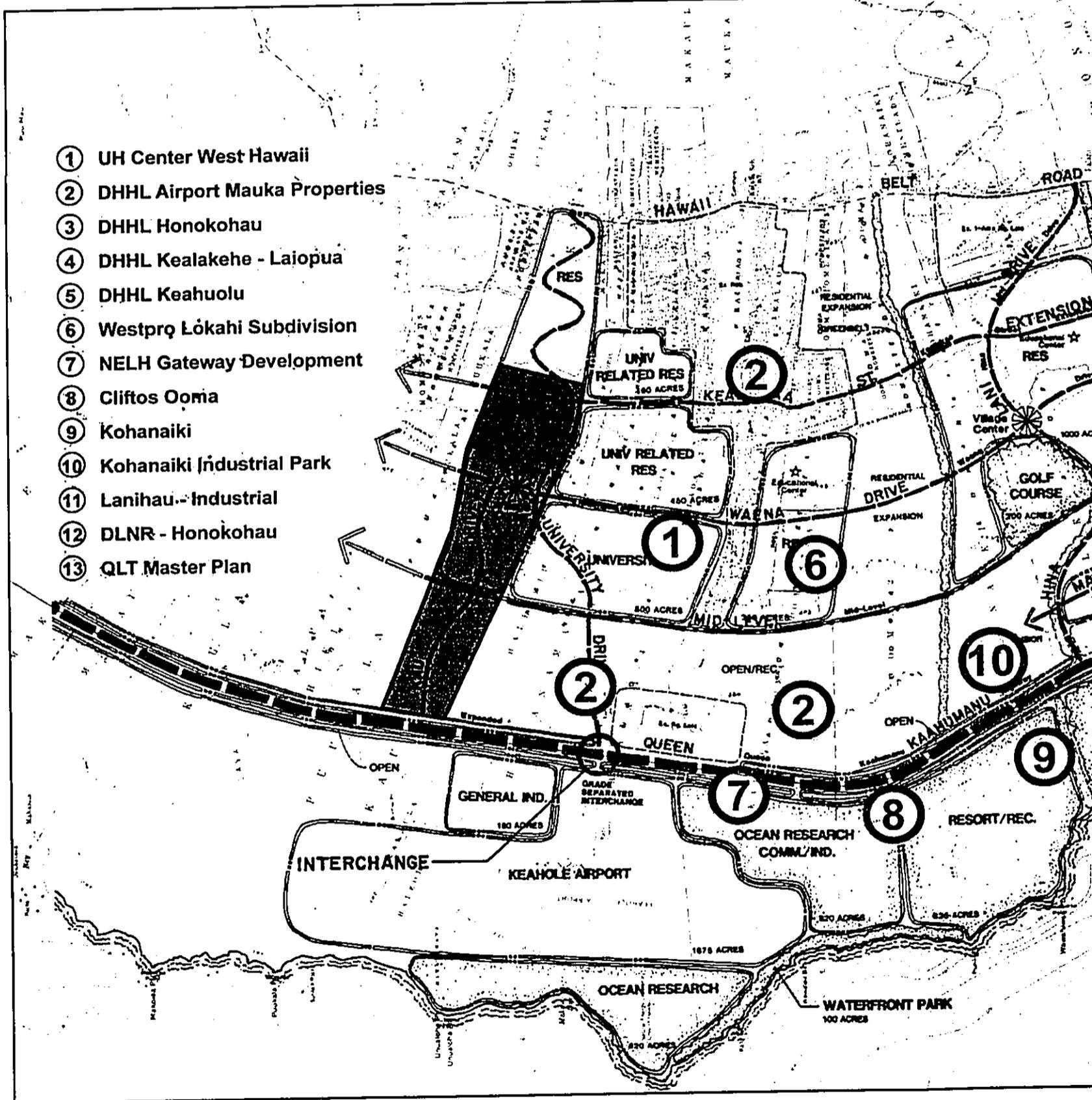
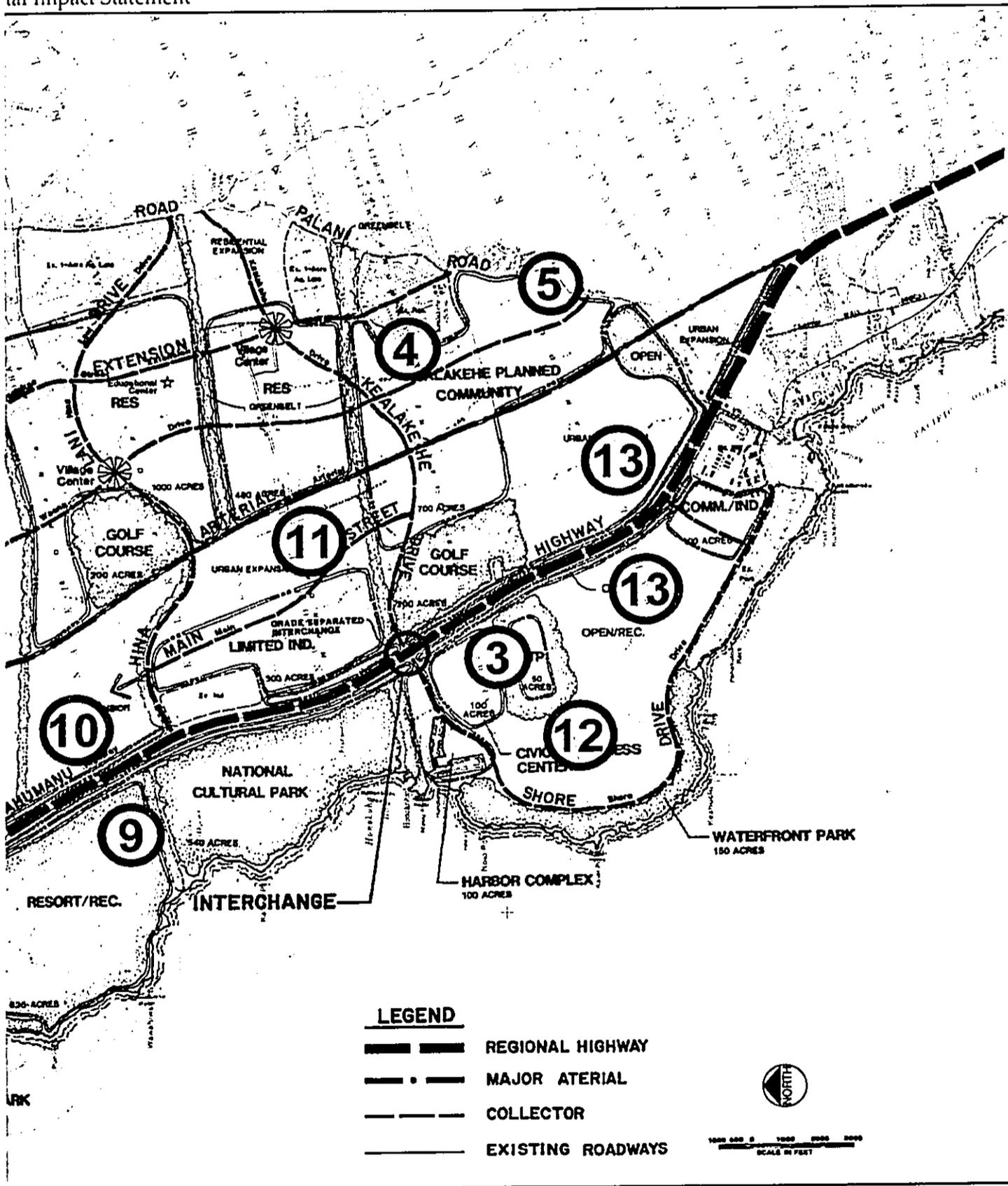


Figure 6-2
Projects in the Region

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LU DEVELOPMENT PROJECT
 tal Impact Statement



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