

FINAL ENVIRONMENTAL IMPACT STATEMENT

VOLUME 1 OF 3

# KULA NEI PROJECT

O'oma, North Kona, Island of Hawai'i

September 2007

Prepared by



Prepared for





# KULA NEI PROJECT

O'oma, North Kona, Island of Hawai'i

September 2007

Prepared for the Shopoff Group



Prepared by Belt Collins Hawaii Ltd.



This Environmental Impact Statement has been prepared by Belt Collins Hawaii Ltd.  
acting as a consultant to the Shopoff Group.

A handwritten signature in black ink, appearing to read "Lee Sichter".

Lee Sichter, Principal Planner  
Belt Collins Hawaii Ltd.

9/6/07  
Date

A handwritten signature in blue ink, appearing to read "Brian Rupp".

Brian Rupp, Project Manager  
The Shopoff Group

09/06/07  
Date



**Kula Nei Project  
O'oma, North Kona, Island of Hawai'i  
Revisions to the Draft Environmental Impact Statement**

<b>SECTION</b>	<b>CHANGE</b>
<b>Cover Volume 1 of 3</b>	Revised from Draft to Final; revised date from June to September.
Inside Cover Sheet	Added signature of Brian Rupp for Shopoff Group.
Table of Contents	Revised footer text from Draft to Final; revised date from June to September; revised page numbers.
Acronyms and Abbreviations	Revised footer text from Draft to Final; revised date from June to September; corrected acronym for HELCO; added SIHP.
<b>Chapter One</b>	
Chapter 1 footer	Revised text from Draft to Final; revised date from June to September.
Section 1.1	Revised text from Draft to Final.
Section 1.2	Revised text to include TSG Kula Nei, L.P., and Springbrook Investments, L.P.; added text to The Shopoff Group.
Section 1.5	Revised text from Draft to Final; revised text re The Shopoff Group; revised to TSG Kula Nei, L.P.
Section 1.6	Added zip code for Brian Rupp
Section 1.10	Added word 'in' in last line of 2 <sup>nd</sup> paragraph; added 'and alternative roadway connections.' to last line 7 <sup>th</sup> paragraph.
Section 1.12	Added 'it will' to last line of 1 <sup>st</sup> paragraph.
Section 1.14	Removed word 'and', and included ',' last line of 2 <sup>nd</sup> paragraph.
Section 1.16	Revised text regarding ownership of Homestead Road; added 'of the' within parenthesis.
<b>Chapter Two</b>	
Chapter 2 footer	Revised text from Draft to Final; revised date from June to September
Footnote 1	Revised text from Draft to Final; revised to TSG Kula Nei, L.P.
Section 2.1	Revised text to The Shopoff Group; 2 <sup>nd</sup> paragraph added the word 'in' to last sentence.
Table 2-1	Revised text to TSG Kula Nei, L.P.
Section 2.4.1	Added text 'Areas shown are preliminary'; deleted the words 'or successor'; added word 'in' in last sentence of 3 <sup>rd</sup> paragraph, removed the word 'and' in 6 <sup>th</sup> paragraph two times.
Section 2.4.3	Revised text regarding acreage; removed text regarding restroom facilities.
Section 2.4.5	Revised section header; moved text regarding treated wastewater effluent to Section 2.4.6.
Section 2.4.5.1	Added the word 'The' to the 1 <sup>st</sup> sentence.
Section 2.4.6	Removed 1 <sup>st</sup> sentence of 2 <sup>nd</sup> paragraph; added text regarding treated wastewater effluent from Section 2.4.5.
Section 2.4.7	Removed 'following' from 3 <sup>rd</sup> sentence and include 'the' and 'and' for grammatical correction; added 'West Hawai'i to last sentence of last paragraph for clarification.
Section 2.4.8	Corrected spelling of Hawaii Electric Light Company, Inc.
Section 2.4.10	Added text regarding use of native plants.
Section 2.5.2	Added 'a' as grammatical correction.
Section 2.6.1	In Soils, Topography, and Drainage section, changed the word 'evasive' to 'invasive'.
Section 2.6.2	In Land Use Policy section, added 's' to envision; in Public Service section added 'for' in 2 <sup>nd</sup> sentence.

<b>SECTION</b>	<b>CHANGE</b>
Section 2.6.3	In Soils, Topography, and Drainage section, changed text to 'Therefore,;' in Public Services section, added the word 'for'.
Section 2.6.6	2 <sup>nd</sup> paragraph removed text.
Section 2.6.7	3 <sup>rd</sup> paragraph changed text from region to 'locale.'
Section 2.6.10	2 <sup>nd</sup> paragraph changed as to 'of'.
<b>Chapter Three</b>	
Chapter 3 footer	Revised text from Draft to Final, revised date from June to September.
Section 3.2.1	Corrected spelling of Kohala.
Section 3.3.1	Corrected acronym to 'LSB'.
Section 3.3.1.1	Corrected header to 'SCS Soil Survey'; under Agricultural Lands of Importance to the State of Hawaii section, removed 'and'.
Section 3.3.1.2	Corrected header to 'SCS Soil Survey'; under SCS Soil Survey section, removed 'non-'; under Overall Productive Rating section, corrected information.
Section 3.3.2	Added new header number.
Section 3.3.3	Renumbered due to adding additional header above.
Section 3.4.7	Added the word 'were' for clarification.
Section 3.4.10.1	Corrected text from 'highest' to 'lowest'.
Section 3.4.10.5	Corrected title to 'Potential Impacts and Mitigation'.
Section 3.4.11	Corrected text from '1981' to '1982' and from '1991' to '1992'.
Section 3.5.1	Under Managed land Vegetation section, added 'which', removed 'which', and added 'both'. Under Roads Around Primary Project Area section, added 'include', added the herbs include', added 'is', changed 'of' to 'are' for clarification in reading. Under Accessory Areas: TMK 7-3-007: 042 and 043 section, removed 'listed found and listed' for clarification.
Section 3.6.1.1	Under Accessory Areas section, corrected spelling to 'Arctic'.
Section 3.7.1	8 <sup>th</sup> paragraph, changed 'to' to 'or'; 9 <sup>th</sup> paragraph added acronym.
<b>Chapter Four</b>	
Chapter 4 footer	Revised text from Draft to Final; revised date from June to September.
Section 4.1.1	Corrected spelling of preservation.
Section 4.1.2	Revised text to residence's'; revised to case's'.
Section 4.1.3.2	Revised text to remove 'which is'; changed 'which' to 'that'; added 'and'; removed 'that'; removed 'also'.
Section 4.1.3.3	Revised text to add 'of'.
Section 4.1.3.4	Revised text to add 'those'.
Section 4.1.4.1	Added text regarding SHPD letter having been added to Appendix G.
Section 4.1.4.3	Moved the word 'one' for clarification.
Section 4.2.1	Removed 'P.' from title of Bishop Museum; changed text from 'that' to 'which'.
Section 4.2.2.3	Removed 's' from resource; added text 'and'.
Section 4.2.2.4	Added apostrophy to lands.
Section 4.2.2.6	Added text 'and' and 'their'; under Land Grants in O'oma section, changed text from 'thus' to 'thereby'; removed text 'were subdivided'; added text 'were subdivided, each'; under Trails and Roads of Kekaha section, removed text 'together'; changed text from 'are' to 'is'; changed text from 'Following' to 'In'; removed text, 'thus,; added 'being'; replace 'with' with 'having'; under Twentieth Century Travel section, removed text 'After that time,'.

<b>SECTION</b>	<b>CHANGE</b>
Section 4.2.3.2	Added text 'both areas of'; added text 'A'; changed text from 'as' to 'to those of'; corrected spelling of liaison; removed text 'was an activity'.
Section 4.2.3.3	Corrected grammar to 'residents'; added text 'to sell'; added text 'of'; changed text from 'being' to 'given is'; changed text from 'were' to 'are'; changed text from 'for' to 'from'; added text 'and'.
Section 4.2.3.4	Split sentence for clarification, removing 'and' adding 'They'; replaced text 'with' with 'in'; added text 'a'; added text 'to'; added text 'to'; changed text 'There were no' to 'No'.
Section 4.3.2	Changed text from 'the' to 'intersection'; removed 'of its intersections'; changed text from 'quicker' to 'more quickly'; changed text 'that' to 'to'.
Section 4.3.6	Added text 'can'; added text 'projects'; removed text 'of' and 'accounting for'; added text 'address'; changed text from 'which' to 'that'.
Section 4.3.7	Added text 'project'
Section 4.3.7.2	Removed text 'have'; changed text 'its' to 'the';
Section 4.3.7.7	Added text "and from"; removed text 'to and'; added text 'levels'.
Section 4.4.1	Corrected Class 'A' to 'C'.
Section 4.5.1.2	Changed text from '2000-2004' to '2000 and 2004'; added text 'is'.
Section 4.5.2	Added text 'those from'.
Section 4.5.2.1	Spelled out 'Fahrenheit'.
Section 4.5.2.3	Added text 'the'.
Section 4.6.2	Added text 'and'.
Section 4.6.3	Added 's' to Kona Hill.
Section 4.7.1.2	Removed text 'yet'; corrected spelling 'to'.
Section 4.7.1.3	Removed text 'provide'; added text 'impacts'; added explanation of acronym TIAR.
Section 4.7.2.2	Added text regarding mitigation.
Section 4.7.3.2	Corrected text on BMP acronym; corrected spelling 'up-to-date'; added 's' to 'resource'; removed text 'total'; added text on mgd acronym; added text re individual lot owners. .
Section 4.7.4.2	Corrected spelling of 'Home Owners' Association'.
Section 4.7.5.1	Added text on kW acronym, megawatt acronym and kilovolt acronym; changed text from 'kilovolt' to 'kV circuits'; changed text and combined sentence, removed 'Oceanic Time Warner Cable' and added ', which'; changed text 'CATV' to 'cable television'.
Section 4.8.1	Added text 'The'; added text 'annual'; changed text 'white' to 'caucasians'.
Section 4.8.2	Changed text 'the' to 'all'; changed text '2000' to 'then'; removed text 'has'; added text 'known'; changed text 'a' to 'the'.
Section 4.8.3	Added text 'led to'; added text 'and'; added text 'being'.
Section 4.8.4	Removed text 'about'; changed text from 'eight' to 'seven'; added text 'the'; removed text 'who would not come if the project were not built'; changed text to 'accounting'; added text 'for'; changed text from 'derived' to 'described'.
Section 4.9.3	Added text 'and'; revised text to clarify and correct per letter from State Department of Education; removed Table 4-46 and corresponding text; added text clarifying Shopoff/DOE discussions.
Section 4.9.4	Changed text from 'County' to 'owner'
<b>Chapter Five</b>	
Chapter 5 footer	Revised text from Draft to Final; revised date from June to September.
Section 5.3	Changed 'Table 5-1' to 'Table 5-1a' and 'Table 5-1b'.
Section 5.3	Table 5-1a: Section 226-6 (17) corrected 'NC' to 'NA'; added 'former historic' to commentary in section 226-25.

<b>SECTION</b>	<b>CHANGE</b>
Section 5.4.9.2	Changed text in heading from 'on' to 'in'.
<b>Chapter Six</b>	
Chapter 6 footer	Revised text from Draft to Final; revised date from June to September.
Section 6.4	Revised text regarding ownership of Homestead Road.
<b>Chapter Seven</b>	
Chapter 7 footer	Revised text from Draft to Final; revised date from June to September.
Section 7.1	Revised text from Draft to Final and to include comments received on the Draft EIS, and additional/revised 'Respondents and Distribution' information.
<b>Chapter Eight</b>	
Chapter 8 footer	Revised text from Draft to Final; revised date from June to September.
Chapter 8	Added references for SMS Research & Marketing and Peterson.

<b>SECTION</b>	<b>CHANGE</b>
<b>Cover Volume 2 of 3</b>	Revised from Draft to Final, Revised date from June to September
Inside Cover Sheet	Revised from Draft to Final, Revised date from June to September
Appendix G	Added April 28, 2004 letter from State Historic Preservation Division

<b>SECTION</b>	<b>CHANGE</b>
<b>Cover Volume 3 of 3</b>	Revised from Draft to Final, Revised date from June to September
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## ACRONYMS AND ABBREVIATIONS

2000 HCM	<i>2000 Highway Capacity Manual</i>
AAQS	ambient air quality standards
ALISH	Agricultural Lands of Importance to the State of Hawai'i
(the) applicant	The Shopoff Group, L.P.
Big Island	County of Hawai'i or island of Hawai'i
BLNR	Board of Natural Resources (State of Hawai'i)
BMP	best management practices
BOE	Board of Education
CC&R	covenants, conditions, and restrictions
County of Hawai'i	island of Hawai'i or Big Island
CPR	condominium property regimes
CTTP	Countywide Transportation Planning Process
CWRM	Commission on Water Resource Management (State of Hawai'i)
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Area (State of Hawai'i)
dBA	A-weighted sound level in decibels
DBEDT	Department of Business, Economic Development, and Tourism
DHHL	Department of Hawaiian Home Lands
DHS	Department of Homeland Security
DLNR	Department of Land and Natural Resources (State of Hawai'i)
DOA	Department of Agriculture
DOE	Department of Education
DOH	Department of Health
DWS	Department of Water Supply
EIS	Environmental Impact Statement

EISPN	Environmental Impact Statement Preparation Notice
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
gpd	gallons per day
GPR	ground penetrating radar
HAR	Hawaii Administrative Rules
HDOT	Hawai'i Department of Transportation
HELCO	Hawaiian Electric <u>Light</u> Company, Inc.
Hiluhilu	Hiluhilu Development LLC
HOA	Home Owner's Association
HRS	Hawaii Revised Statutes
HTA	Hawai'i Tourism Authority
ICBO	International Conference of Building Officials
IWS	individual wastewater system
Keāhole Plan	Keāhole to Kailua Development Plan
kW_____	<u>kilowatt</u>
kV_____	<u>kilovolt</u>
LOS	level of service
LSB	Land Study Bureau (University of Hawai'i)
LUC	Land Use Commission (State of Hawai'i)
LUPAG	Land Use Pattern Allocation Guide
mg	million gallon
msl	mean sea level
MUTCD	<i>Manual on Uniform Traffic Control Devices</i>
<u>MW</u> _____	<u>megawatt</u>

NELHA	Natural Energy Laboratory Hawai'i Authority
NFIP	National Flood Insurance Program
NPDES	National Pollutant Discharge Elimination System
OEQC	Office of Environmental Quality Control
Planning Act	Hawai'i State Planning Act
(the) project	Low-density residential subdivision
(the) property	150 acres of land in North Kona
SCS	Soil Conservation Service
Service	U.S. Fish and Wildlife Service
SHPD	State Historic Preservation Division (DLNR)
SIHP	State Inventory of Historical Preservation
SMA	Special Management Area
State	State of Hawaii
SWCA	SWCA Environmental Consultants
<u>TIAR</u>	<u>Traffic Impact Analysis Report</u>
TMK	Tax Map Key
TSG	The Shopoff Group, L.P.
USDA	U.S. Department of Agriculture
WWTP	wastewater treatment plant
UBC	Uniform Building Code
UIC	Underground Injection Control
USDW	underground sources of drinking water
USFWS	U.S. Fish and Wildlife Service
V/C	Volume to capacity
vog	volcanic emissions
WWII	World War II

WWS Waimea Water Service

WWTP Wastewater Treatment Plant

# CHAPTER ONE: INTRODUCTION AND SUMMARY

---

## 1.1 INTRODUCTION

This ~~Draft~~ Final Environmental Impact Statement (EIS) is prepared pursuant to Chapter 343, Hawai‘i Revised Statutes (HRS), and Title 11, Chapter 200, Hawai‘i Administrative Rules (HAR), Department of Health (DOH), State of Hawai‘i (State). As part of the proposed project, planned roadways are required to cross over government owned land. The use of government land triggers compliance with Chapter 343, as does the proposal to construct a wastewater treatment plant that will serve in excess of fifty residential units.

## 1.2 PROJECT PROFILE

<b>Project Name:</b>	Kula Nei
<b>Location:</b>	O‘oma 1 <sup>st</sup> and 2 <sup>nd</sup> , Kona, Island of Hawai‘i
<b>Judicial District:</b>	North Kona
<b>Landowner:</b>	<u>TSG Kula Nei, L.P. and Springbrook Investments, L.P.</u> <del>The Shopoff Group</del>
<b>Applicant:</b>	<u>The Shopoff Group, L.P. (Hereinafter, “The Shopoff Group” or “TSG”)</u>
<b>Tax Map Key (TMKs):</b>	Primary Project Area: TMKs 7-3-7: 038, 039, and 7-3-9: 007 Accessory Areas: TMK 7-3-9: por 008; 7-3-46: 105; 7-3-6: por. 035, por. 036, por. 037; 7-3-7: 080; 7-3-7: por 42, and por 43.
<b>Existing Use</b>	Vacant Land
<b>Proposed Use:</b>	Residential Subdivision
<b>Land Use Designations:</b>	PRIMARY PROJECT AREA: TMKs 7-3-7: 038, 039, and 7-3-9: 007  State Land Use: Agricultural County Zoning District: A-5a Land Use Pattern Allocation Guide: Low Density Urban

ACCESSORY AREAS:

State Land Use:	All Parcels	Agricultural
County Zoning	TMK: 7-3-9: por. 008	A-5a
District:	TMK: 7-3-46: 105	A-5a
	TMK: 7-3-6: por. 035	A-3a
	TMK: 7-3-6: por. 036	A-3a
	TMK: 7-3-6: por. 037	A-3a
	TMK: 7-3-7: 080	FA-2a
	TMK: 7-3-7: por. 042	A-5a
	TMK: 7-3-7: por. 043	A-5a
Land Use Pattern		
Allocation Guide:	TMK: 7-3-9: por. 008	Low Density Urban
	TMK: 7-3-46: 105	Low Density Urban
	TMK: 7-3-6: por. 035	Low Density Urban
	TMK: 7-3-6: por. 036	Low Density Urban, Important Ag. Lands
	TMK: 7-3-6: por. 037	Important Ag. Lands
	TMK: 7-3-7: 080	Low Density Urban
	TMK: 7-3-7: por. 042	Low Density Urban
	TMK: 7-3-7: por. 043	Low Density Urban

**Permits/Approvals Required** State Land Use District Boundary Amendment  
County Change of Zone  
National Pollutant Discharge Elimination System (NPDES)  
Subdivision Approval  
Grading and Building Permits

### 1.3 LOCATION

The proposed Kula Nei project is located in the O‘oma Homestead region of Kona *makai* of Māmalahoa Highway (Figure 1-1). It is about four miles due north of Kailua-Kona and about one mile from Queen Ka‘ahumanu Highway (Figure 1-2). The Kula Nei project area is surrounded on three sides by existing or proposed subdivisions: Kona Acres and O‘oma Plantation to the north, Kona Hills Estates to the east, and the recently approved but not yet built Kaloko Heights to the south (Figure 1-3). Vacant lands owned by the State of Hawai‘i border the Kula Nei project to the northwest and the west.

### 1.4 EXISTING USE

The Kula Nei project site is currently vacant land and unused.

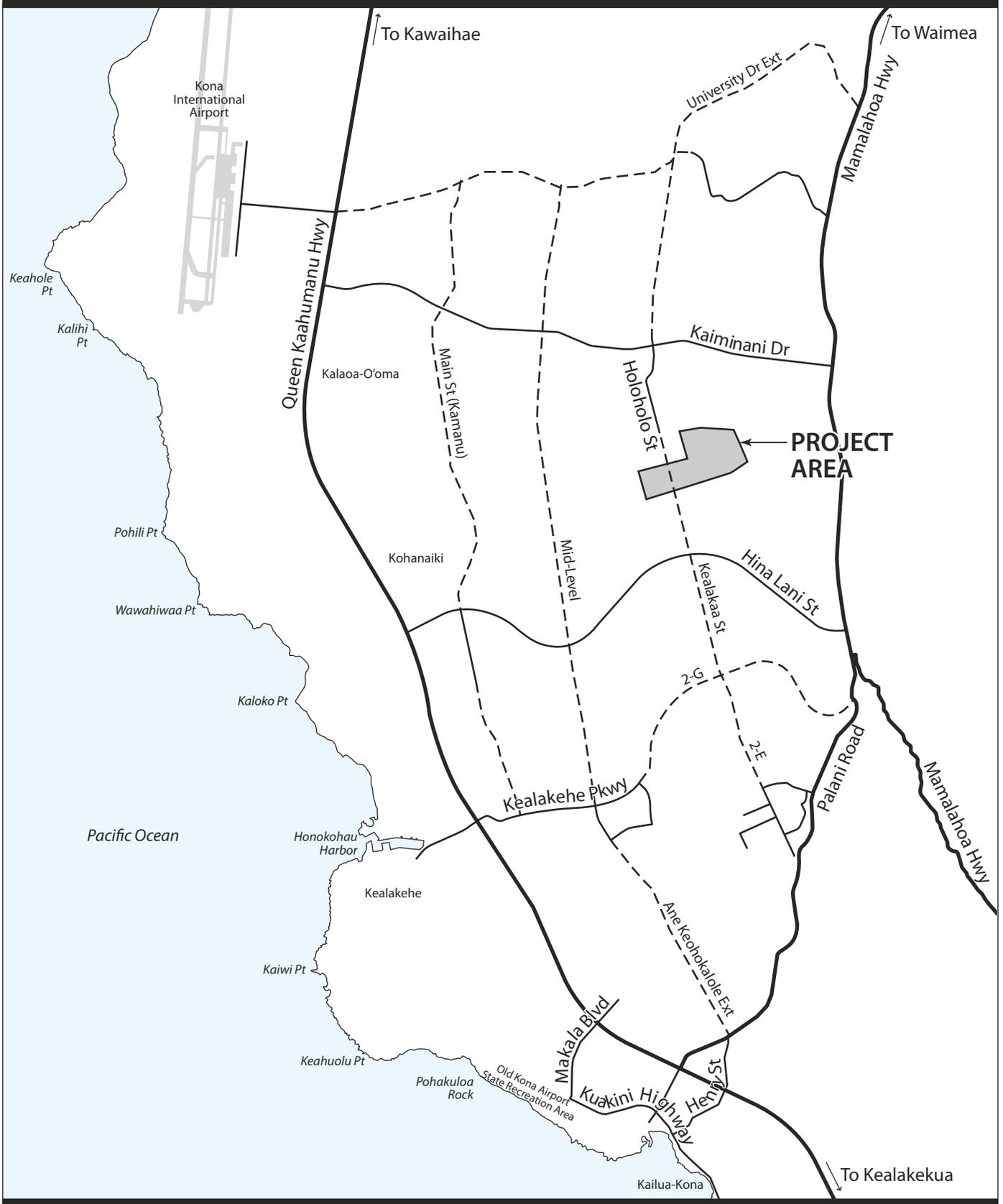


**Figure 1-1**  
**LOCATION MAP**

Kula Nei  
North Kona, Hawaii  
Environmental Impact Statement  
Prepared for The Shopoff Group  
September 2007







**Figure 1-2  
REGIONAL MAP**

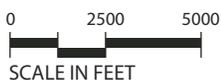
Kula Nei

North Kona, Hawaii

Environmental Impact Statement

Prepared for The Shopoff Group

September 2007



**LEGEND**

- Future Roads
- Minor Roads
- Major Roads





**Figure 1-3**  
**REGIONAL VIEW OF PROJECT AREA**

Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for the Shopoff Group  
 September 2007



## 1.5 LAND OWNERSHIP

The Shopoff Group, L.P. (hereinafter, “The Shopoff Group” or “TSG”) represents two legal entities which own various properties included in the Project: TSG Kula Nei, L.P., a California limited partnership (formerly known as Wasson Canyon Investments, L.P.), and Springbrook Investments, L.P., a California limited partnership. TSG is also seeking to acquire properties included in the Project and at the time this ~~Draft~~-Final EIS is being prepared TSG has been authorized by those property owners to act on their behalf.

## 1.6 THE APPLICANT

The Applicant is The Shopoff Group, L.P.

Contact Person: Brian Rupp, Project Manager  
8951 Research Drive  
Irvine, California 92618  
Telephone: (949) 231-5068  
Facsimile: (949) 417-1399

## 1.7 ENVIRONMENTAL CONSULTANT

Contact Person: Lee Sichter, Principal Planner  
Belt Collins Hawaii  
2153 North King Street  
Honolulu, Hawai‘i 96819  
Telephone: (808) 521-5361  
Facsimile: (808) 538-7819

## 1.8 ACCEPTING AUTHORITY

The State of Hawai‘i Land Use Commission (LUC) is the accepting authority for the EIS. Determination of the LUC as the accepting authority is in accordance with Chapter 343, HRS, which states that privately initiated EIS documents must be accepted by the government agency empowered to issue permits for the project.

Contact Person: Anthony Ching, Executive Officer  
State Land Use Commission  
P.O. Box 2359  
Honolulu, Hawai'i 96804  
Telephone: (808) 587-3822  
Facsimile: ~~Fax:~~ (808) 587-3827

## 1.9 STUDIES CONTRIBUTING TO THIS ENVIRONMENTAL IMPACT STATEMENT

A number of specific technical studies were prepared for Kula Nei. These include:

- Market Study
- Civil Infrastructure
- Agriculture Study
- Botanical Survey
- Avifaunal and Feral Mammal Survey
- Biological Surveys of Lava Tube Caves
- Archaeological Inventory Surveys
- Cultural Impact Assessment
- Traffic Impact Analysis Report
- Air Quality Report
- Hydrology Analysis

## 1.10 PROJECT SUMMARY AND ALTERNATIVES

TSG proposes the development of a low-density residential subdivision that will ultimately consist of approximately 270 residential market and affordable units (hereinafter, “the project”). The project will include a neighborhood park, community trails and greenbelts, an internal road network, off-site connecting roads (including an extension of Holoholo Street), and infrastructure to support the proposed development, including a wastewater treatment plant, a potable water well, a regional storage reservoir, and water transmission lines.

TSG intends to serve as the project’s Master Developer, overseeing the subdivision and development of the property. Subdivided residential lots may be sold in bulk to one or more homebuilders, as individual lots, or in a combination thereof.

The proposed single-family homes are intended to serve the primary market, with expected sales prices ranging from approximately \$560,000 to \$825,000 (including lot and home). The term primary market means that the homes are anticipated for primary residency rather than as second or vacation homes that would only be occupied during portions of the calendar year. This places Kula Nei generally in the middle price range of single family lot projects in North Kona with land and ocean views. Existing areas with a similar range of lot sizes include Kona Palisades, Kona Heights, and Kona Coastview near Māmalahoa Highway.

The applicant anticipates that approximately 40 units will be developed per year over a seven year period. Groundbreaking is anticipated in 2010.

The proposed affordable units include single-family or multi-family units ranging in size from 800 square feet to 1,200 square feet of living area.

The applicant anticipates that the affordable housing units' price range will be between \$233,600 and \$360,000 (in 2007 dollars).<sup>1</sup> However, some affordable units may be operated as rental units.

Three alternatives to the proposed residential development have been evaluated as part of the analysis: No Action (no project), a Large-Lot Alternative (20 five-acre residential lots), and a Small-Lot Alternative (530 residential lots averaging 7,500 square feet in size). The EIS also evaluates alternative land uses and locations, and alternatives to the project's infrastructure, including the collection and treatment of the project's wastewater, the provision of potable water, and alternative roadway connections.

## 1.11 NEED FOR THE PROJECT

As an infill housing project in an area characterized by single-family homes, Kula Nei responds to strong current and likely future demand for housing in North Kona. That demand has several bases:

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<sup>1</sup> Based on 2006 Hula Mae range (80% to 140% of annual median income).

- The local economy, based on tourism, is expected to grow, bringing new jobs and demand for housing for the workforce.
- Currently, many of those who work in North Kona commute from outlying districts. Instead of paying high housing prices in North Kona, they pay in long commuting time and high gasoline bills. When more housing becomes available in North Kona, local workers and professionals are likely to move closer to the urban center.
- Buyers include both local residents and others, mostly California residents. Offshore buyers may seek homes for vacation use, regular part-time residence, or retirement.

A market study was conducted for the Kula Nei project in 2006 (Appendix A.) It takes into consideration historical and likely future demand, and the ability of other projects to meet that demand. It concludes that the Kula Nei project lots could sell out in 2014, and the entire project would be built by 2017.

## 1.12 SIGNIFICANT BENEFICIAL AND ADVERSE IMPACTS

The project will result in the development of approximately 270 residential units targeted for the primary market and the affordable housing market. This will help to address the housing demand in West Hawai'i for these types of units. The project will also contribute to an improvement in regional traffic circulation by including the construction of a portion of the Holoholo Street extension, which is identified by the County as being an important part of its strategy to improve traffic conditions in North Kona. The project will add additional traffic to the region's roadways, but will include measures to mitigate its impacts. The project will preserve the alignment of the historic Homestead Road that crosses the Kula Nei property and incorporate it into the project as a pedestrian trail. The project will generate demand for potable water, but will mitigate that demand with the development of a new potable water well, storage, and transmission infrastructure. The project will contribute to a population increase in North Kona, which will increase demand for public services and facilities, but it will also contribute to tax revenues at the state and county level.

## 1.13 SECONDARY AND CUMULATIVE IMPACTS

The Kula Nei project's primary impacts include population growth (the Kula Nei project is estimated to create homes for about 650 people), increased traffic, and demand for potable water and energy. The project's secondary impacts are effects that are induced by these primary impacts, such as the additional jobs created in the economy, and the effects resulting from the Kula Nei residents' demand for goods and services. As a primary market residential development, the cumulative impact of the Kula Nei project will be its contribution to helping meet the demand for market-priced and affordable housing in West Hawai'i. New communities like Kula Nei, O'oma Plantations, and Kaloko Heights help to fulfill the goal of a strong and healthy West Hawai'i economy.

## 1.14 PROPOSED MITIGATION MEASURES

The impacts of the project can be grouped into three categories: impacts to the physical environment; impacts to traffic; and impacts to public services and facilities. To mitigate the project's impacts to the physical environment, in addition to best management practices (BMP) ~~during construction~~ such as fugitive dust control during construction, the project proposes the preservation of a large lava tube alignment across the southwestern portion of the project area, the preservation of significant archaeological sites including identified burials, and the preservation of Homestead Road, which will be incorporated into the project as a pedestrian trail. Storm runoff will be retained on-site during construction through the use of infiltration areas and drywells which will be incorporated into the project design. Individual wastewater collection systems will be utilized by a majority of the residential lots, with the remaining areas serviced by a privately funded and operated wastewater treatment plant.

The project's impacts on traffic will be mitigated through its construction of an extension of Holoholo Street, and its fair share contributions to the installation of traffic signals at the intersections of Holoholo Street/Kaiminani Drive ~~and~~ Kaiminani Drive/Māmalahoa Highway, and at the new intersection of the Holoholo Street extension with Hina Lani Drive.

The project's impacts on public services and facilities will be mitigated by the inclusion of a 3+ acre private park at the project site, and by the project's fair share contributions as required.

## **1.15 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

Development of the subject property as a residential community will permanently alter the use and character of the land. Grubbing will remove vegetation and grading will change the topography of the land. Fauna and avifauna will be temporarily displaced from the land during construction.

Development of the project will require large amounts of aggregate rock for the construction of roadbeds and house foundations, and the production of concrete and asphalt.

Archaeological sites and cultural resources determined to be significant under State criteria will be preserved. Homestead Road will be preserved as a pedestrian trail. Sites identified for data collection will be further analyzed and recorded in an effort to increase our understanding of the historical use of the area. Once this process is completed in accordance with the requirements of the State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources (DLNR) and an approved mitigation plan, those sites together with sites that have been determined to require no further study, will be lost.

Development of the project will require the expenditure of energy in the form of fuel for construction vehicles and equipment and the consumption of natural and man-made resources in the form of construction materials (metal, glass, wood, plastic, etc.). Construction of the project will also require the consumption of potable water. However, some of the water used for dust control will percolate back into the soil while the remainder will evaporate.

The project will require the investment of human labor that might otherwise be employed elsewhere.

The so-called operational phase of the project, that is to say once the project is completed and the homes have been built and occupied, will require an ongoing commitment of potable water, electrical energy, and fuel for privately owned vehicles and motorized equipment.

## 1.16 UNRESOLVED ISSUES

The following issues remain unresolved at the time this document is being prepared:

**Kaloko Heights:** The proposed residential project abutting the south side of Kula Nei has secured State land use reclassification, zoning approval, and bulk-lot subdivision approval. However, the alignment of the Holoholo Street extension across the Kaloko Heights property is unknown. The timing and status of the Kaloko Heights project development is also unknown.

**Homestead Road:** The County and the State disagree over which jurisdiction has ownership and jurisdiction over Homestead Road. The applicant is working with both the County and State to resolve this issue, and they have expressed a willingness to cooperate with the applicant so that the applicant can go forward with its plans for improvements to be made to the said roadway. ~~While it has been determined that the County of Hawai'i owns and has jurisdiction over Homestead Road, it is not known whether the County will grant an easement to Kula Nei for road crossings (Holoholo Street extension and interior loop road) and pedestrian access or will require the roadway property to be purchased.~~

**Kona Community Development Plan:** It is likely that this EIS will be published for public and agency review and comment prior to the publication of the first draft of the Kona Community Development Plan. Thus, the content of the plan is unknown.

**Concurrency Ordinance:** At the time this EIS is being prepared the Hawai'i County Council is considering a bill for an ordinance that would require the concurrent development of project-related infrastructure. It is unknown if the ordinance will be adopted, what its final language might contain, when it might become effective, and if it might impact the Kula Nei project.

**County Roadway Design Standards:** At the time this EIS is being prepared, the roadway design standards that will be applicable to the internal roadway network within the Kula Nei project (as

well as other proposed developments in the vicinity) have not been finalized by the County of Hawai‘i Planning Department and Public Works Department. It is our understanding that discussions regarding the design standards are on-going.

County Council Deferred Action on Rezonings: In early 2007, the Hawaii County Council adopted a resolution calling to defer action on any rezonings prior to adoption of the Kona Community Development Plan. It is unknown when and how this resolution might impact the Kula Nei project.

### 1.17 COMPATIBILITY WITH LAND USE PLANS AND POLICIES

The proposed project is generally compatible with existing land plans, policies, and controls for the affected area. The site of the proposed residential development is designated by the County for Low Density Urban development and by the State for Urban Expansion.

### 1.18 REQUIRED PERMITS AND APPROVALS

**Table 1-1: REQUIRED APPROVALS**

Permit or Approval	What is Needed	Agency	Status
Land Use Boundary Amendment	State Agricultural District to State Urban District	State LUC	Pending completion of EIS
Zone Change	A-5a (Agriculture) to Residential or Project District	County of Hawai‘i Planning Department	Pending State Land Use Boundary Amendment approval
Archaeological Inventory Survey, Data Recovery, Preservation Plan	Approval of archaeologist's work and recommendations	SHPD of DLNR	Inventory survey completed. Data Recovery and Preservation Plan to be prepared pending approval of inventory survey.
Burial Treatment Plan	Approval of archaeologist's recommendations	SHPD of DLNR	Pending approval of inventory survey.
Well Construction-pump	Approval of plans and water allocation by DWS	State Water Commission, DLNR	Pending application
NPDES permit	Approval of plans	State DOH	Pending application
Wastewater Treatment Plant Approval	Approval of plan	State DOH and Hawai‘i County Department of Public Works	Pending zoning approval
Subdivision	Preliminary and Final	County of Hawai‘i Planning	Pending zoning approval

Permit or Approval	What is Needed	Agency	Status
	approvals	Department	
Grading, building, plan approval and other necessary development permits	Approval of plans	County of Hawai i Planning Department	Pending Subdivision approval



# 2 CHAPTER TWO: DESCRIPTION OF THE PROPOSED PROJECT AND ALTERNATIVES

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## 2.1 INTRODUCTION

The Shopoff Group, L.P., a California limited partnership, (hereinafter, “TSG” or “the applicant”) is the applicant<sup>1</sup> for land use permits and approvals necessary for the development of approximately 150 acres of land in North Kona on the island of Hawai‘i (hereinafter, “the property”). TSG proposes the development of a low-density residential subdivision that will ultimately consist of approximately 270 residential market and affordable units (hereinafter, “the project”). The project will include a neighborhood park, community trails and greenbelts, an internal road network, off-site connecting roads, and infrastructure to support the proposed development, including a wastewater treatment plant, a potable water well, a reservoir, and water transmission lines.

TSG intends to serve as the project’s Master Developer, overseeing the subdivision and development of the property. Subdivided residential lots may be sold in bulk to one or more homebuilders, as individual lots, or in a combination thereof.

The project consists of two components: the Primary Project Area and the Accessory Areas. The Primary Project Area includes three tax map parcels totaling approximately 130 acres that together will contain the proposed residential subdivision and appurtenant uses: TMKs 7-3-007:038; 7-3-007:039; and 7-3-009:007.<sup>2</sup>

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<sup>1</sup> TSG represents two legal entities which own various properties included in the Project: TSG Kula Nei, L.P., a California limited partnership (formerly known as Wasson Canyon Investments, L.P.), and Springbrook Investments, L.P., a California limited partnership. TSG is also seeking to acquire additional properties included in the Project and at the time this ~~Draft~~ Final EIS is being prepared TSG has been authorized by those property owners to act on their behalf.

<sup>2</sup> As is the case with many properties in Hawai‘i, lots are sometimes named after a long-time owner. Such is the case at Kula Nei. Parcel 38 is known to kama‘aina families as the “Uncle Kino property.” Parcel 39 is also known as the “Nearon property.” Parcel 7 is known as the “Robert Lee property.” Some of the consultant studies conducted for this EIS reference these names. But for the purposes of this EIS, the properties will be referenced by their TMK parcel number, which corresponds to the last set of digits in the properties’ official TMK number (a five part number referencing island prefix-zone-section-plat:parcel).

The three parcels abut a continuous strip of land extending west (downslope or *makai*) from Hamo Street that is identified as Homestead Road. An approximately 1.8-acre portion of Homestead Road extends between parcels 38 and 39 and abuts the northern boundary of parcel 7. Homestead Road is included for planning and analysis purposes in the Primary Project Area.

For the purposes of this document, any proposed improvements and development that occur within the Primary Project Area ~~is~~ are described as being “on-site”. Information concerning the Primary Project Area is presented in Table 2-1 below.

**Table 2-1: PRIMARY PROJECT AREA**

Tax Map Parcel	Area (acres)	Owner	Proposed Use	Developed By
7-3-007:38	44.905	TSG Kula Nei, L.P.	Residential	Applicant
7-3-007:39	39.420	TSG Kula Nei, L.P.	Residential	Applicant
7-3-009:07	45.667	Springbrook Inv.	Residential	Applicant
Homestead Road	1.8	County Hawai'i	Greenbelt & pedestrian access	Applicant
<b>TOTAL</b>	<b>131.792</b>			

The Accessory Areas consist of portions of 10 tax map parcels surrounding the Primary Project Area, as well as portions of three existing roadways: Māmalahoa Highway, Kinoulou Street, and Old Government Mauka Road. The Accessory Areas represent land that is needed for the development of the proposed well, water reservoirs, and transmission lines, and land that is needed for new roadways to access the Primary Project Area. For the purposes of this document, any development that occurs within the Accessory Areas is described as being “off-site.”

In the case of proposed access roads, because the sizes of the needed roads are known, or a corridor within which a proposed road might be reasonably located can be defined, the physical area that will be impacted by construction can be calculated and can be identified as a portion of a particular tax map parcel.

Similarly, the areas that will be disturbed to allow construction of the proposed well, water reservoir sites, and subterranean water transmission lines have been estimated and can be identified as a portion of a particular tax map parcel. The total land area of the Accessory Areas

that will be used over the long term to support the project is estimated, for the purposes of the analysis in this document, to be approximately 20.6 acres.

In addition, the Accessory Areas (Table 2-2) also include tax parcels which either contain an existing subterranean water transmission line that will be used to deliver potable water to the Primary Project Area or existing roadways that will be temporarily trenched to construct a new subterranean water transmission line. The physical area that will be temporarily impacted by construction is not included in the calculated size of the Accessory Areas. Figure 2-1 summarizes the information presented in Tables 2-1 and 2-2 in graphic form.

**Table 2-2: ACCESSORY AREAS**

Tax Map Key	Area (acres) <sup>3</sup>	Owner	Proposed Use	Developer
7-3-009:por 08	3.0	State of Hawai'i	New Road: Holoholo St. Extension	Applicant
7-3-009:por 57	3.4	Private owner	New Road: Holoholo St. Extension to Hina Lani St.	others
7-3-009:por 61	5.0	Private Owner	New Road: Holoholo St. Extension to Hina Lani St.	others
7-3-046:por.105	1	Private Owner	New Road: Alternative access to Punawale St. if needed	Applicant (if necessary)
<b>Road Subtotal</b>	<b>12.4</b>			
7-3-006:por 35	0.4	Private Owner	New Water Transmission	Applicant
7-3-006:por 36	1.2	Private Owner	New Water Reservoir, Well & Transmission	Applicant
7-3-006:por 37	0.4	Private Owner	New Water Reservoir, Well & Transmission	Applicant
7-3-007:por 42	4.5	Private Owner	New Water Reservoir & Transmission	Applicant
7-3-007:por 43	1.7	Private Owner	New Water Transmission	Applicant
<b>Water Subtotal</b>	<b>8.2</b>			
7-3-007:por 80	n.d.	Private Owner	Existing Water Line	n.a.
Māmalahoa Hwy	n.d.	State of Hawai'i	New Water Transmission	Applicant
Kinoulu Street	n.d.	County of Hawai'i	New Water Transmission	Applicant
Old Government Road Mauka	n.d.	County of Hawai'i	New Water Transmission	Applicant
<b>Water Subtotal</b>	<b>0</b>			
<b>TOTAL</b>	<b>20.6</b>			

n.d. = Not Determined

n.a. = Not Applicable

<sup>3</sup> The area presented for each parcel represents the estimated portion of the parcel that will be impacted by development.

## 2.2 REGIONAL CONTEXT

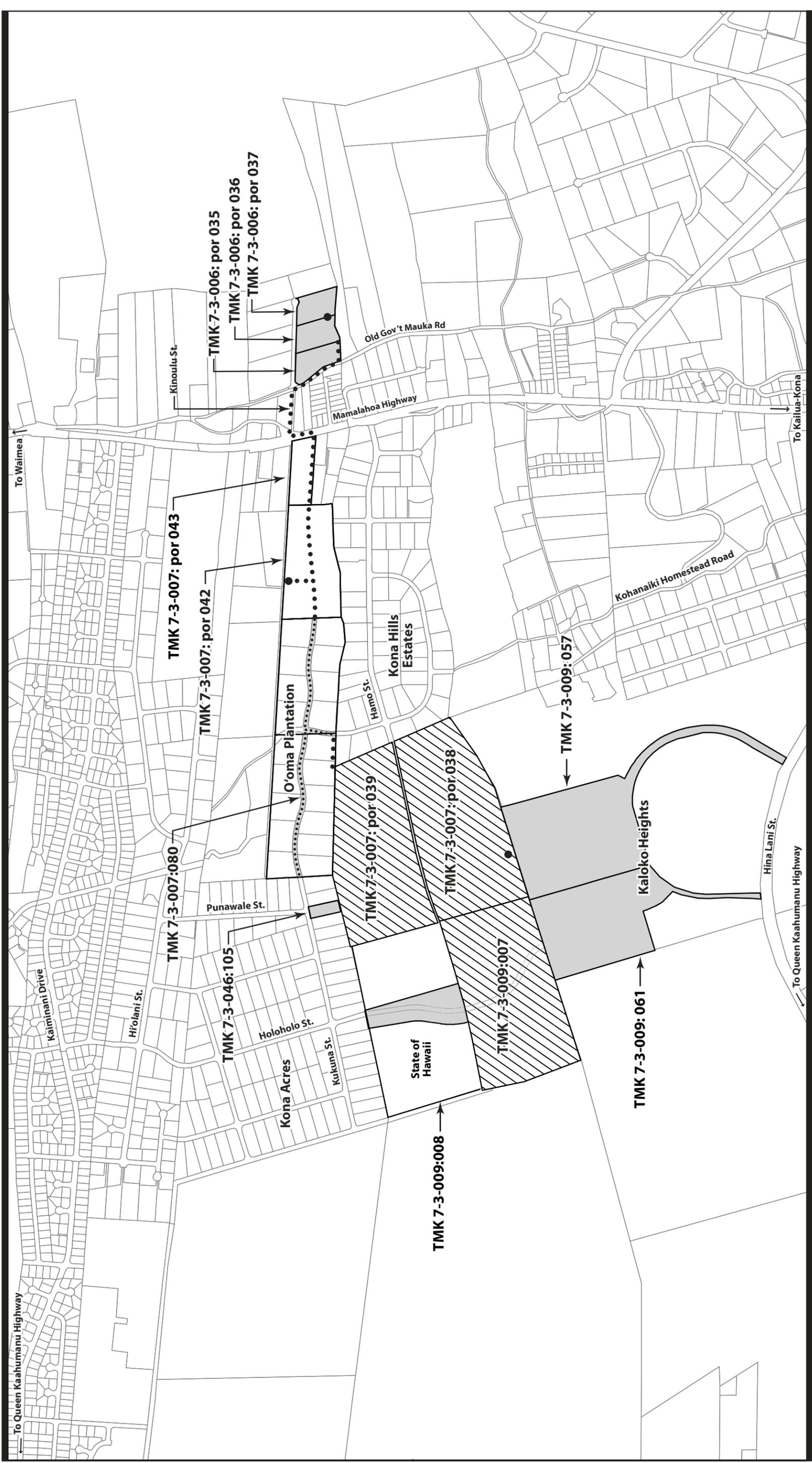
The project is located in the North Kona District on the island of Hawai‘i, approximately 4.1 miles due north of Kailua-Kona. It is situated on the lower west-facing slope of Hualālai and extends in an east-west orientation between the elevations of 740 feet and 1,140 feet above mean sea level (msl). For descriptive purposes, the Primary Project Area consists of three large parcels, each roughly 2,000 feet by 1,000 feet, with two sharing a common long side and the third sharing a short side boundary, creating a flag shaped property.

The Primary Project Area is surrounded on its north, east, and south sides by existing or planned residential subdivisions (Figure 2-1). Moving in a clockwise direction, these include Kona Acres on the northwest side, O‘oma Plantation on the northeast, Kona Hills Estates (upslope) on the east, Koahanaiki Homesteads on the southeast, and Kaloko Heights on the south. The land abutting the western (downslope) property boundary of parcel 7 is vacant land owned by the State of Hawai‘i. Parcel 7 is abutted on the north by a portion of Homestead Road and beyond that by vacant State owned land.

The project is situated within the O‘oma 1<sup>st</sup> and O‘oma 2<sup>nd</sup> *ahupua‘a* in the *kula* portion of the *kekaha* region, on terrain characterized by weathered *pāhoehoe* and ‘*a‘a* lava flows ranging in age between 3,000 and 5,000 years old.

## 2.3 HISTORY OF THE PROPERTY

Based on archaeological surveys of the property conducted for this EIS, evidence suggests that the subject property was used for habitation, agriculture, and water collection activities during the Precontact Era (before 1778 A.D.) and Historic periods (after 1778 A.D.) (Rechtman 2006). Occupation of the area continued throughout the 1800s, but the population steadily declined. In the mid 1800s, much of the land in the region was designated by the Hawaiian government for homesteading. The *kula* lands were used primarily for goat, cattle, and donkey pasturage. However, the sparse population was also able to sustain itself by cultivating sweet potato and taro. Access was provided by trails and poorly maintained roads. As it was in the 1800s, the primary method of travel in the region between 1900 and the late 1940s was by foot, or on horse,



**Figure 2-1**  
**PRIMARY PROJECT AREA AND ACCESSORY AREA**  
 Kula, Hawaii  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007



**LEGEND**

- ..... Existing Water Line
- ..... Proposed Water Line
- ▨ Primary Project Area
- ▩ Accessory Area

0 500 1000  
 SCALE IN FEET

 NORTH



or donkey. After World War II (WWII), retired military vehicles became available to the general public and some of the regional roads were modified to accommodate jeeps. It wasn't until the opening of the Queen Ka'ahumanu Highway around 1973 that public travel across the lower plains and *kula* lands became common. Beginning in the 1960s lands in the region began subdividing for residential use. This process has continued and the former grazing lands of O'oma are now surrounded by existing or planned residential communities.

The Primary Project Area has in recent years been vacant with no active development or formal cultivation activities on the land. Limited cattle grazing has occurred on an intermittent basis on upper portions of the property. The subject properties were acquired by the applicant in 2005 and 2006.

## **2.4 DESCRIPTION OF THE PRIMARY PROJECT COMPONENTS (PREFERRED ALTERNATIVE)**

The applicant's planning for the subject properties has focused upon their development for low density urban use. The proposed development plan represents the applicant's Preferred Alternative for the properties. Following is a detailed description of the Preferred Alternative. Other alternatives are discussed later in this chapter. The remainder of this document is devoted to disclosing the environmental, socio-economic, and cultural impacts that would reasonably be anticipated to occur should the Preferred Alternative or the other alternatives be implemented.

### **2.4.1 Dwelling Units**

The applicant proposes to subdivide the Primary Project Area to enable it to be developed with approximately 270 residential units including approximately 216-220 single-family home sites, as well as the number of affordable units needed to conform to the County's affordable housing requirements. As of this writing, the number of anticipated affordable housing units to be built will be consistent with Hawaii County requirements, with twenty percent of the total units at Kula Nei (approximately 54 single family or multifamily units). The Conceptual Plan for the Kula Nei project is presented as Figure 2-2. Areas shown are preliminary.

The applicant ~~or successor~~ will secure the necessary permits, subdivide the property, and develop the infrastructure needed for the residential subdivision.

At this point in time, TSG intends to serve as the project's Master Developer, overseeing the subdivision and development of the property. Subdivided residential lots may be sold in bulk to one or more homebuilders, as individual lots, or in a combination thereof.

The proposed single-family homes are intended to serve the primary market, with expected sales prices ranging from approximately \$560,000 to \$825,000 (including lot and home). The term primary market means that the homes are anticipated for primary residency rather than as second or vacation homes that would only be occupied during portions of the calendar year. This places Kula Nei generally in the middle price range of single family lot projects in North Kona with land and ocean views. Existing areas with a similar range of lot sizes include Kona Palisades, Kona Heights, and Kona Coastview near Māmalahoa Highway.

The applicant anticipates that approximately 40 units will be developed per year over a seven-year period. Groundbreaking is anticipated in 2010.

While the final site plan for the project may be revised, the project is presently designed with the lowest density lots located at the *makai* (western) end of the project ~~and~~ on steeper slopes, and higher density/smaller lots along the Holoholo Street extension and loop road ~~and~~ on gentler slopes.

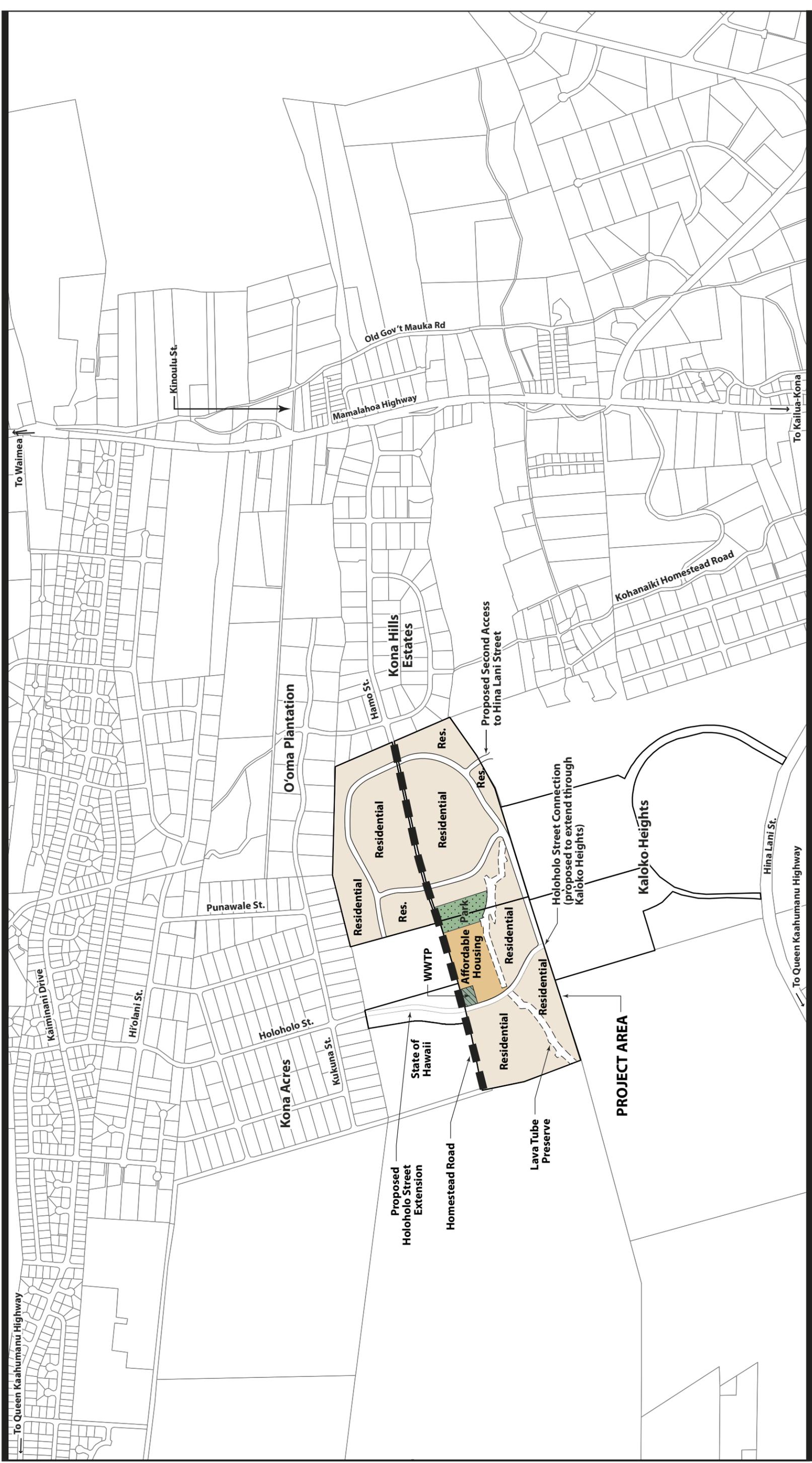
The proposed affordable units include single-family or multi-family units ranging in size from 800 square feet to 1,200 square feet of living area.

The applicant anticipates that the affordable housing units' price range will be between \$233,600 and \$360,000 (in 2007 dollars).<sup>4</sup> However, some affordable units may be operated as rental units.

Affordability will be based on Federal, State, and County standards and guidelines. The definition of affordability is based on a family of four. In 2006, the annual median income for a

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<sup>4</sup> Based on 2006 Hula Mae range (80% to 140% of annual median income).



**Figure 2-2**  
**KULA NEI CONCEPT PLAN**  
 Kula Nei  
 North Kona, Hawaii  
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 September 2007

Area take offs (acres)	Area take offs (acres)
Primary Market Residential	94.0 ac
Affordable Housing	6.0 ac
Park (includes 1.3 acre leach field)	3.6 ac
WWTP	0.6 ac
Lava Tube Preserve	5.3 ac
On-Site Reservoir	0.4 ac
Homestead Road	1.8 ac
Road Rights-of-Way	19.8 ac

**LEGEND**

- Primary Market Residential
- Affordable Housing
- Park
- WWTP
- Petition Area
- Homestead Road

0 500 1000  
 SCALE IN FEET

NORTH





family of four in the County of Hawai'i was approximately \$55,300. The County defines affordability as a lot or dwelling unit which is affordable to qualified households earning no more than one hundred and forty percent (140%) of the median income for a family of four in the County of Hawai'i. As established by the County's affordable housing guidelines, assuming a 30-year mortgage loan at 4.450% Hula Mae interest rate with a total housing expense of 28% and 5% down, a family of four with a median annual income of \$55,300 in the County of Hawai'i can afford a housing unit costing \$269,600. According to the County's affordable rent guidelines, the same family can afford to spend \$1,244 a month on housing (rent and utilities). Monthly rent levels are assumed to include the cost of water, sanitary sewage service, electricity and gas where applicable.

#### **2.4.2 Internal Roadways and Pedestrian Walkways**

Kula Nei's internal roadways serving through-traffic will be generally designed as neighborhood streets with 50-foot rights-of-way. The County of Hawai'i's Planning Department has not yet determined at the time of this writing the design detail of Kula Nei's neighborhood streets, but the applicant will comply with public road design standards. All streets will accommodate pedestrian use, either with sidewalks or shoulders. The affordable housing area may have private streets.

Holoholo Street, the main road through the project, will run in a north-south direction across parcel 7 and provide linkage to an on-site loop road that will serve parcels 38 and 39. The Holoholo Street extension and the loop road are proposed to be designed as neighborhood streets. The remaining roads within the Primary Project Area will be designed as minor streets and cul-de-sacs without sidewalks. They will each consist of a 50-foot right-of-way with two 10-foot paved lanes, 6-foot wide shoulders, and 9-foot grassed drainage swales.

Midway across parcel 7, the extended Holoholo Street crosses a collapsed segment of lava tube. The Primary Project Area has been surveyed with ground penetrating radar to determine the location and limits of lava tubes, including an approximate 2,500-foot long tube extending from the southwestern corner of parcel 7 in an arc across the center of parcel 7 and terminating in the southwestern corner of parcel 38. The lava tube likely extends beyond the boundaries of the

Primary Project Area. The proposed routing of the extended Holoholo Street purposefully crosses the collapsed portion (approximately 120 feet wide) of the lava tube in order to minimize impact upon the intact portions of the subterranean lava tube. Please refer to Section 3.7 of this document for a discussion of the biological surveys of the lava tubes within the project area.

The portion of Homestead Road that bisects the Primary Project Area will be preserved as a cultural resource to provide pedestrian access along the length of the project area. Breaches in the walls that line Homestead Road will be required for roadway crossings and pedestrian access. Dry-stacked lava rock walls delineate the boundaries of Homestead Road, and its natural surface is weather-worn and water eroded. It is interspersed with vegetation growth including trees, grass, weeds, and shrubs.

The proposed Holoholo Street extension and the project's internal loop road will cross Homestead Road at three locations, as shown in Figure 2-2. Upon approval of the Na Ala Hele program and the SHPD of the DLNR, the Homestead Road corridor will be cleared of vegetation and minor grading will be conducted to improve portions of the corridor with uneven surfaces or loose rubble. No motorized vehicles will be permitted on Homestead Road, with the exception of the roadway crossings and the use of equipment needed for grounds keeping and maintenance. Maintenance and upkeep of the corridor will be the responsibility of the Home Owner's Association (HOA).

### 2.4.3 Parks

A community park of approximately ~~three~~ 4.4 acres is proposed to be centrally located within the Primary Project Area. The park abuts the south side of Homestead Road. The park will be privately owned and maintained by the HOA, and will serve as a recreational amenity for home owners and renters of the Kula Nei homes and their guests. The park is envisioned as a passive recreational area and may include open turf areas, a tot lot, park benches, and walking paths connecting to the Homestead Road pedestrian trail. ~~No restroom facilities or other buildings are contemplated.~~

#### **2.4.4 Storm Water and Drainage**

Storm water runoff from impervious areas will be collected through a system of swales, catch basins, and pipes which will transport storm water runoff to drywells and/or infiltration areas. This is a typical practice in North Kona and is consistent with policies of the County of Hawai'i's Department of Public Works. The generally high permeability of the existing soils in the area is evidenced by the absence of any natural storm water channels or gullies in the vicinity of the project area. Infiltration areas will be located in open spaces where practical. Drywells will be constructed within roadway rights-of-way as needed. A typical drywell would be approximately eight feet in diameter and six to eight feet deep. Its surface opening would be covered with a steel grating.

#### **2.4.5 Potable and ~~Non-Potable~~ Water**

The project's potable water system will be constructed in accordance with the 2002 State of Hawai'i Water System Standards. The proposed system, both off-site and on-site within public rights-of-way, will also meet County standards. The development of needed wells, reservoirs, and transmission lines is being planned in coordination with other developers in the immediate area and region. The projected average water demand generated by the proposed development is approximately 120,000 gallons per day (gpd). A minimum reservoir storage capacity of 300,000 gallons is required for the project. (See Appendix B for water system calculations.) All single and multi-family residences proposed at Kula Nei, as well as the proposed park, will be served by the potable water system to be built by the applicant. The applicant is currently negotiating an agreement with the County Department of Water Supply for commitments in exchange for water infrastructure. ~~Treated wastewater effluent from the wastewater treatment plant proposed to be constructed on-site by the applicant will be discharged to a leaching field in the proposed park or may be used for irrigation at the proposed park and/or other common areas.~~

##### **2.4.5.1 Off-site Water System**

The potable water source and storage for the project will be provided by a proposed well and a reservoir to be located on TMK parcels 7-3-006: por. 036 and por. 037, approximately 4,700 feet

upslope from the eastern boundary of parcel 39, about 1,100 feet *mauka* of Māmalahoa Highway. See Figure 2-3.

The capacity of the proposed reservoir will be between 1.0 and 2.0 million gallons (mg) (as determined in consultation with the DWS). A new 12-inch water line across parcel 7-3-006:035 will connect the new reservoir to an existing 12-inch water line along Māmalahoa Highway. A second new 12-inch water line will extend westward (downslope) from the Māmalahoa line across parcels 7-3-007:043 and 7-3-007:042 and connect to another existing 12-inch water line in the O‘oma Plantation project area (parcel 7-3-007:080). The existing line is located under a paved roadway that is being dedicated to the County by the O‘oma Plantation developer. A new 12-inch branch line will then complete the off-site system by linking the existing O‘oma Plantation line to the Primary Project Area.

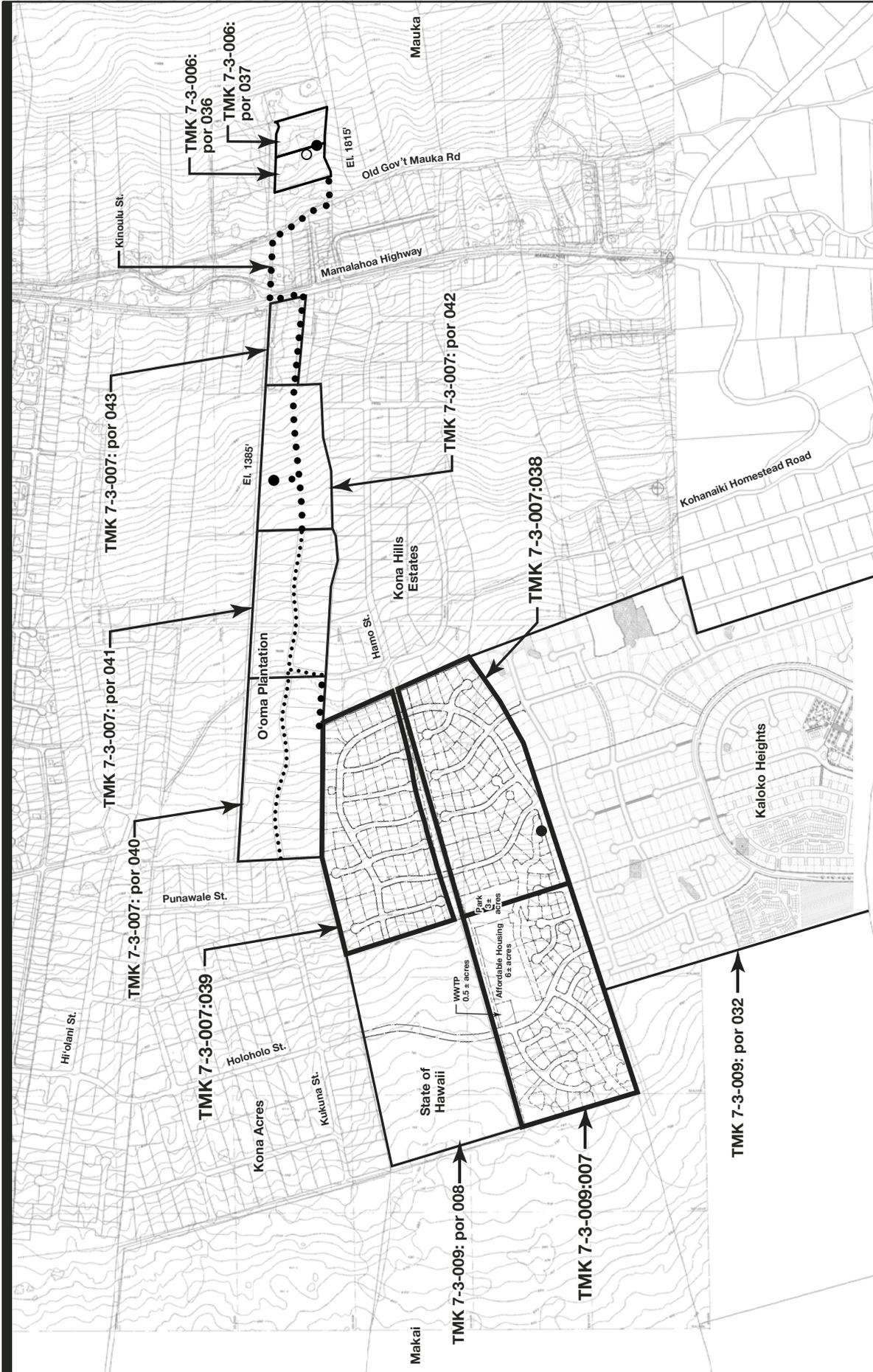
As explained in Section 2.1, the various off-site parcels described above constitute part of the project’s Accessory Areas (parcels 35, 36, 42, 43, and 80).

The off-site water system improvements for the project will be constructed by the applicant for dedication to the County of Hawai‘i.

#### **2.4.5.2 On-site Water System**

The potable water system will consist of 8-inch and 12-inch water lines in the streets within the Primary Project Area to provide service to the Kula Nei lots. See Figure 2-4. The water system will connect to the existing 12-inch water line under Alanui Kauila Street in the O‘oma Plantation subdivision via easements across parcels 7-3-007:043 and 042, as discussed in Section 2.4.5.1.

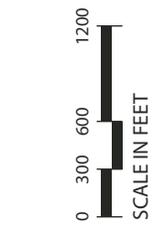
The proposed development falls within the 950-foot, 1,050-foot, and 1,385-foot pressure zones. Because pressure reducing stations can only be used to separate every other pressure zone, a 100,000 gallon reservoir will be constructed within the Primary Project Area to separate the 950-foot zone from the 1,050-foot zone. The water distribution system will be looped in order to provide adequate pressure and to enhance system reliability. The distribution pipe sizes are



**Figure 2-3**  
**PROPOSED OFF-SITE WATER SYSTEM**  
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**LEGEND**

- Proposed Water Line
- ..... Existing Water Line
- Well Site
- Reservoir Site
- Project Area







**Figure 2-4**  
**PROPOSED ON-SITE WATER SYSTEM**  
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**Belt Collins**  
 NORTH

0 400 800  
 SCALE IN FEET



based on County standards. The size and locations of laterals connecting to individual lots will be determined during the design phase of the project.

#### **2.4.6 Wastewater Collection and Treatment**

The projected average wastewater flow generated by the project is approximately 81,000 gpd. For the purposes of wastewater collection and treatment, the Kula Nei project is divided into two wastewater collection areas as depicted in Figure 2-5. The first area will be served by a privately owned and operated on-site wastewater treatment plant (WWTP) to be constructed by the applicant, in compliance with State DOH requirements. The WWTP will be located on an approximate half-acre site adjacent to the Holoholo Street extension at the point where it enters Kula Nei from the north. The WWTP service area consists of approximately 14 acres abutting the eastern (upslope) side of the Holoholo Street extension that bisects parcel 7. This area includes the affordable housing site, the 23 single-family lots immediately south of the affordable housing, and the community park that abuts it. The remainder of the Primary Project Area constitutes the second area.

~~The WWTP will require an additional 2 acres as an on-site leaching field for effluent disposal (if the effluent is not utilized for irrigation at the proposed park and/or other common areas). Average daily flow to the WWTP is projected to be approximately 25,200 gpd. Treated wastewater effluent from the wastewater treatment plant proposed to be constructed on-site by the applicant will be discharged to a leaching field in the proposed park or may be used for irrigation at the proposed park and/or other common areas.~~

The remainder of the Kula Nei project (the second wastewater collection area) will be served by individual wastewater systems (IWS). Each lot will contain a septic system that includes a tank and a leaching field on the lot that it serves. The IWS will be designed to comply with all applicable State DOH regulations.

#### **2.4.7 Solid Waste**

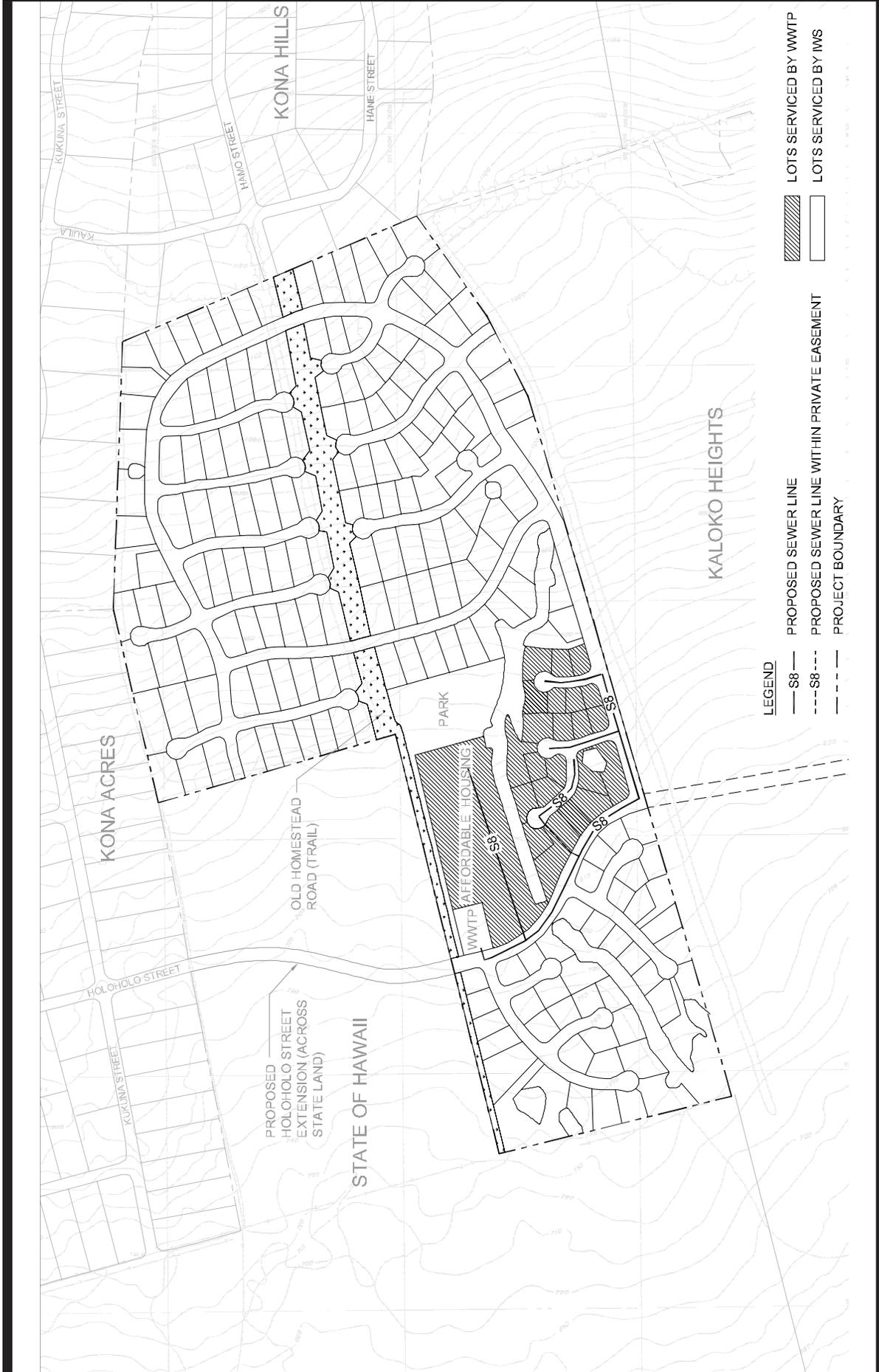
The County of Hawai'i requires all solid waste to be removed from buildings and residences and disposed of at an approved solid waste disposal facility. The destinations for solid waste

generated at Kula Nei will include transfer stations, composting facilities, recycling centers, and the West Hawai'i landfill. The following construction items or materials that will be recycled to the extent practicable include green waste (processed and used on site), wood waste (processed with green waste where practicable, depending on the type of wood and ability to chip, and used on site), cardboard (recycled off site), and metals and glass (recycled off site). During the operational or occupancy phase, participation in recycling programs will be the responsibility of individual homeowners.

The Kula Nei project will be constructed over a seven-year period. A Solid Waste Management Plan has been prepared for Kula Nei and is presented in Appendix B. Quantities of solid waste have been estimated for both construction and operational phases of the proposed development. The construction phase will occur over the entire seven-year period, because not all lots will be sold at the same time and home construction will be phased according to the individual lot owners' needs. The operational phase of development refers to the time at which facilities have been constructed and are available for occupancy. The construction and operational phases will, therefore, overlap, as construction of later portions of the Kula Nei project will continue while earlier portions are completed and occupied. Table 2-3 summarizes the volume of solid waste that is anticipated to be generated by the project. The data presented in the table is derived from the project's Solid Waste Management Plan (Appendix B).

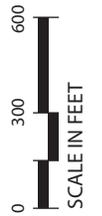
**Table 2-3: SUMMARY OF WASTE LANDFILLED AND RECYCLED BY YEAR  
(tons per year)**

TYPE	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017 and Beyond
Construction	128 - 224	132 - 229	132 - 229	128 - 224	132 - 229	125 - 218	112 - 195	
Operational		177	353	480	634	814	986	1,140
Total Landfilled	64 - 112	197 - 246	328 - 377	420 - 468	536 - 585	666 - 713	788 - 830	846
Recycled	64 - 112	111 - 161	156 - 206	188 - 236	228 - 278	272 - 319	213 - 352	294



**Figure 2-5**  
**SEWER PLAN—OPTION 2: ON-SITE WWTP/IWS**

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The volume of wastewater solids (biosolids or sludge) generated by the WWTP is considered to be negligible in terms of landfill volume that final disposal of the solids will consume. Wastewater solids will be trucked from the WWTP as liquid biosolids by a tanker truck, at the rate of one truck per week at full buildout. The biosolids will be taken to the County Kealakehe WWTP for further processing. Once all liquid has been removed there, the remaining solids will be disposed of at the West Hawai'i County landfill.

#### **2.4.8 Electrical**

The Kula Nei subdivision project consists of approximately 270 residential market and affordable units, a park site, an off-site deep well and reservoir, and the operation of a 25,200 gpd WWTP. The anticipated demand for the project is 1,603 kilowatts, meaning the project's electrical system must have a capacity of 1,603 kilowatts.

The power capacity for the island of Hawai'i is 220 megawatts with a present maximum demand of 200 megawatts. Service for this project is anticipated to be provided by the existing Hawaiian Electric Light Company, Inc. (HELCO) Huehue Substation, which has a capacity of 7.5 megawatts. This project will require an upgrade of capacity from 7.5 megawatts to possibly 10.0 megawatts at the Huehue Substation.

HELCO has overhead facilities serving nearby subdivisions, and anticipates extending their 12-kilovolt circuits for the Kula Nei subdivision site from Kukuna Street to the subdivision via the primary access road. Step down transformers will convert 12 kilovolt to user voltages of 120/240 volt single phase.

The upgrade of the Huehue Substation and the extension of existing electrical distribution systems will not create adverse conditions for HELCO. These improvements, when planned, are part of HELCO's normal expansion responsibilities.

#### **2.4.9 Telecommunications**

The Kula Nei Subdivision can be served by Oceanic Time Warner Cable. Oceanic Time Warner Cable has existing facilities in the Kona Acres area that will be extended to the project area via

the Holoholo Street extension. They have sufficient capacity to provide cable television service to this project and will extend their fiber trunking to serve the new area at their expense. They presently offer television, broadband internet service, and residential telephone service in this general project area.

Hawaiian Telcom has an existing system with the capacity to serve the project along Kukuna Street. They propose to extend their systems from Pole 10 on Kukuna Street via new support structures located along the Holoholo Street Extension to the subdivision entry in the vicinity of the Affordable Housing site.

#### **2.4.10 Landscaping**

Landscaping standards for individual single-family residential lots will be established by covenants, conditions, and restrictions (CC&Rs) and enforced by the Kula Nei HOA. Native plants and drought-tolerant landscaping will be encouraged for selected areas.

The grounds surrounding the affordable units will likely be treated as common areas to be landscaped by a third party under a maintenance agreement with the Kula Nei HOA. It is anticipated that the common areas will be landscaped with grass lawns, trees, and shrubs, as will the adjacent community park. The use of native drought tolerant plant species in common areas will be encouraged wherever practicable.

Treated effluent from the proposed wastewater treatment plant will be disposed of at the nearby privately owned park in accordance with standards of the State DOH and Hawai'i County. If this treated effluent is used for irrigation at the park, its use must comply with applicable treatment and disposal standards.

#### **2.4.11 Use of Public Land**

The Primary Project Area abuts Homestead Road, a paper roadway that is either under the state's or county's jurisdiction ~~roadway that has been recently determined to be a county-owned public highway under the jurisdiction of the County of Hawai'i.~~ At the time of the writing of this EIS the applicant intends to request that the portion of Homestead Road that borders parcels 38, 39,

and 7 be quitclaimed by the County to the applicant, allowing the applicant to take over responsibility for its maintenance and maintain it as a public trail. As previously discussed, Homestead Road is proposed for use as a public pedestrian trail. Improvements will be limited to minor grading to improve pedestrian safety; removal of trees, shrubs, and weeds; landscaping; the placement of a crushed rock path; and periodic maintenance to control the growth of vegetation over the long term. Homestead Road is not intended to be used for motorized transportation.

## **2.5 DESCRIPTION OF THE ACCESSORY AREA COMPONENTS**

As briefly discussed in Section 2.1, the Kula Nei project includes the three properties that comprise the Primary Project Area to be subdivided for the development of single-family residential lots, affordable multi-family housing units, and appurtenant facilities including a community park, WWTP, roadways, and utilities.

Because the project must rely upon additional properties in the vicinity and surrounding the Primary Project Area for connection to the regional infrastructure system, including roadway connections and regional water infrastructure, the impact of the project on these so-called Accessory Areas must be disclosed and evaluated as part of this EIS. Table 2-2 summarizes the Accessory Areas. The Accessory Areas include ten separate properties and portions of three existing roadways. For discussion purposes, they are grouped into two primary components: roadways and water.

### **2.5.1 Off-Site (Regional) Vehicular Access**

Access to the project area will be provided by an extension of Holoholo Street from Hina Lani Street through a portion of a proposed subdivision known as Kaloko Heights (TMK 7-3-009:057), as shown on Figure 2-6. Two additional access routes are contemplated. One will be from Hina Lani Street through Kaloko Heights, through parcel 7-3-009:061. The other will be from Kaiminani Street through the Kona Acres and across undeveloped State-owned land immediately North of parcel 7 (TMK 7-3-009:008), by way of a planned Holoholo Street extension to be constructed by the applicant.

## 2.5.2 Water Wells and Transmission Lines

As discussed in Section 2.4.5, a potable water source and storage for the project will be provided by an off-site water system that includes a new well and a 1.0- to 2.0-mg reservoir to be located on TMK parcel 7-3-006:036 and 037; a new 12-inch water line across parcel 35 which will connect the new reservoir to an existing 12-inch water line along Māmalahoa Highway; a second new 12-inch water line that will extend westward (downslope) from the Māmalahoa line across parcels 43 and 42 and connect to another existing 12-inch water line under the collector road in the O'oma Plantation subdivision (parcel 80); and a new 12-inch branch line will then complete the offsite system by linking the existing O'oma Plantation line to the Primary Project Area. Figure 2-1 depicts the Accessory Areas proposed for both the roadway system and potable water system.

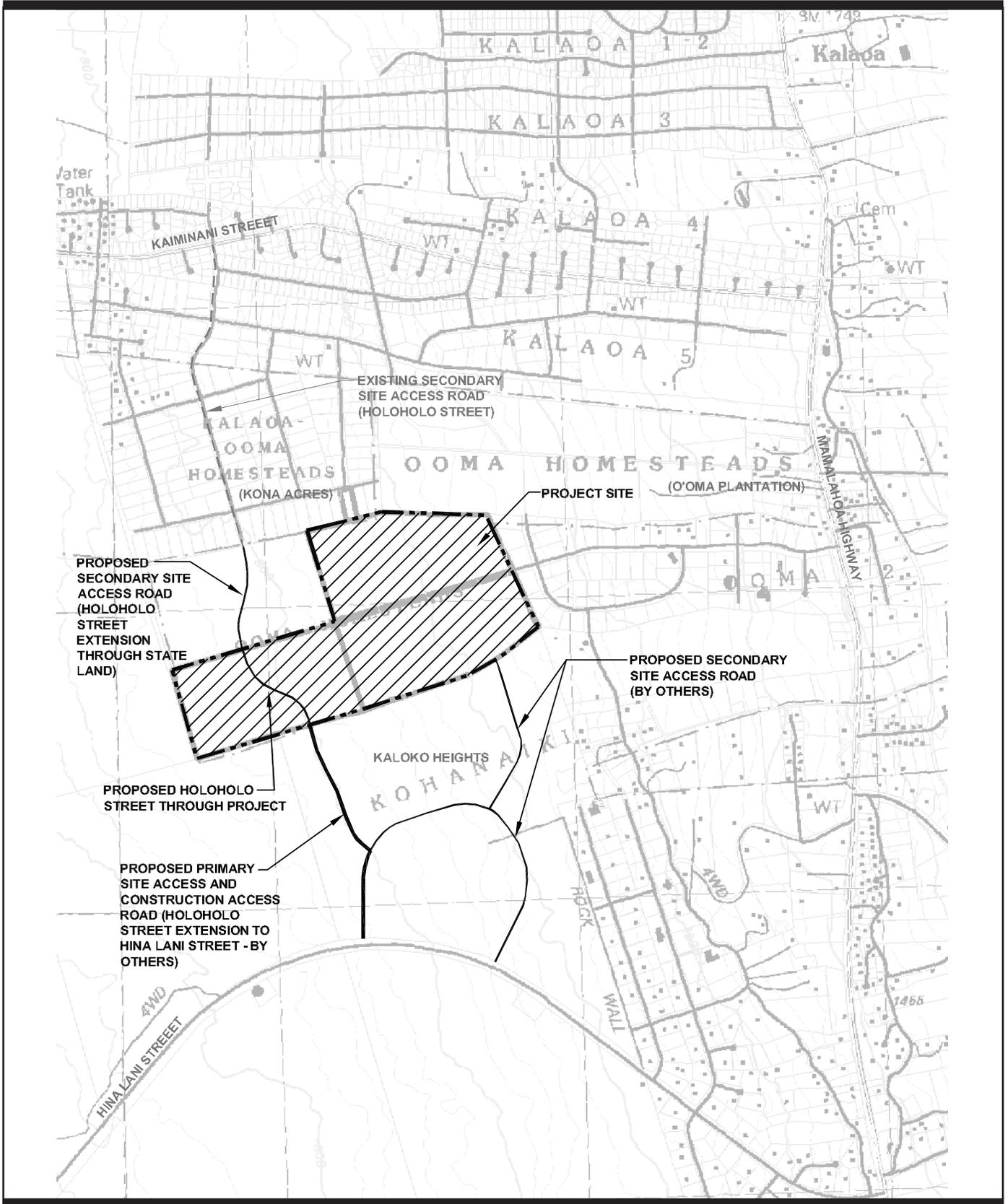
## 2.6 ALTERNATIVES ANALYSIS

The project reflected in this EIS represents a Conceptual Plan (Preferred Plan) that has been developed over a period of nearly a year, based upon technical studies, as well as preliminary input from governmental agencies and surrounding land owners. At the heart of the planning process is an effort to understand the physical, environmental, and cultural character of the land and then adapt a land use plan to the setting that best fulfills the intent of the State and County's land use policies for the region and the applicant's development objectives.

This section presents and analyzes the impacts of alternatives that have been considered during the planning process. The remainder of this EIS is devoted to disclosing and analyzing the impacts of the Preferred Alternative.

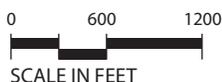
### 2.6.1 No Action Alternative

The No Action Alternative would result in the properties remaining vacant and unused. Following is a summary of the impacts resulting from No Action:



**Figure 2-6**  
**PROPOSED OFF-SITE ACCESS**

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Land Use Policy. The State's West Hawai'i Regional Plan, as well as both the County General Plan and the Keāhole to Kailua Development Plan, designated the project area and the surrounding region appropriate for urban expansion. The General Plan's Land Use Pattern Allocation Guide Map designates the property as Low Density Urban. Retaining the project area as vacant open space is contrary to the policies of the State and County.

Soils, Topography, and Drainage. There would be no significant impact upon the character of the soils, the topography of the area, or the existing drainage patterns. If no vegetation control occurs, vegetation on the project area would mature, die, and eventually contribute to greater soil accumulation on site. The roots of large shrubs and trees will continue to fracture the lava, also contributing to more soil production. However, increased canopy provided by tree growth would likely mitigate the effects of rain on surface erosion. Surface runoff would likely be unaffected by vegetation growth. Uncontrolled vegetation will obscure and eventually disrupt known archaeological and culturally significant sites. Vegetation growth would likely be dominated by aggressive ~~evasive~~-invasive species that could contribute to accelerated growth of ~~evasive~~ invasive species in surrounding areas due to the continued presence of seed and spore stock.

Water Resources/Water Quality. No well would be needed for the project and groundwater resources would therefore not be used. The project area would not contribute to the expansion of the County's potable water system in the region, and production of new potable water resources would be left to other private and public entities.

Flora and Fauna. Flora would remain undisturbed and would be allowed to flourish with invasive species likely dominating over endemic species. The project area would likely function as a habitat for avifaunal and faunal populations. As some fauna are considered to be pests (pigs, rats, mice, feral cats, goats, etc.), the presence of a large vacant area in the midst of surrounding residential subdivisions might be considered to constitute a nuisance from the point of view of vector control. This concern may be balanced to some degree with the undeveloped character that the property would provide.

Archaeology and Cultural Resources. While archaeological and cultural resource inventories conducted for the Kula Nei project have contributed to a greater understanding of the extent of these resources, data recovery and preservation of significant sites would not occur. As described above, uncontrolled vegetation growth would eventually lead to the gradual loss of these sites and decreased accessibility.

Traffic and Transportation. The generation of additional traffic would not occur, which is a positive effect. However, this benefit would also be offset by the loss of the current opportunity to improve regional vehicular circulation through the privately-funded construction of the proposed Holoholo Street extension. At some future point in time, continued regional development in the area surrounding the property might result in some other private or government entity proposing to construct a new roadway across the property. However, until that happens, the lack of connectivity will place a greater burden on existing roadways and area residents will be left with circuitous routes to their desired destination. The Holoholo Street extension is part of the County's vision for a series of mid-level connector roads and without the Kula Nei project, the connectivity would not be complete.

Infrastructure, Power, and Communications. The No Action alternative would create no additional demand for potable water, wastewater collection and treatment, electrical utilities, or telecommunications services.

Visual. The property would remain undeveloped. Over the long term, the visual character of the property would change as trees mature and aggressive invasive plant species assert themselves.

Public Services. Police, fire, and emergency services would not be needed. Emergency vehicle access to existing communities will remain unchanged as no new connector roadways would be constructed.

Population. The population of the region would be unaffected by the property. However, anticipated population growth in the region would continue and the corresponding demand for housing would have to be satisfied elsewhere.

Socio-Economic. The anticipated \$80-million investment anticipated for the Kula Nei project and its related tax revenues would not materialize. West Hawai'i's need for additional housing inventory near the urban center, supporting quality of life for residents and the overall economy, would remain. While other projects will address this need, they are not presently expected to match the current and anticipated demand. Retaining the property as vacant open space is inconsistent with land use policies of the State and the County. Finally, if allowed to remain vacant, no affordable housing would be built at the property.

Inventory of Agricultural Land. The land would remain available for agricultural development. However, while the project area is classified as Agricultural by the State LUC, it is designated for Low Density Urban by the Hawai'i County General Plan. As analyses of the project area's soils and agricultural potential indicate that the area is not considered to be prime agricultural land, its long-term productivity will be largely dependent upon the willingness of the State, the County, or a private entity to invest in the property for agricultural development. No evidence of interest in agricultural investment in this property has arisen to date. Also, given the fact that the property is surrounded on three sides by existing and proposed residential subdivisions and is not currently being used for agriculture, agricultural uses of the Kula Nei property will be limited to some degree by the impacts of the activities. For example, concentrated animal husbandry activities such as a pig farm, chicken farm, or dairy would likely not be embraced by surrounding residents due to odor and vector control issues.

### **2.6.2 Large-Lot Alternative**

From the perspective of site planning, the number of residential lots that can be developed on a given property are influenced by several factors, including slope and topography; physical constraints such as archaeological features, geologic anomalies (lava tubes or formidable rock formations); biological constraints such as significant habitat; road access and design; consistency with surrounding regional character; governmental requirements (such as on-site affordable housing requirements); and existing land use regulations. These factors must be balanced with the land owner's objectives and capabilities (availability of investment capital, desired time for return on investment, etc.). Thus, while an almost infinite number of alternative site plans can be devised, once the characteristics of the land, the abilities of the applicant, and

the policies of controlling governmental agencies are all taken into account, the range of practical alternatives is quickly reduced to a manageable number.

This section reviews the likely impacts of a development on the subject property that would contain larger lots than those presented in the Preferred Alternative. Based upon the aforementioned considerations, the 130-acre Kula Nei property could be feasibly developed with approximately 20 five-acre lots, which would be consistent with its present zoning (Ag-5a). The remainder of the property would be devoted to access roads. Following is a summary of the impacts resulting from the Large-Lot Alternative:

Land Use Policy. The State's West Hawai'i Regional Plan, as well as both the County General Plan and the Keāhole to Kailua Development Plan, envisions the project area and the surrounding region appropriate for urban expansion. Restricting development of the property to an agricultural subdivision with 5-acre lots would be contrary to these policies because it would underutilize the property.

Soils, Topography, and Drainage. The project's impacts upon soils, topography, and drainage would be similar to the Preferred Alternative because although the unit count would be less, the development area would be the same.

Water Resources/Water Quality. While a large-lot subdivision would be expected to require less potable water because of its lower residential population, experience dictates that larger lots tend to yield larger and more expensive homes. The owners of these homes are financially capable of greater investment in the landscaping of the lot, and consequently, the individual unit (home) potable water demand for landscape irrigation, water features, and recreational amenities such as swimming pools can be significantly higher than smaller lot subdivisions.

Flora and Fauna. The impact of a large-lot subdivision development on flora and fauna would be little different than the impact of the Preferred Alternative. Both alternatives would result in vegetation of the entire project area. However, a large-lot subdivision would likely result in a larger net area devoted to landscaping than the Preferred Alternative.

Archaeology and Cultural Resources. As the Preferred Alternative is preserving significant archaeological sites, the impact of a large-lot subdivision on archaeological and cultural resources would be essentially the same as the Preferred Alternative.

Traffic and Transportation. Traffic impacts would be less than the Preferred Alternative because the resident population would be smaller. A low-density development will generate less traffic. To the extent that large lots would yield a certain number of luxury homes that might be used as second homes, the impact on peak hour traffic may also decline. Part-time occupancy equates to a lower number of vehicular trips on an annual basis. Finally, developing the property under its present zoning would result in no extension of Holoholo Street.

Infrastructure, Power, and Communications. The infrastructure demands for the Large-Lot Alternative would be lower than the Preferred Alternative. Lower densities would lessen demand for sewer service. Although larger homes typically require more electrical power, the cumulative increase would not likely be equal to the electrical energy requirements of the Preferred Alternative.

Visual. The visual impact of the Large-Lot Alternative would be less than the Preferred Alternative. Residential development on 5-acre agricultural lots would require that the lots be devoted to agricultural use, which would contribute to an increased open space over the amount provided by the Preferred Alternative.

Public Services. The demand for public services would be less for the Large-Lot Alternative than the Preferred Alternative. Lower densities result in lower population and less demand for educational and recreational facilities; and for fire, police, and emergency services than higher density projects. There would be no public trail and no public park.

Population. The population of the Large-Lot Alternative would be less than half of the projected population of the Preferred Alternative.

Socio-Economic. The socio-economic impacts of the Large-Lot Alternative include issues related to owner-occupancy and land value. While 5-acre agricultural lots may be attractive to Hawai'i residents as well as non-residents, they would more likely than not be owner-occupied.

However, the total value of the agricultural lots would be less than the total value of smaller residential lots in the urban district. With fewer homes, the value of the developed residential area would be less than with the proposed 270 units. As a result, the County of Hawai‘i’s real property tax revenues from the site would be lower for the Large-Lot Alternative than for the Preferred Alternative. In addition, developing the property as a large-lot agricultural subdivision would not likely result in the provision of affordable housing units.

Inventory of Agricultural Land. Development of the Kula Nei property under the Large-Lot Alternative would result in the same impact to agricultural land as the Preferred Alternative. While the lands that are designated Agricultural by the State LUC would be removed from the inventory of available agricultural land, their contribution to agricultural productivity is questionable because of 1) their marginal quality, and 2) their County General Plan classification for Urban Expansion. Thus, the development of the Kula Nei lands for residential development is not considered to have a significant effect upon agricultural activities in the Kona region or elsewhere on the island of Hawai‘i.

### **2.6.3 Small-Lot Alternative**

Under the Small-Lot Alternative, the 130-acre property could yield approximately 530 lots of approximately 7,500 square feet in area. This assumes that approximately twenty-five percent of the total area would be required for access roads and that a 3- to 5-acre WWTP site would be necessary. The Small-Lot Alternative was restricted to single-family homes because a project consisting of only multi-family units is not believed to be consistent with the existing character of the surrounding community, and therefore, would not be approved by State and/or County officials.

Following is a summary of the anticipated impacts resulting from the Small-Lot Alternative:

Land Use Policy. The State’s West Hawai‘i Regional Plan, as well as both the County General Plan and the Keāhole to Kailua Development Plan envision the project area and the surrounding region appropriate for urban expansion. Increasing the development density on the property would be consistent with these policies.

Soils, Topography, and Drainage. The Small-Lot Alternative project's impacts upon soils, topography, and drainage would be greater than the Preferred Alternative. Although the development area would be the same, the sloping topography of the Kula Nei property would require that each smaller lot accommodate the slope change through the construction of retaining walls. Larger lots are able to accommodate sloping land better than smaller lots because there is greater flexibility in designing and locating the home on the property. For smaller lots, the slope of the property has to be transformed into a flat terrace with a retaining wall on either the high side or low side, or perhaps both. ~~The result is that~~ Therefore, a small-lot subdivision on a slope results in more retaining walls and smaller yard areas. This in turn reduces the physical distance between homes. In addition, the linear distance of access roadways increases because every lot must be provided access. The resulting profile of a small-lot subdivision on sloping land is a regimented terraced appearance consisting of wall-terraced lot-wall-street-wall-terraced lot-wall street and so on. Overall, this results in a significant change to the topographic appearance of the property.

Water Resources/Water Quality. A small-lot subdivision will require more potable water because of its higher residential population. In this instance, it is estimated that the Small-Lot Alternative would require approximately twice as much potable water as the Preferred Alternative.

Flora and Fauna. The impact of a small-lot subdivision development on flora and fauna would be likely be greater than the impact of the Preferred Alternative. Both alternatives would result in revegetation of the entire project area. However, a small-lot subdivision would likely result in smaller lots and less yard space devoted to landscaping than the Preferred Alternative.

Archaeology and Cultural Resources. The impact of a small-lot subdivision on archaeological and cultural resources would be essentially the same as the Preferred Alternative.

Traffic and Transportation. Traffic impacts would be greater than the Preferred Alternative because the resident population would be larger. A higher-density development will generate more traffic.

Infrastructure, Power, and Communications. The infrastructure demands for the Small-Lot Alternative would be higher than the Preferred Alternative. Higher densities would increase demand for sewer service. Smaller lots limit the area available for an individual septic system leaching field and usually require a centralized WWTP, with the corresponding collection system to deliver wastewater to the plant.

Electrical energy and telecommunication requirements would also be greater than those of the Preferred Alternative.

Visual. The visual impact of the Small-Lot Alternative would be greater than the Preferred Alternative. As discussed above, the smaller yards resulting from the necessary terracing would bring homes closer together. The overall appearance, especially when viewed from afar, would be of a moderately dense community of homes stacked one row behind another.

Public Services. The demand for public services would be greater for the Small-Lot Alternative than the Preferred Alternative. Higher densities result in greater population and more demand for educational and recreational resources and for fire, police, and emergency services than lower density projects.

Population. The population of the Small-Lot Alternative would approximately double the projected population of the Preferred Alternative.

Socio-Economic. The socio-economic benefits of the Small-Lot Alternative would be essentially the same or slightly greater than the Preferred Alternative. On a per square foot basis, the price of the land would be slightly higher, due mostly to conditions of market demand. That, coupled with the higher population density, means that while many more owner occupants are paying taxes at the State, County, and Federal levels, the amount of real property tax on a per lot basis is less. The demand for public services may offset this to some degree, but the overall demand for consumer goods and services is obviously higher with a larger population than a smaller one. Finally, the increased number of small lots would help to address the existing housing deficit in North Kona, allowing more units to be offered to income groups that are now excluded from the North Kona area by lack of product availability.

Inventory of Agricultural Land. The Small-Lot Alternative would result in the same impact to agricultural land as the Preferred Alternative.

#### **2.6.4 Affordable Housing Alternatives**

The variety of affordable housing alternatives is similar to the universe of alternative densities. Given the County of Hawai'i's flexible affordable housing policy, requirements can be satisfied by a wide range of alternatives including on-site housing, off-site housing, cash contributions, or a combination of all three.

Pursuant to Chapter 11 of the Hawai'i County Code, affordable housing requirements are triggered by new rezonings that create additional residential uses. For five or more residential lots or uses, the applicant must earn affordable housing credits equal to twenty percent of the number of units or lots.

For the purposes of this analysis, affordable housing alternatives are limited to the Large-Lot and Small-Lot alternatives, and no assumptions are offered as to the possibility of off-site and/or cash contributions.

The Large-Lot Alternative would not trigger the requirement for affordable housing as the subject property could be developed without a change of zoning.

The Small-Lot Alternative would see a significantly higher number of affordable units than the Preferred Alternative. This is considered to be a positive social benefit because it would address an acknowledged need for affordable housing in the North Kona District.

#### **2.6.5 Alternative Land Uses**

A discussion of the potential of the Kula Nei site for agricultural development is summarized in Section 2.6.1. Development of the subject property for other non-residential uses, such as commercial or industrial, are not considered to be feasible given the regional character. Given the presence of the surrounding residential subdivisions and the property's physical distance from Queen Ka'ahumanu Highway, its development as an industrial park for light or moderate industrial land uses is not feasible and would not be accepted by the surrounding community.

Development of the property for non-residential use would be generally inconsistent with the intent of the Keāhole to Kailua Development Plan and the West Hawai'i Regional Plan, which both envision the region to be the focus of residential development.

Commercial development of a portion of the property is not patently infeasible from the perspective of demand for goods and services from the surrounding communities. However, without close proximity to a major thoroughfare, the surrounding demand for commercial space would likely be on the order of hundreds of square feet rather than tens of thousands. Practically speaking, the Kula Nei property is not appropriate for large scale commercial development because the slope of the land is far in excess of what is typically allowable. Successful commercial areas are usually developed on land with a slope of less than four percent. The slope at Kula Nei ranges from ten percent to fourteen percent. For these reasons, commercial development is not a feasible alternative.

The same limitations generally preclude development of the property for public facilities such as a school or hospital: the site is simply too steep and too far removed from major thoroughfares to render public facility development cost effective. Development costs increase substantially for sloped properties because of the increased cost for cut and fill to create a level building site.

Finally, its slope also tends to preclude the entire site from being developed with affordable housing unless a substantial portion of the development costs were underwritten. The site development costs associated with mass grading and retaining wall construction could not be passed on to the buyer: they would likely drive the price of housing units beyond the County or State's definition of affordability.

### **2.6.6 Alternative Locations**

Development of a residential project is to a great degree market driven. West Hawai'i is one of the fast growing development areas in the state of Hawai'i. As has been discussed above, the State's West Hawai'i Regional Plan and the Keāhole to Kailua Development Plan envision the project area and the surrounding region appropriate for urban expansion. The County General

Plan designates the property for Low-Density Residential. Development of the project elsewhere in West Hawai‘i would not likely be consistent with State and County policy.

The proposed project was largely determined by its location, its conformity with the development policies of the State and the County, and the applicant’s ability to purchase the property and ~~the financial ability to finance~~ the development. The applicant evaluated several properties in the Kona region before committing to the Kula Nei project site. While hypothetically, the proposed project can be located elsewhere, it would not be on land owned by the applicant and would therefore not be the same project.

A project similar to Kula Nei could be developed in the ‘Ewa District of O‘ahu, where a considerable amount of land suitable for residential development is available, but this location was outside of the applicant’s area of interest and subsequently no attempt was made to purchase land there.

### **2.6.7 Alternative Roadway Connections**

As discussed in Section 2.6.2, the site design of a project is influenced by several factors including roadway access. Alternative roadway connections have been an important aspect of planning for the Kula Nei project.

From a regional and historical perspective, the *kula* lands of North Kona between Kailua-Kona and Keāhole have been steadily developing for the past twenty years, pursuant to policies enacted by the State of Hawai‘i (The West Hawai‘i Regional Plan (1989)) and the County of Hawai‘i (The Keāhole to Kailua Plan (1988)).

The County Planning Department has proposed the development of three parallel north-south region-serving collector roads to serve the *kula* lands in this ~~region~~ locale. The conceptual location of the uppermost of these three region-serving roadways bisects parcel 7 of the Kula Nei project and continues on to the Kona Acres subdivision, where it becomes Holoholo Street. The applicant will work with other surrounding landowners to construct the portion of the region-serving roadway (the so-called Holoholo Street extension) applicable to their individual projects.

Thus, Holoholo Street becomes, by default, the principal regional access route to Kula Nei by linking Kaiminani Street to Hina Lani Street, consistent with County plans.

While not proposed as part of the Preferred Alternative, in addition to the other proposed accesses discussed in Section 2.5.1, an additional access could be provided across TMK 7-3-046:105, a residential lot in Kona Acres subdivision that abuts the northern boundary of parcel 39 and is owned by the applicant. Developing a roadway across this lot would provide a connection to Punawale Street.

### **2.6.8 Alternatives for Wastewater Collection and Treatment**

The Kula Nei Preferred Alternative includes a 25,200 gpd WWTP to serve the project's affordable housing area and approximately 23 nearby single-family lots. The project's remaining lots will be served by IWSs consisting of septic tanks and leaching fields on each individual residential lot.

Two alternatives were considered. The first considered expanding the proposed WWTP to serve the entire development. The second considered linking the entire development to the County's regional system. The first alternative would require the construction of a collection system network of sewer pipes throughout the project area with two lift stations below Holoholo Street to deliver wastewater to a treatment plant on 3- to 5-acres of on-site land. The second alternative would require construction of virtually the same on-site collection system, as well as an off-site transmission line to the County WWTP at Kealakehe several miles away. Both alternatives were rejected early in the planning process in favor of a small on-site treatment plant that does not require lift stations, supplemented by the IWSs serving the remaining lots. With regard to the on-site WWTP, it was determined that gravity flow (the Preferred Alternative) is preferable to pumped flow for the following reasons:

- Gravity flow is more reliable than pumped flow.
- The maintenance and energy costs of operating sewage pump stations (lift stations) are significant.
- Standby power is required for sewage pump stations.
- A potential undesirable consequence of a pumping system failure is a sewage spill.

Figures 2-7 and 2-8 present an alternative collections system that was considered in conjunction with using the County's WWTP. As stated above, the high costs of constructing force mains and the complicated system requiring multi-party approvals rendered this alternative impractical.

## **2.6.9 Alternatives for Electrical Energy Consumption**

Practical alternatives for reducing residential electrical energy consumption include the installation of energy efficient water heating and air cooling technologies and renewable energy devices such as solar water heating. Maximizing daytime lighting and encouraging energy efficient lighting fixtures are also effective interventions. Because the proposed affordable housing complex will likely be constructed by a single developer, it offers the best opportunity for the implementation of energy efficient technologies. However, the applicant can incorporate policies to improve energy efficiency in CC&Rs that would be imposed on lot owners.

## **2.6.10 Accessory Area Alternatives**

Alternatives to the siting of potable water infrastructure and access roadways are dictated by design requirements. With regard to water, the choice of location for wells and reservoirs must consider elevation in accordance with pressure zones established by the DWS. If the proposed well is not at sufficient elevation above the anticipated destination of the water, the limited effects of gravity will not produce adequate water pressure. If the well is too far above the destination, the effects of gravity will be too strong and water pressure will be too high. In this instance, water reservoirs must be constructed to intercept water flow from the well and reduce pressure to acceptable levels.

For Kula Nei, the proposed well is located on a parcel of land (Parcel 36) that was available for purchase at an elevation that necessitates only two intercepting reservoirs. The well is proposed at an elevation of 1,815 feet above msl with a reservoir adjacent to it. A first intercepting reservoir is proposed at an elevation of 1,385 feet (on parcel 42). A second intercepting reservoir is proposed to be constructed on site to serve the 1,050-foot service area. Alternative well locations would affect the determination ~~as~~of the number of reservoirs needed.

The search for additional well sites was restricted to elevations approximating 1,850 feet and generally upslope of the Kula Nei property.

With regard to off-site roadway access, the principal issue has been the location of an access: either across the Kaloko Heights subdivision, or through parcel 105 in the Kona Acres subdivision. Kaloko Heights is a proposed subdivision awaiting County approval. Negotiations for an access across Kaloko Heights are continuing. On the other hand, the applicant already owns parcel 105, but although it lies directly across from the southern end of Punawale Street, it is a residential lot that was not intended as a roadway connector.

## 2.7 DEVELOPMENT SCHEDULE

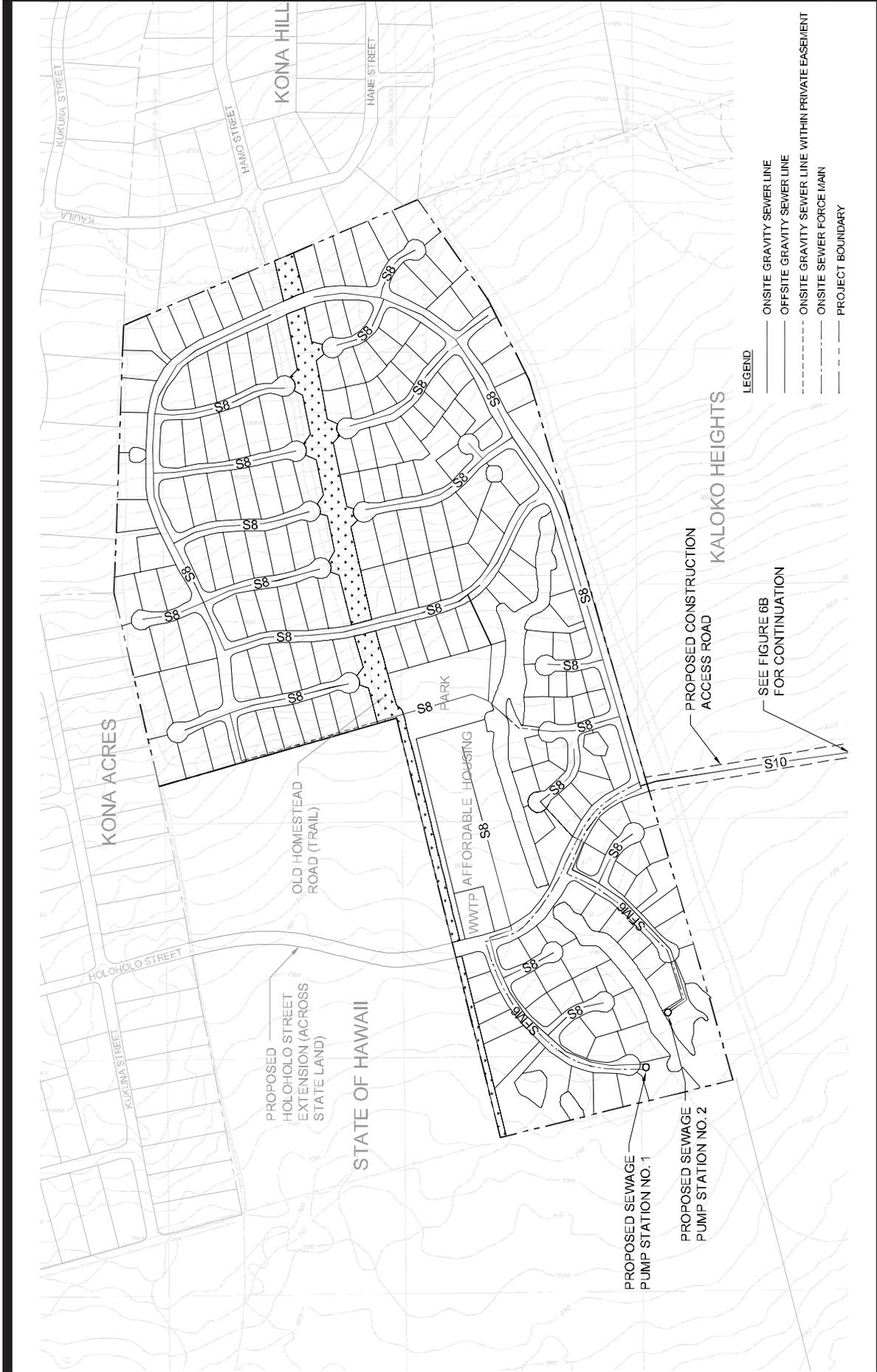
The applicant anticipates lot sales of up to 40 lots per year. Groundbreaking is anticipated in 2010 with all lots sold by 2017. The timing of actual construction of individual home sites will be dictated by market conditions and the master builder. The affordable housing units will be constructed concurrently with market housing in accordance with applicable county zoning ordinances. Table 2-4 presents the Preliminary Development Schedule.

**Table 2-4: PRELIMINARY DEVELOPMENT SCHEDULE**

Land Use	2010 - 2011	2011 - 2012	2012- 2013	2013- 2014	2014 - 2015	2015 - 2016	2016 - 2017	TOTAL
Units	39	40	40	39	40	38	34	270

## 2.8 PROJECT COSTS

The proposed project will be privately funded. The total project cost is estimated to be approximately \$80 million. This includes site development; IWS and WWTP wastewater systems; the potable water well, reservoirs, and transmission lines; on-site and off-site roadways; and the community park.

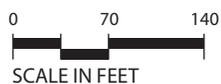
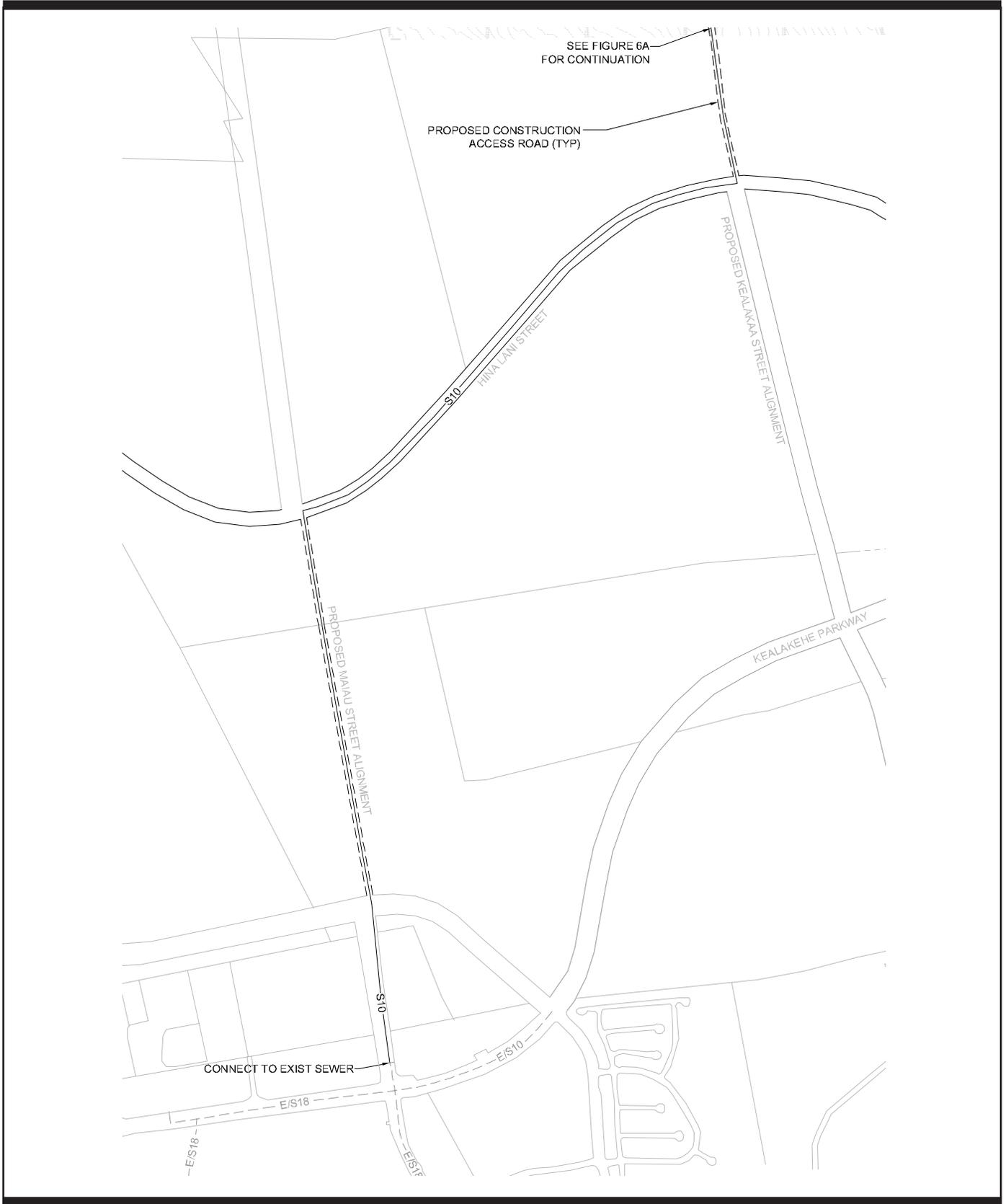


**Figure 2-7**  
**SEWER PLAN — OPTION 1: OFF-SITE SEWER CONNECTION**

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**Figure 2-8**  
**SEWER ALTERNATIVE 1: CONNECTION TO COUNTY WWTP**

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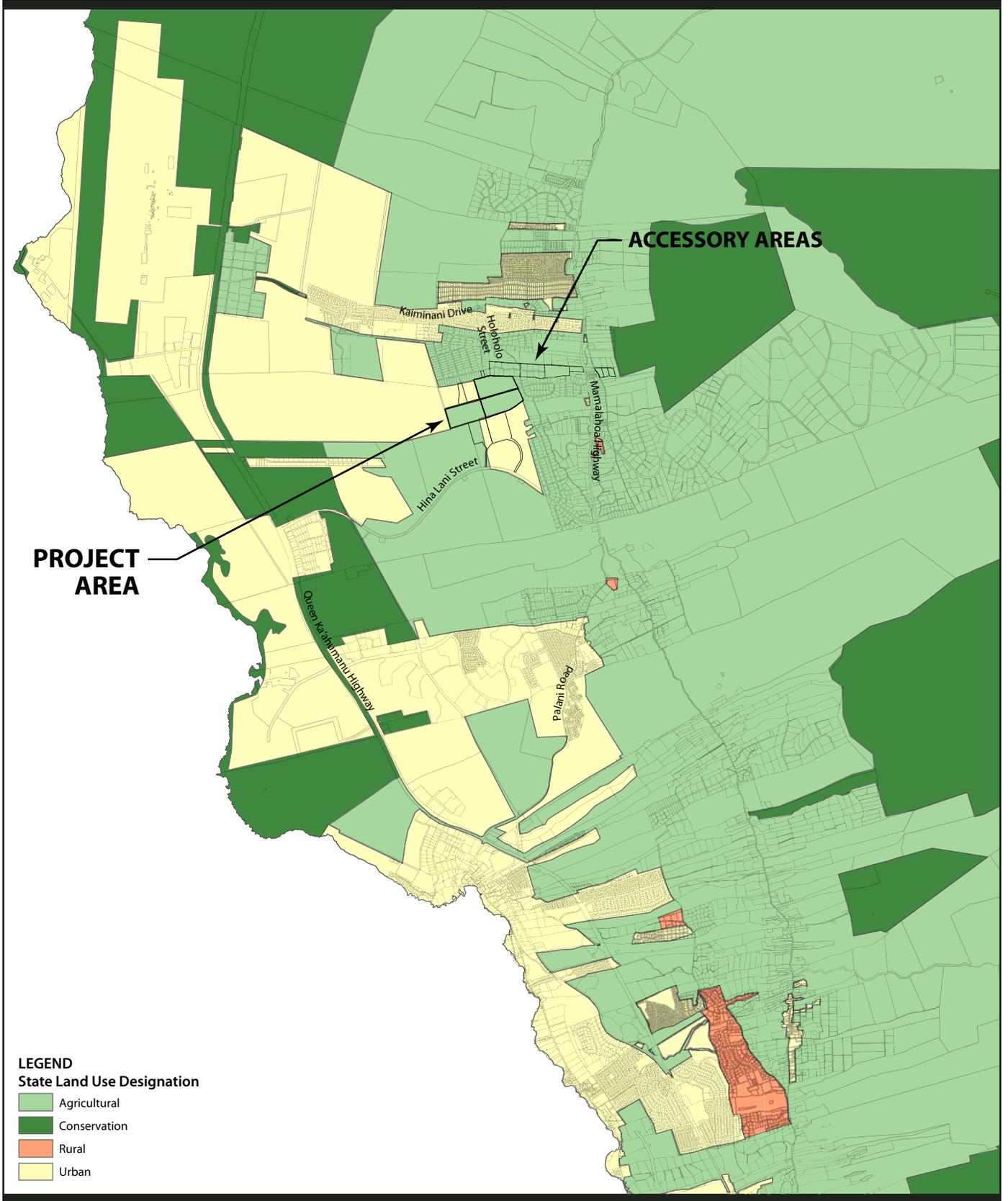
## 2.9 NECESSARY PERMITS AND APPROVALS

The proposed project will require the following permits and approvals. See Figures 2-9, 2-10, and 2-11 for existing land use classifications.

**Table 2-5: REQUIRED APPROVALS**

Permit or Approval	What is Needed	Agency	Status
Land Use Boundary Amendment	State Agricultural District to State Urban District	State LUC	Pending completion of EIS
Zone Change	A-5a (Agriculture) to Residential or Project District	County of Hawai'i Planning Department	Pending State Land Use Boundary Amendment approval
Archaeological Inventory Survey, Data Recovery, Preservation Plan	Approval of archaeologist's work and recommendations	SHPD of DLNR	Inventory survey completed. Data Recovery and Preservation Plan to be prepared pending approval of inventory survey.
Burial Treatment Plan	Approval of archaeologist's recommendations	SHPD of DLNR	Pending approval of inventory survey.
Well Construction-pump	Approval of plans and water allocation by DWS	State Water Commission, DLNR	Pending application
NPDES	Approval of plans	State of Hawai'i DOH	Pending application
Wastewater Treatment Plant Approval	Approval of plan	State DOH and Hawai'i County Department of Public Works	Pending zoning approval
Subdivision	Preliminary and Final approvals	County of Hawai'i Planning Department	Pending zoning approval
Grading, building, plan approval and other necessary development permits	Approval of plans	County of Hawai'i Planning Department	Pending Subdivision approval

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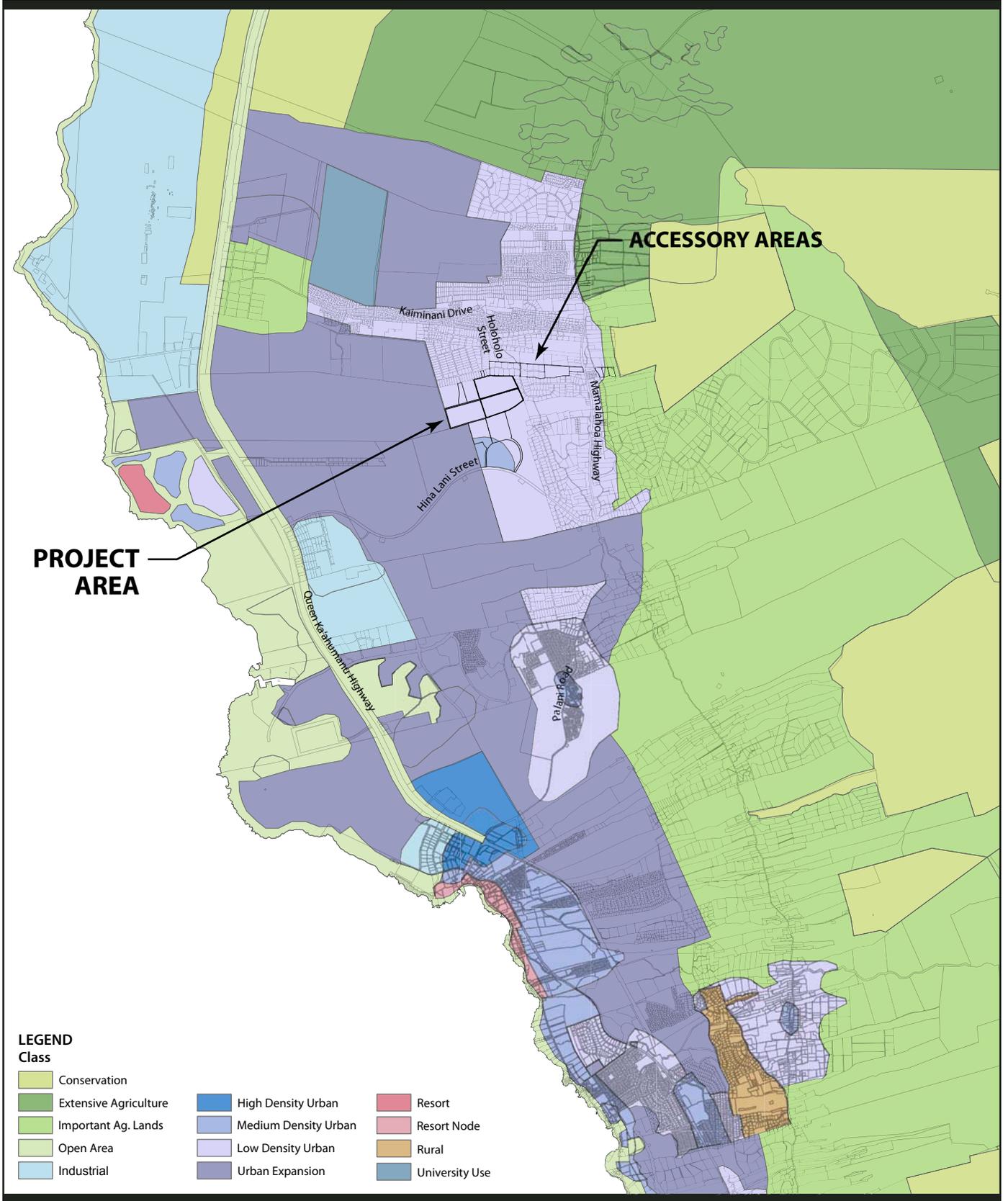
**Figure 2-9**  
**EXISTING STATE LAND USE DISTRICTS**

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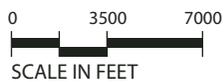
0 3500 7000  
SCALE IN FEET





**Figure 2-10**  
**LAND USE PATTERN ALLOCATION GUIDE**

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# 3 CHAPTER THREE: DESCRIPTION OF THE NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

## 3.1 CLIMATE

### 3.1.1 Existing Conditions

Climate in the Kula Nei project area is affected by its geographic location between the coast and the nearby mountains of Hualālai and Mauna Loa volcanoes. Regional temperatures range from mid-60s in the winter to the mid-80s in the summer. The annual rainfall in the region averages 25 to 30 inches per year. Unlike most areas in Hawai‘i, rainfall in Kona is heavier in the summer than in winter. Trade winds in Hawai‘i typically blow from a northeast direction. The local Hualālai and Mauna Loa volcanoes influence the wind pattern on the Kona-side of the island of Hawai‘i. The prevailing winds blow out towards the ocean in the early morning and then in the afternoon the winds blow from the ocean toward the island (Juvik, 1998).

### 3.1.2 Potential Impacts and Mitigation

The Kula Nei project is not expected to have any impacts on climatic conditions of the area.

### 3.1.3 The Impacts of the Alternatives on the Climate

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			No impacts on climatic conditions are expected under the No Action Alternative.
2. Proposed Action	✓			No impacts on climatic conditions are expected under the Proposed Action.
3. Large-Lot Subdivision	✓			No impacts on climatic conditions are expected under the Large-Lot Subdivision Alternative.
4. Small-Lot Subdivision	✓			No impacts on climatic conditions are expected under the Small-Lot Subdivision Alternative.

## 3.2 GEOLOGY AND TOPOGRAPHY

### 3.2.1 Existing Conditions

The topography of the Primary Project Area ranges from approximately 740 feet above msl to approximately 1,120 feet above msl, with natural undeveloped hill slopes of approximately 10 to 20 percent gradient (Figure 3-1). The ground surfaces located at the eastern half (upper elevation) of the project site are generally steeper than those encountered at the western portion (lower elevation) of the site. The terrain encompasses gently rolling topography with rocky, irregular ground surfaces generally exhibiting topographic relief of less than 3 to 5 feet between adjacent rock outcroppings.

#### Regional Geology

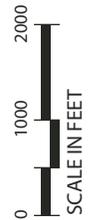
The island of Hawai‘i, the largest in the Hawaiian Archipelago, covers an area of approximately 4,000 square miles. The island was formed by the activity of five shield volcanoes. These are ~~Kohala~~ Kohala, which is long extinct; Mauna Kea, which has had activity during recent geologic time; Hualālai, which last erupted in 1801; and Mauna Loa and Kīlauea, both of which are still active.

Geologically, the Primary Project Area is situated on the western flank of the Hualālai Volcano, which comprises the west-central portion of the island of Hawai‘i. Based on a review of available geological information, there are no mapped geologic fault structures located within approximately 3 miles of the Primary Project Area. However, the project site is located approximately 3 miles toward the southwest from the principal Hualālai volcanic rift zone, which trends in a northwesterly direction across the summit.

The Hualālai rift zone is an elongated eruptive fissure lined with cinder cones and vents. Eruptions from the rift zone last occurred in 1800-1801 and are responsible for the lava flows which reached the coastline at the Keāhole and Kīholo areas of the island of Hawai‘i. Due to the



**Figure 3-1**  
**SLOPE ANALYSIS**  
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relatively young age of Hualālai, the ground surfaces at the project site generally consist of basaltic lava rock formation with some thin surficial soils consisting of silty and sandy volcanic ash materials.

The lava rock formations encountered at the Primary Project Area represent both *‘a‘a* and *pāhoehoe* type flows, which in the past had spread and ponded as they approached the ocean. *‘A‘a* lavas are typically characterized by a porous, rough, and irregular flow surface resembling a jagged accumulation of rock fragments including tabular plates, cobbles, and boulders. The interior core of the *‘a‘a* lava flows commonly contains massive, very hard rock containing fewer rock discontinuities. *Pāhoehoe* lavas are typically characterized by smoother, rope-like or billowy flow surfaces, which contain an internal fractured structure of vesicular (porous) rock.

Basaltic rock is considered to be a relatively permeable rock formation and can transmit water quite readily in both the horizontal and vertical directions. In general, water is transmitted through the porous rock matrix, along joints, fractures and inter-flow contacts, cavities, and along clinker layers. The permeability of the clinker and cavities is high; therefore, they serve as the major water transmission features.

Due to the relatively recent age of the volcanic products of Hualālai, and much of the island of Hawai‘i, soil deposits derived from rock weathering are generally rare and thin in extent. Much of the ground surface is exposed as barren rock with the soil materials having been deposited within the surface cracks and topographic low areas within the rock formation.

### **Surface and Subsurface Geological Conditions**

The Primary Project Area is likely underlain by hard basaltic rock formation with some very thin surficial soils consisting primarily of silty and fine sandy soils containing some organic matter. The surface soils, where they exist, are generally less than 6 inches in thickness and are concentrated in topographic low elevations scattered throughout the site.

The basalt rock formation consists of both *‘a‘a* and *pāhoehoe* lava rock materials with frequent cavities and potential buried lava tube features. The near-surface rock materials consist of hard to very hard *pāhoehoe* type lavas with some surface regions consisting of rubbly clinker

material. Based on observations of highway road cuts in the vicinity, lava tubes appear to be common occurrences in the *pāhoehoe* lavas. Near-surface lava tubes and cavities should be anticipated in the basalt rock formation, based on conditions found in the vicinity of the project area. Excavation of the basalt rock formation will likely require hard rock ripping using heavy construction equipment.

### **3.2.2 Potential Impacts and Mitigation**

All grading operations will be conducted in compliance with the 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 for construction to begin. During Grading Permit review and approval, the grading plans for the site will be reviewed by the County of Hawai‘i Department of Public Works. Site grading will generally be dictated by the design requirements of the proposed roadways. Once these grades have been set, the grade of abutting residential home sites will be determined.

The existing topography will be altered to the extent necessary for construction of the proposed improvements. It is anticipated that cut and fill quantities will generally balance as construction progresses.

During grading activities the potential for site erosion would increase. The contractor would be required to implement a BMP plan to contain and control site erosion and to prevent the discharge of sediment from the site. Based on the requirement for construction activities to comply with an approved BMP plan, the short-term environmental impacts from grading activities are anticipated to be insignificant.

The increase of impermeable surfaces resulting from site development will have the effect of increasing storm water runoff quantities on site. The runoff will be collected and discharged to on-site sumps and drywells for percolation into the ground. Thus, precipitation falling on the site will discharge into the ground as it does under pre-development conditions, and off-site runoff will not increase as a result of the proposed development.

In the long term, site drainage would continue to be discharged to the subsurface and to recharge the underlying groundwater aquifer. After the completion of project construction, ground surfaces would be stable and the potential for erosion would be minimal. Long-term impacts of the project on drainage and erosion control are not anticipated to be significant.

Due to the possibility that buried cavities may be encountered during construction, it is recommended that an early program of sub-grade cavity detection and collapse be implemented using construction equipment such as a D-9 Bulldozer and a 20-ton roller in order to collapse the near-surface potential cavities. A program of foundation cavity probing and grouting may be necessary to stabilize potentially deeper cavities located below building footings and other heavy-loaded foundation systems.

### 3.2.3 The Impacts of the Alternatives on Geology and Topography

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			No impacts to geology or topography are anticipated under the No Action Alternative.
2. Proposed Action		✓		A Grading Permit will be required prior to construction. It is anticipated that cut and fill quantities will generally balance. No significant impacts to topography are anticipated.
3. Large-Lot Subdivision		✓		Generally the same grading improvements proposed in the Preferred Alternative would likely be implemented in a large-lot configuration. A Grading Permit would be required prior to construction.
4. Small-Lot Subdivision		✓		Grading improvements would disturb more of the project area in the small-lot alternative as compared to the Preferred Alternative. A Grading Permit would be required prior to construction.

### 3.3 SOILS AND AGRICULTURAL POTENTIAL

Decision Analysts Hawaii, Inc. prepared an assessment of the existing conditions and potential impacts of the proposed project on the soils and agricultural potential of the Primary Project Area and Accessory Areas. The complete report is in Appendix C.

### 3.3.1 Existing Conditions

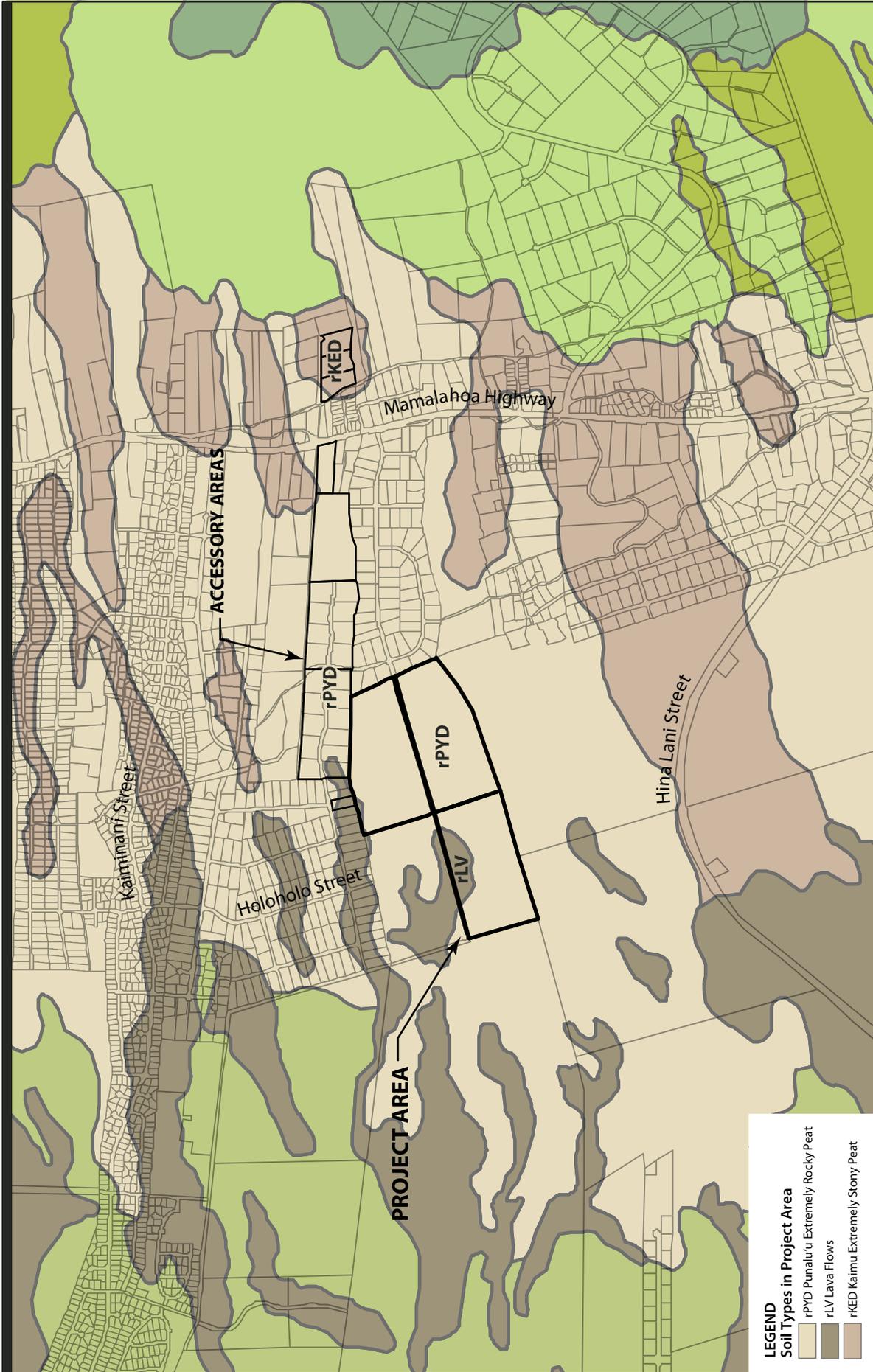
The Primary Project Area and the Accessory Area lands both have poor agronomic conditions for potential commercial crop production and for grazing cattle. Generally, the terrain is characterized by weathered *pāhoehoe* and 'a'a lava flows ranging in age from 3,000 to 5,000 years old. Soils are extremely rocky, rainfall is low (25-30 inches annually) and water is not available for crop farming. There are no existing irrigation improvements. No agricultural activities are taking place in the Primary Project Area.

Based on archaeological surveys of the property conducted for this EIS, evidence suggests that the subject property was used for habitation, agriculture, and water collection activities during the Precontact Era (before 1778 A.D.) and Historic periods (after 1778 A.D.) (Rechtman 2006). Lands in this general area were used for goat, cattle, and donkey pasturage. With regard to plantation or diversified agriculture, the Primary Project Area and the Accessory Areas have never been part of a plantation, and only a small portion of the Accessory Areas is being used for cattle grazing.

Three soil suitability studies have been prepared for lands in Hawai'i. These are the U.S. Department of Agriculture (USDA) *Soil Conservation Service (SCS) Soil Survey*, the State of Hawai'i Department of Agriculture's (DOA) *Agricultural Lands of Importance to the State of Hawaii* (ALISH), and the University of Hawai'i Land Study Bureau (~~LBS~~LSB) *Overall Productivity Rating (LSB)*. These reports describe the soils' physical attributes and evaluate the relative productivity of different soil types for agricultural production purposes.

#### 3.3.1.1 Primary Project Area

~~Soil Conservation Survey (SCS) Soil Survey.~~ The USDA *Soil Conservation Service's Soil Survey of the Island of Hawaii* (USDA 1972), classifies the soils on the Primary Project Area as Punalu'u extremely rocky peat (rPYD) and lava flows (rLV) (Figure 3-2). The SCS's Land Capability Grouping rates soil types according to eight levels ranging from the highest classification Level I to the lowest Level VIII. The highest classification represents soils with the greatest capacity to



**Figure 3-2**  
**SOIL TYPES**

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support agriculture. The subclasses are indicated by lower case letters that follow the classification level.

Punalu‘u Extremely Rocky Peat (rPYD), 6 to 20 percent slopes: These soils are comprised of (1) rock outcrops over 40 percent to 50 percent of the surface, and (2) medium-acid peat about 4 inches thick underlain by *pāhoehoe* lava bedrock. The peat is rapidly permeable. The *pāhoehoe* lava is very slowly permeable, although water moves rapidly through the cracks. Runoff is slow, and the erosion hazard is slight. Approximately 122 acres (or 94%) of the Primary Project Area contains rPYD soils. These soils are rated Class VIIs soils, non-irrigated. Class VII soils have very severe limitations that make them unsuitable for cultivation. Use of these soils is typically restricted to non-agricultural uses such as pasture or range land, and non-agricultural uses. The sub-classification “s” indicates that the soils are extremely rocky or stony.

Lava Flows, ‘a‘a (rLV): This has been mapped as a miscellaneous land type. The lava flows soil is comprised of rough and broken ‘a‘a lava with practically no soil covering. This lava is a mass of hard, glassy, sharp pieces piled in tumbled heaps. Approximately 8 acres (or 6%) of the Primary Project Area contains rLV soils. These soils are rated VIIIs, non-irrigated. Class VIII soils and landforms have very severe limitations that preclude their use for commercial plant production and restrict their use to non-agricultural uses. The Sub-classification “s” indicates that the soils are extremely rocky or stony.

Agricultural Lands of Importance to the State of Hawai‘i (ALISH). The ALISH ratings were developed in 1977 by the Natural Resources Conservation Service, the University of Hawai‘i College of Tropical Agriculture and Human Resources, and the State DOA. Land is classified into three broad categories (1) Prime agricultural land, which is land best suited for the production of crops because of its ability to sustain high yields with relatively little input and with the least damage to the environment; (2) Unique agricultural land, which is non-Prime agricultural land used for the production of specific high-value crops (e.g., coffee and taro); (3) Other agricultural land, which is non-Prime and non-Unique agricultural and that is important to the production of crops; and (4) Unclassified, which are lands that are not rated. The soils in the Primary Project Area are Unclassified (Figure 3-3).

Overall Productivity Rating (LSB). In 1972, the University of Hawai'i LSB developed the Overall Productivity Rating, which classifies soils according to five levels of productivity using the letters A, B, C, D, and E. The letter A represents the highest class of productivity and E the lowest class of productivity. Using this system, approximately 118 acres (or 91 percent) of the soils in the Primary Project Area are rated E, the lowest productivity class, approximately 12 acres (or 9%) are rated D (Figure 3-4).

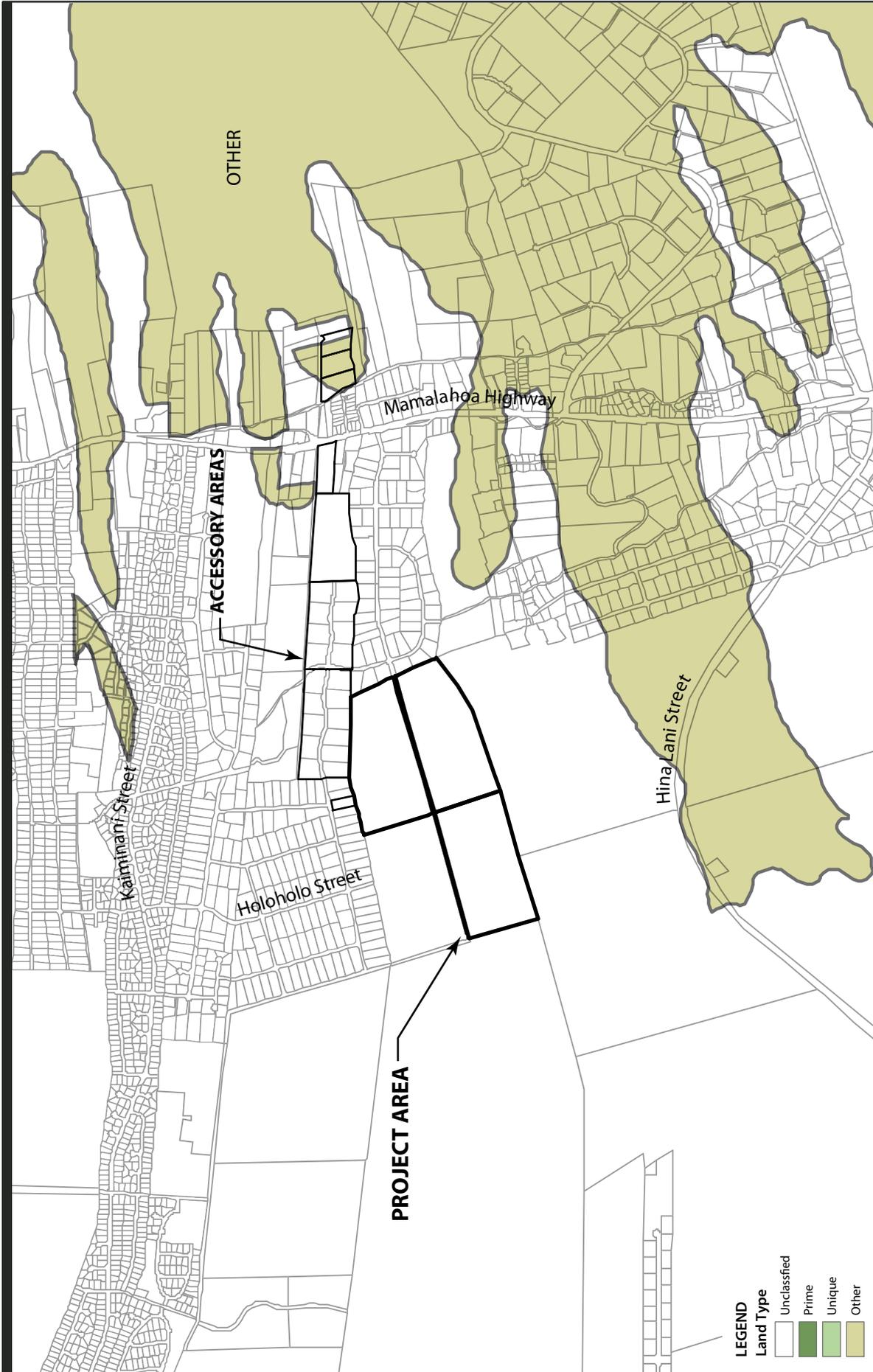
### 3.3.1.2 Accessory Areas

Soil Conservation Survey (SCS) Soil Survey. The USDA *Soil Conservation Service's Soil Survey of the Island of Hawaii* (USDA 1972), classifies the soils on the Accessory Areas as Punalu'u extremely rocky peat (rPYD, 6 % to 20% slopes), Lava flows (rLV, 'a'a, no range of slopes), and Kaimu extremely stony peat (rKED, 6% to 20% slopes). As shown in Figure 3-2, most of the Accessory Areas have Punalu'u extremely rocky peat (rPYD) soils, with the exception of the Holoholo Street extension through lava flow soils (rLV) on State land. Three of the Accessory Area parcels to be utilized for water development have Kaimu extremely stony peat (rKED) soil.

Two of the three soil types in the Accessory Areas are described above. Soil type Kaimu extremely stony peat (rKED) is rated VIIIs. Class VII soils have very severe limitations that make them unsuitable for cultivation. Use of these soils is typically restricted to non-agricultural uses such as pasture or range land, and non-agricultural uses. The Sub-classification "s" indicates that the soils are extremely rocky or stony.

Agricultural Lands of Importance to the State of Hawai'i (ALISH). Under ALISH, most of the soils in the Accessory Areas are unrated. Approximately two acres *mauka* of Māmalahoa Highway, which are to be utilized for water development, are rated as Other agricultural lands (Figure 3-3).

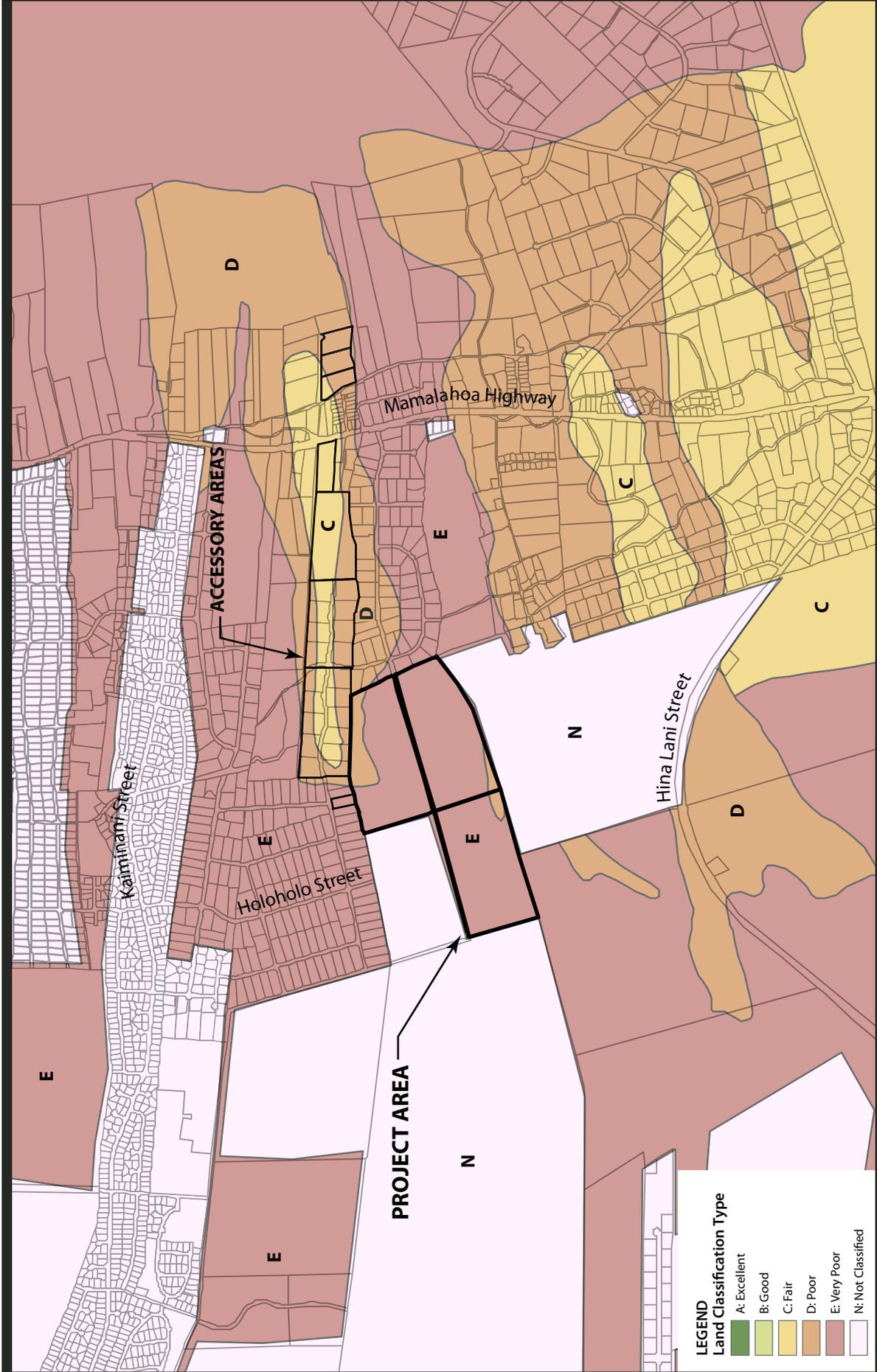
Overall Productivity Rating (LSB). Most of the Accessory Area parcels are rated ~~D, E, and~~ "unrated" C and D. ~~Two One parcels—TMK 7-3-007: 42 and 43—are~~ is rated C, but will only be utilized for an underground water transmission line. (Figure 3-4)



**Figure 3-3**  
**AGRICULTURAL LANDS OF IMPORTANCE**  
Kula, Hawaii  
North Kona, Hawaii  
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Prepared for The Shopoff Group  
September 2007







**Figure 3-4**  
**OVERALL PRODUCTIVITY RATING (LSB)**

Kula Nei  
North Kona, Hawaii  
Environmental Impact Statement  
Prepared for The Shopoff Group  
September 2007





### 3.3.2 Potential Impacts and Mitigation

The Primary Project Area and the Accessory Areas lands have poor, low-quality soils that are extremely rocky. These lands are unfavorable for commercial crop production. The soils are generally *pāhoehoe* and 'a'a lava flows. Although some agriculture-oriented activities occurred during the Precontact era and historically, those activities consisted of small animal grazing and relatively small-scale crop production of subsistence crops for those who lived on the land.

Statewide, a vast amount of land has been released from plantation agriculture. The release of land from plantation agriculture has far outpaced the demand for land for diversified crops. This trend also applies to the island of Hawai'i. Since 1973, approximately 106,000 acres were released from sugar production. At most, 17,000 acres were planted in macadamia nuts, papaya, and other crops. Approximately 20,000 acres were replanted in commercial forest. Although some of the remaining 69,000 acres were used for housing, the vast majority of that land remains available for other crops. Similarly, there is a large and increasing supply of grazing land, which combined with no growth in the number of cattle, indicates that land is not the limiting factor to the growth of Hawai'i's cattle industry. In summary, the commitment of the Kula Nei project land to housing will not adversely affect the growth of diversified agriculture.

#### 3.3.23.3 The Impacts of the Alternatives on Soil and Potential for Agriculture

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			There are no existing agricultural operations on the Primary Project Area and Accessory Areas. No impacts to soils or the potential for agricultural activity are expected under the No Action Alternative.
2. Proposed Action	✓			The Primary Project Area and Accessory Areas have poor soils and lack irrigation water. The lands are unsuitable for commercial crop production. No adverse impacts to soils or the potential for agricultural activity are anticipated under the Proposed Action. No mitigation measures are warranted.
3. Large-Lot Subdivision	✓			The Primary Project Area and Accessory Areas have poor soils and lack irrigation water. The lands are unsuitable for commercial crop production. No adverse impacts to soils or the potential for agricultural activity are anticipated under the Large-Lot Subdivision Alternative.

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
4. Small-Lot Subdivision	✓			The Primary Project Area and Accessory Areas have poor soils and lack irrigation water. The lands are unsuitable for commercial crop production. No adverse impacts to soils or the potential for agricultural activity are anticipated under the Small-Lot Subdivision Alternative.

### 3.4 NATURAL HAZARDS

#### 3.4.1 Tsunami Inundation - Existing Conditions

The most severe tsunami to impact the Hawaiian Islands in historic times struck on April 1, 1946. Maximum runups were reported to be 55 feet at Pololū Valley in Kohala. Waves surged inland more than a mile and a half in some areas.

The Kula Nei project is approximately four miles inland from the shoreline and is situated on the west facing slope of Hualālai at elevations ranging from 700 to 1,000 feet above sea level.

#### 3.4.2 Potential Impacts and Mitigation

Due to the project’s location, probable impacts from tsunami are highly unlikely. No mitigation measures are warranted.

#### 3.4.3 The Impacts of Natural Hazards on the Alternatives

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			The subject property is located outside the coastal tsunami evacuation area. No mitigation measures are warranted.
2. Proposed Action	✓			The subject property is located outside the coastal tsunami evacuation area. No mitigation measures are warranted.
3. Large-Lot Subdivision	✓			The subject property is located outside the coastal tsunami evacuation area. No mitigation measures are warranted.
4. Small-Lot Subdivision	✓			The subject property is located outside the coastal tsunami evacuation area. No mitigation measures are warranted.

### 3.4.4 Flood Inundation – Existing Conditions

The subject property is located in an area identified as Zone X on the Flood Insurance Rate Maps (FIRM) produced by the Federal Emergency Management Agency (FEMA). Zone X denotes areas outside the 500-year floodplain. (FIRM Map No. 0681 C, September 16, 1988.) There are no perennial or intermittent streams or water courses crossing the property. No regional drainage ways have been identified on the property. During periods of heavy rain, storm water crosses the property in sheet flow, but is quickly absorbed. No flooding conditions are known to exist.

### 3.4.5 Potential Impacts and Mitigation

Flooding is not expected to be a hazard at the subject property, except at times of extremely heavy rainfall when local accumulations of rainwater may briefly occur on site. No mitigation is warranted.

### 3.4.6 The Impacts of Flood Inundation of the Alternatives

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			The subject property is situated outside the identified 500-year floodplain.
2. Proposed Action	✓			Infiltration areas and drywells are proposed to be incorporated into the project design to retain storm runoff produced on site. No evidence exists to suggest that storm water runoff occurring upland of Kula Nei and crossing the property poses a significant threat.
3. Large-Lot Subdivision	✓			The same storm water drainage controls proposed in the Preferred Alternative would likely be implemented in a large-lot configuration. No additional mitigation measures are warranted.
4. Small-Lot Subdivision	✓			The same storm water drainage controls proposed in the Preferred Alternative would likely be implemented in a small-lot configuration. No additional mitigation measures are warranted.

### 3.4.7 Earthquakes – Existing Conditions

The Big Island is one of the most seismically active areas on Earth with more destructive earthquakes than in any other comparably size area in the United States. The Kona area is subject to earthquakes with intensities up to VIII on the Modified Mercalli Scale.<sup>1</sup>

The most recent damaging earthquakes to impact Hawai‘i occurred on October 15, 2006.

According to the Hawaiian Volcano Observatory:

“...two damaging earthquakes struck the northwest side of Hawai‘i Island early on Sunday morning, October 15, 2006. The first was a magnitude-6.7 that occurred at 7:07 AM HST and was located 20 km northeast of the Kona airport at a depth of 38 km. Seven minutes later, a second earthquake, assigned a magnitude-6.0, struck 44 km north of the Kona airport at a depth of 20 km. While the two were events only 7 minutes apart, the difference in depths means that the M6.0 may not be an aftershock of the M6.7 and that they are independent quakes.

Over 80 aftershocks with magnitudes greater than 1.7 were recorded in the first 24 hours after the quake. The largest was a magnitude 4.2 that occurred at 10:35 AM HST on October 15. Like the second earthquake, preliminary locations for most of the aftershocks placed them at depths less than 20 km.

These earthquakes were felt statewide but most strongly in the North Kona and Kohala areas. The shaking was strong enough to cause power generators to trip offline in Hawai‘i, Maui, and O‘ahu counties. Damage was reported mostly on the west side of Hawai‘i island but also on Maui and O‘ahu. There were no reported fatalities.” (<http://hvo.wr.usgs.gov>)

### 3.4.8 Potential Impacts and Mitigation

The Uniform Building Code (UBC), prepared by the International Conference of Building Officials (ICBO), recommends that the entire island of Hawai‘i meet the UBC standards for Seismic Zone 4 (the highest on the code’s range from 0 to 4). All structures will be constructed in compliance with the UBC standards for Zone 4.

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<sup>1</sup> According to the Federal Emergency Management Agency, during an earthquake with an intensity of VIII on the Modified Mercalli Scale, drivers have trouble steering. Houses that are not bolted down might shift on their foundations. Tall structures such as towers and chimneys might twist and fall. Well-built buildings suffer slight damage. Poorly built structures suffer severe damage. Tree branches break. Hillsides might crack if the ground is wet. Water levels in wells might change.

### 3.4.9 The Impacts of Earthquakes on the Alternative

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action		✓		Regardless of whether the property remains undeveloped or developed, it is subject to the impacts of earthquakes. No mitigation measures are warranted.
2. Proposed Action		✓		Construction of the site will be required to comply with the UBC's standards for Zone 4.
3. Large-Lot Subdivision		✓		Construction of the site will be required to comply with the UBC's standards for Zone 4.
4. Small-Lot Subdivision		✓		Construction of the site will be required to comply with the UBC's standards for Zone 4.

### 3.4.10 Volcanic Hazards – Existing Conditions

The Kula Nei project area is situated on the west facing flank of the Hualālai volcano, over seven miles from the summit. Of the three active volcanoes on the island of Hawai‘i, Hualālai is considered to be the least active. Its last eruption in 1801 produced lava flows that inundated the Ka‘upulehu and Keāhole areas of North Kona. Hualālai is considered by geologists to be representative of a post-shield stage of Hawaiian volcanism, which is characterized by a marked decrease in the eruption rate as the volcano drifts off the Hawaiian hotspot. The estimated lava production rate for Hualālai over the past 3,000 years is about 2 percent of the current rate of Kīlauea volcano.

#### 3.4.10.1 Lava Flows

Hualālai volcano is identified as being fully contained in lava hazard zone 4. Maps showing volcanic hazard zones on the island of Hawai‘i were first prepared in 1974 by Donald Mullineaux and Donald Peterson of the U.S. Geological Survey and were revised in 1987. The current map (Figure 3-5) divides the island into zones that are ranked from 1 through 9 based on the probability of coverage by lava flows, with 9 being the ~~highest~~lowest. Other direct hazards from eruptions, such as tephra fallout and ground cracking and settling, are not specifically considered on the hazard map; however, these hazards also tend to be greatest in the areas of highest hazard from lava flows.

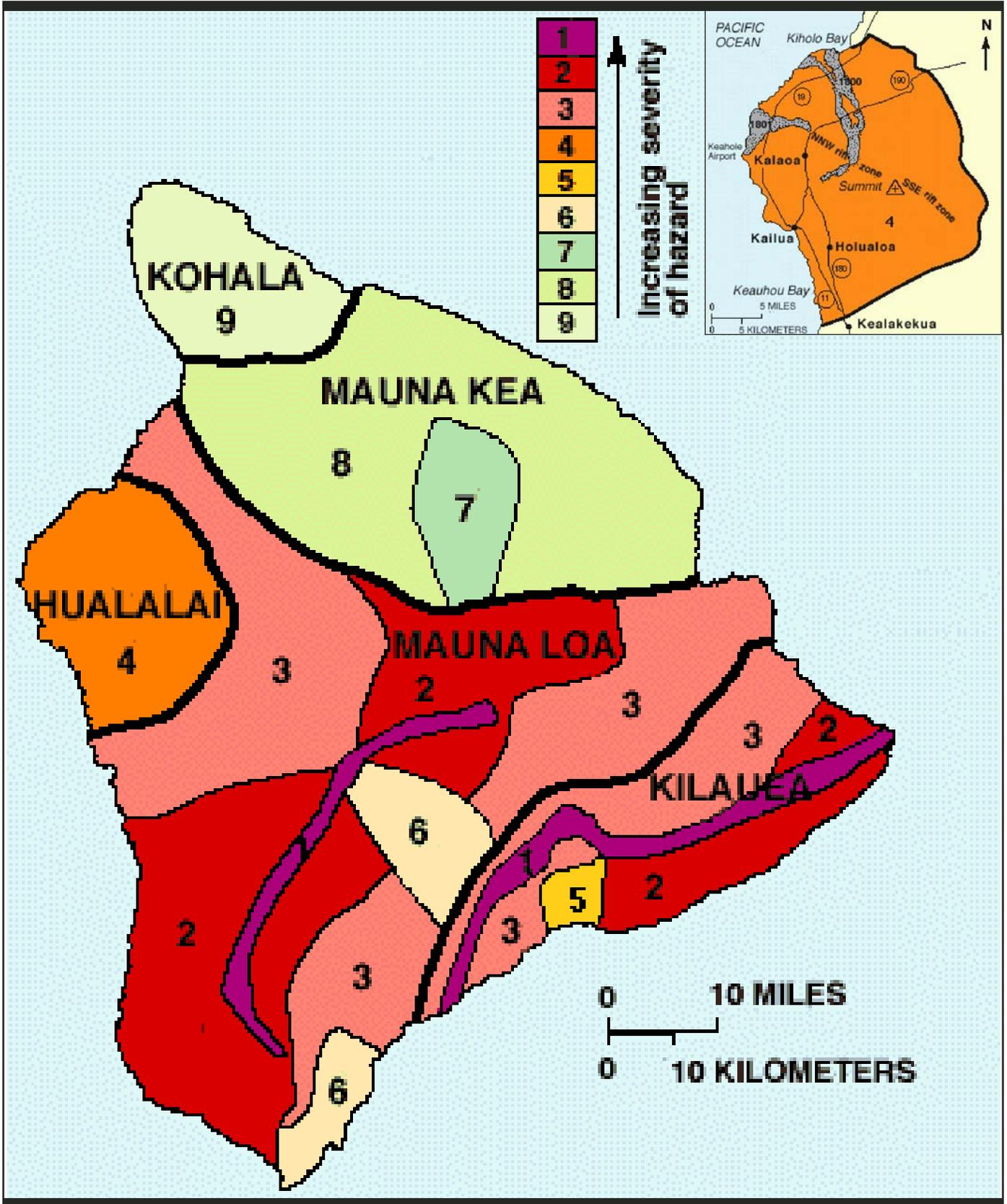
The project area is situated on a *pāhoehoe* and ‘*a‘a* lava flow that originated from a vent at an elevation of about 3,200 feet above msl, approximately two miles upland from the property. The flow is estimated to be approximately 3,040 years old (with an error of 150 years). The Kona Palisades Flow, just north of the project area, occurred in 1801. It is one of several vents on Hualālai that erupted at that time. The 1801 flow is the youngest flow in the immediate area of the project.

### 3.4.10.2 Potential Impacts and Mitigations

According to Drs. Lockwood and Garcia in their recent report on geological conditions at HELCO’s Keāhole Generating Plant (about a mile northwest of the Kula Nei project), Hualālai is a geologically active volcano with clusters of eruptions occurring about every 500 years. Thus, the probability is high that Hualālai will erupt somewhere within the next few centuries. However, the odds are low that such an eruption will threaten the subject property (*Keāhole Generating Station, Final EIS, January 2005*).

### 3.4.10.3 The Impacts of Volcanic Hazards on the Alternatives

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			Based on the statistical probability of risk, the likelihood of volcanic hazards adversely affecting the subject property is minimal. No mitigation measures are warranted.
2. Proposed Action	✓			Based on the statistical probability of risk, the likelihood of volcanic hazards adversely affecting the subject property is minimal. No mitigation measures are warranted.
3. Large-Lot Subdivision	✓			Based on the statistical probability of risk, the likelihood of volcanic hazards adversely affecting the subject property is minimal. No mitigation measures are warranted.
4. Small-Lot Subdivision	✓			Based on the statistical probability of risk, the likelihood of volcanic hazards adversely affecting the subject property is minimal. No mitigation measures are warranted.



**Figure 3-5  
BIG ISLAND LAVA ZONES**

Kula Nei  
North Kona, Hawaii  
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Prepared for The Shopoff Group  
September 2007



### 3.4.10.4 Tephra – Existing Conditions

Tephra is a general term for fragments of volcanic rock and lava that are blown into the air by explosive volcanic eruptions, hot gases in eruptive columns, or by lava fountains. Large-sized tephra typically falls back to the ground close to the erupting vent, forming a cinder cone, while smaller-sized tephra can be carried on the wind as volcanic ash. The largest volcanic eruptions that have occurred on Earth, such as Krakatoa in Indonesia in the early 1800s and Mount Saint Helens in Washington State in the 1980s ejected volcanic ash into the upper atmosphere that was then carried around the planet by winds and remained suspended there for years.

### 3.4.10.5 Potential Impacts and Mitigation Measures

According to the geological study conducted in 2005 for the nearby Keāhole Generating Station, there is no evidence that tephra has fallen in low-lying areas away from Hualālai’s rift zone. As the project is over seven miles downslope from Hualālai’s summit, it is outside of the rift zone. While it is possible that a high fountaining episode during some future eruption of Hualālai could produce ash fall, based on the eruptive character of Hualālai, this hazard is expected to be slight.

### 3.4.10.6 The Impacts of Tephra on the Alternatives

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			Due to the project's location, the risk of tephra fall on the subject property is anticipated to be slight.
2. Proposed Action	✓			Due to the project's location, the risk of tephra fall on the subject property is anticipated to be slight. No mitigation measures are warranted.
3. Large-Lot Subdivision	✓			Due to the project's location, the risk of tephra fall on the subject property is anticipated to be slight. No mitigation measures are warranted.
4. Small-Lot Subdivision	✓			Due to the project's location, the risk of tephra fall on the subject property is anticipated to be slight. No mitigation measures are warranted.

### 3.4.11 Wind Damage – Existing Conditions

Virtually all areas of Hawai‘i are periodically subjected to seasonal high winds that can have damaging effects. These events are typically associated with strong winds associated with storms during the summer and winter, and with the passing of high pressures areas west of the islands during the winter that generate west winds in excess of 50 miles an hour. Wind damage can be destructive, causing power outages and property damage.

Hawai‘i can also be impacted by tropical storms and hurricanes. During the past 26 years, two hurricanes have caused severe damage to the western end of the island chain: Iwa in ~~1981~~1982 and Iniki in ~~1991~~1992. Iwa passed north through the channel between Kaua‘i and O‘ahu, causing damage to coastal areas on both islands. Iniki passed north across Kaua‘i causing severe damage to much of the island.

### 3.4.12 Potential Impacts and Mitigation

The most destructive effects of strong winds results in power outages due to damaged poles and transmission lines, structure damage due to the roofs of homes being blown off, downed vegetation including trees and tree limbs blocking roadways and damaging homes, and wind blown debris impacting residences, businesses, and motor vehicles. Downed vegetation and electrical transmission infrastructure (poles and lines) is often due to termite damage and rot that weakens the tree or pole making it susceptible to wind damage.

The most effective measure for new residential properties is to ensure that hurricane clips (or tie-downs) are used during home construction to help secure the structure’s roof and walls to the foundation.

### 3.4.13 The Impacts of Wind Damage on the Alternatives

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action		✓		If the subject property is undeveloped, its vegetation remains susceptible to wind damage. No mitigation measures, short of clearing the vegetation, are applicable.

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
2. Proposed Action   		✓		The use of hurricane clips during house construction will help to minimize wind damage and reduce airborne debris. The efforts of home-owners to secure loose objects around the yard before periods of high wind can help to reduce the amount of flying debris that can potentially damage neighboring homes. Annual inspection and removal of insect-damaged limbs and trimming of neighborhood trees can also help to reduce airborne debris.
3. Large-Lot Subdivision   		✓		The use of hurricane clips during house construction will help to minimize wind damage and reduce airborne debris. The efforts of home-owners to secure loose objects around the yard before periods of high wind can help to reduce the amount of flying debris that can potentially damage neighboring homes. Annual inspection and removal of insect-damaged limbs and trimming of neighborhood trees can also help to reduce airborne debris.
4. Small-Lot Subdivision   		✓		The use of hurricane clips during house construction will help to minimize wind damage and reduce airborne debris. The efforts of home-owners to secure loose objects around the yard before periods of high wind can help to reduce the amount of flying debris that can potentially damage neighboring homes. Annual inspection and removal of insect-damaged limbs and trimming of neighborhood trees can also help to reduce airborne debris.

### 3.5 FLORA

#### 3.5.1 Existing Conditions

No threatened or endangered species were found during a botanical field survey conducted by Art Whistler, Ph.D., on May 11, 12, and 13, 2007. The survey covered the Primary Project Area and the Accessory Areas. A copy of the botanical report is included in Appendix D. The following is a summary of the report.

The majority of the 109 species encountered over both the Primary Project Area and the Accessory Areas are naturalized “alien” plants. These alien plants were either accidentally or intentionally introduced to Hawai‘i, but have now become established in the islands and are able to spread on their own. Vegetation was classified into three types: (1) Managed Land

Vegetation; (2) Scrub (*Schinus/Psydrax*); and (3) Disturbed Dryland Forest (*Diospyros/Psydrax*). These types are described below.

**Managed Land Vegetation.** This comprises areas that are under periodic or frequent management, which includes bulldozing, mowing, and agriculture. Several parts of the study site fit into this category:

- 1) TMK 7-3-007: 038, 7-3-007: 039, and 7-3-009: 007: The old bulldozed tracks around the main three Primary Project Area parcels.
- 2) TMK 7-3-046: 105. This is a small cleared lot adjacent to and north of the Primary Project Area.
- 3) TMK 7-3-7: 040 and 041. The two parcels of O'oma Plantation, both of which have already been graded.
- 4) TMK 7-3-7: 042 and 043. The two parcels east of O'oma Plantation; parcel 42, which appears to be an abandoned pasture in parts, and parcel 43 ~~which~~ are both used for storage of equipment and materials.
- 5) TMK 7-3-6: 035, 036, and 037. The three Accessory Area lots located above Māmalahoa Highway are currently used as home sites and/or as pasture and large lawn area.

#### Roads Around Primary Project Area

The bulldozed roads around the primary project area parcels are dominated by alien species, mostly herbs, shrubs, young trees, and grasses. The most dominant species is fountain grass (*Pennisetum setaceum*), with lesser amounts of the Natal redtop (*Rhynchelytrum repens*), and molasses grass (*Melinis minutiflora*); the shrubs include indigo (*Indigofera suffruticosa*), 'uhaloa (*Waltheria indica*), lantana (*Lantana camara*), blue rat's-tail (*Stachytarpheta cayennensis*), and 'ilima (*Sida fallax*); the herbs include the herbaceous life plant (*Kalanchoë pinnata*); the vine is huehue (*Cocculus triloba*); and saplings ~~of~~ are Christmas berry (*Schinus terebinthifolius*); and koa haole (*Leucaena leucocephala*). The 'uhaloa, 'ilima, and huehue are

all native species, but are common indigenous weeds in Hawai‘i. Some areas appear to have been bulldozed more recently than the others, and are only sparsely vegetated.

### Along Homestead Road

In one location along the route of Homestead Road, a small patch of the endemic sub-shrub *Bidens micrantha* ssp. *ctenophylla* (ko‘oko‘olau) was observed. Although this species was once a candidate for federal listing as endangered or threatened, it was never classified as such, and hence has no protected status.

### Accessory Areas: ‘O‘oma Plantation – TMK: 7-3-007: 040 and 041

The largest of the Kula Nei Accessory Areas that were studied are the two lots that comprise O‘oma Plantation. These have been graded for residential development and nearly all vegetation has been removed. A number of weed species were present, but most were dead. Approximately one-third of the alien weedy species encountered during the survey were found in the ‘O‘oma Plantation parcels, including comb hyptis (*Hyptis pectinatus*), wild peppergrass (*Lepidium virginicum*), currant tomato (*Lycopersicon pimpinellifolium*), sow thistle (*Sonchus oleraceus*), bitter melon (*Momordica charantia*), and Natal redtop (*Rhynchelytrum repens*).

The parcels contain archaeological site enclosures bounded by rock walls. The dominant species inside the enclosures include scattered Christmas berry (*Schinus terebinthifolius*) and *alahe‘e* (*Psydrax odoratum*) trees in an open matrix dominated by fountain grass (*Pennisetum setaceum*) and several other species of weedy shrubs, herbs, and grasses. Also present in the O‘oma Plantation parcels is a new planting of coffee trees.

### Accessory Areas: TMK 7-3-007: 042 and 043

These two parcels are highly disturbed and dominated mostly by herbaceous vegetation. Over one-third of the alien species ~~listed found and listed~~ in Table 3-1 were found on these two parcels, with the only native species being weedy ones, such as the common native grass *kukaepua‘a* (*Digitaria setigera*) and scattered individuals of ‘*ohi‘a lehua* (*Metrosideros*

*polymorpha*), which is a remnant of the natural vegetation that covered this area prior to human disturbance.

**Table 3-1: FLORA**

Species	Common Name	Status
<i>Bidens micrantha</i> ssp. <i>ctenophylla</i> (Asteraceae)	ko'oko'olau	E
<i>Caesalpinia bonduc</i> (Fabaceae)	gray knickers, kakalaioa	I
<i>Cocculuc trilobus</i> (Menispermaceae)	huehue	I
<i>Digitaria setigera</i> (Poaceae)	kukaepua'a	I
<i>Diospyros sandwicensis</i> (Ebenaceae)	lama	E
<i>Dodonaea viscosa</i> (Sapindaceae)	a'ali'i	I
<i>Ipomoea indica</i> (Convolvulaceae)	koali-'awa	I
<i>Metrosideros collina</i> (Myrtaceae)	'ohi'a lehua	E
<i>Myoporum sandwicense</i> (Myoporaceae)	naio	I
<i>Osteomeles anthyllidifolia</i> (Rosaceae)	'ulei	I
<i>Peperomia leptostachya</i> (Piperaceae)	'ala'ala-wai-nui	I
<i>Psilotum nudum</i> (Psilotaceae)	moa	I
<i>Psydrax odoratum</i> (Rubiaceae)	alahe'e	I
<i>Reynoldsia sandwicensis</i> (Araliaceae)	'ohe makai	E
<i>Senna gaudichaudii</i> (Fabaceae)	kolomona	I
<i>Sida fallax</i> (Malvaceae)	'ilima	I
<i>Solanum americanum</i> (Solanaceae)	popolo	I ♀
<i>Sophora chrysophylla</i> (Fabaceae)	mamane	E
<i>Waltheria indica</i> (Sterculiaceae)	'uhaloa	I

E = endemic (found only in Hawai'i).

I = indigenous (native to Hawai'i as well as other geographic areas).

P = Polynesian introduction (introduced to Hawai'i by Polynesians before the advent of the Europeans).

X = Introduced or alien (not native, introduced to Hawai'i, either accidentally or intentionally, after the advent of the Europeans).

Accessory Areas: TMK 7-3-006: 035, 036, 307

The three Accessory Area parcels *mauka* of Māmalahoa Highway are in an established subdivision. TMK 7-3-006: 035 is dominated by cultivated plants, trees, and shrubs (most of which are not listed in Table 3-1 because they are not native or naturalized). TMK 7-3-006: 036 has several scattered '*ohi'a lehua* (*Metrosideros polymorpha*) and silk oak (*Grevillea robusta*)

trees that were apparently left standing when the land was cleared. TMK 7-3-006: 037 is a well-manicured house lot.

**Scrub (*Schinus/Psydrax*).** Scrub covers most of the Primary Project Area parcels. The main species dominating this community is the alien tree Christmas berry (*Schinus terebinthifolius*), along with somewhat lesser amounts of the indigenous tree *alahe'e* (*Psydrax odoratum*).

Scrub somewhat matches the description of the “Lowland Dry Shrublands”, which is described as occurring in leeward situations on most of the main islands, between the 330 and 2,000 foot elevation, and being open and not exceeding 10 feet in height.

The third most prevalent tree in this community is strawberry guava (*Psidium cattleianum*), which is often found in clusters, particularly on TMK 7-3-007: 039 of the Primary Project Area. Other trees occasional to uncommon in this type of vegetation include tall individuals of silk oak (*Grevillea robusta*) and the native shrub or tree *'ulei* (*Osteomeles anthyllidifolia*).

The endemic *'ohe makai* (*Reynoldsia sandwicensis*), the endemic shrub or tree *mamane* (*Sophora chrysophylla*), and the indigenous shrub *'a'ali'i* (*Dodonaea viscosa*) are occasional to uncommon, while the Polynesian introductions noni (*Morinda citrifolia*) and candlenut (*Aleurites moluccana*) are occasional. Koa haole (*Leucaena leucocephala*) is uncommon in the scrub forest, but sometimes forms dense patches in more open areas.

Ground cover is sparse in this type of vegetation. Scattered clumps of fountain grass (*Pennisetum setaceum*), found mostly in pockets of soil or *pāhoehoe* lava, is perhaps the most common species present. Fountain grass is particularly sparse under the dense canopy of the Christmas berry trees, where *lawa'e* fern (*Phymatosorus grossus*) is one of the few plants that can survive in the dense shade there.

The next most common species of ground cover is the air plant (*Kalanchoë pinnata*), which forms a dense undergrowth in some places, particularly under light canopy, but is entirely lacking in other places. Where the canopy opens up, as on patches of old lava flows, plants such as *huehue* (*Cocculus trilobus*), which is common as a vine in all forests at the study site, and the thorny alien shrub lantana (*Lantana camara*) are occasional to common.

**Disturbed Scrub (*Diospyros/Psydrax*):** This type of forest appears within the study area only on TMK 7-3-009: 008, which is owned by the State of Hawai‘i. The Disturbed Scrub is dominated by three tree species, *alahe‘e* (*Psydrax odoratum*), lama (*Diospyros sandwicensis*), and Christmas berry (*Schinus terebinthifolius*). The Disturbed Scrub is similar to the Scrub (*Schinus/Psydrax*), but the Disturbed Scrub has a much higher percentage of lama (*Diospyros sandwicensis*), and is consequently much less disturbed than the latter vegetation.

The first two of the dominant trees here are native species and the Christmas berry is an alien species, which is why this vegetation type is called “disturbed.” The least disturbed forest, which is located on the State-owned TMK 7-3-009: 008, covers the area included in the Holoholo Street extension corridor and the rest of TMK 7-3-009: 008.

Other tree species found on TMK 7-3-009: 008 include the Polynesian introductions noni (*Morinda citrifolia*) and candlenut (*Aleurites moluccana*); the alien species koa haole (*Leucaena leucocephala*), silk oak (*Grevillea robusta*), umbrella tree (*Schefflera actinophylla*), and strawberry guava (*Psidium cattleianum*); and the native trees ‘ulei (*Osteomeles anthyllidifolia*), which is common in this forest, and ‘ohe makai (*Reynoldsia hawaiiensis*) and naio (*Myoporum sandwicense*), both of which are uncommon. In some places, particularly where there is more soil development, koa haole may dominate, usually with a dense ground cover of life plant (*Kalanchoë pinnata*).

The ground cover in this type of vegetation is variable. When the canopy is broken or sparse, patches of fountain grass (*Pennisetum setaceum*) prevail. This is also the case in clearings, probably associated with rocky soil or lava outcroppings. Fountain grass is quite dense in these situations, and only a few other species, such as lawai fern (*Phymatosorus grossus*) and lantana (*Lantana camara*) are associated with it.

Other species common in sunny places include life plant (*Kalanchoë pinnata*), and lesser amounts of rouge plant (*Rivina humilis*), the native vine huehue (*Cocculus triloba*), and uncommon individuals or patches of the native herb ‘ala‘ala-wai-nui (*Peperomia leptostachya*).

### Summary of the Flora

A total of 109 plant species (Table 3-2) was recorded, of which 19 (nineteen) are native and of those native species, 5 (five) are endemic. Endemic plants are species restricted to a single region or area; in the case of Hawai‘i, they are found only in Hawai‘i. Indigenous plants are species that are native to a region or place, but are also found elsewhere other than Hawai‘i.

In biodiversity terms, the endemic status is the more important of the two categories. Indigenous species, however, can be rare in Hawai‘i, but may be common elsewhere in the Pacific. Over 90 percent of the native plants in Hawai‘i are endemic, one of the highest rates in the world.

The majority of the 109 species encountered during the survey are naturalized “alien” plants that were accidentally or intentionally introduced to Hawai‘i, but which have now become established in the islands and can spread on their own. The species found in the study area are listed in Table 3-2.

**Table 3-2: KULA NEI PLANT SPECIES**

Species	Common Name	Status	Life Form
<b>FERNS AND FERN ALLIES</b>			
NEPHROLEPIDACEAE (Sword Fern Family)			
<i>Nephrolepis multiflora</i> (Roxb.)	hairy swordfern	X	fern
Jarret ex Morton POLYPODIACEAE (Common Fern Family)			
<i>Phymatosorus grossus</i>	laua'e	X	fern
(Langsd. & Fisch.) Brownlie PSILOTACEAE (Psilotum Family)			
<i>Psilotum nudum</i> L.	moa	I	Fern ally
<b>MONOCOTS</b>			
AGAVACEAE (Agave Family).			
<i>Cordyline fruitcosa</i> (L.) A. Chev.	ti, ki	P	shrub
ARECACEAE (Palm Family)			
<i>Cocos nucifera</i> L.	coconut palm, niu	P	palm
COMMELINACEAE (Spiderwort Family)			
<i>Commelina benghalensis</i> L.	hairy honohono	X	herb
<i>Rhoeo spathacea</i> (Sw.) Stearn	oyster plant	X	herb
POACEAE (Grass Family)			
<i>Digitaria setigera</i> Roth	kukaepua'a	I	grass
<i>Eleusine indica</i> (L.) Gaertn.	goose grass	X	grass
<i>Leptochloa uninervia</i> (K. Presl) Hitchc. & Chase	---	X	grass
<i>Melinis minutiflora</i> P. Beauv.	molasses grass	X	grass
<i>Oplismenus</i> cf. <i>hirtellus</i> (L.) P. Beauv.	basket grass	X	grass
<i>Panicum maximum</i> Jacq.	Guinea grass	X	grass
<i>Pennisetum clandestinum</i> Chiov.	<i>kikuyu</i> grass	X	grass
<i>Pennisetum purpureum</i> Schumach.	elephant grass	X	grass
<i>Pennisetum setaceum</i> (Forssk.) Chiov.	fountain grass	X	grass
<i>Rhynchelytrum repens</i> (Willd.) C.E. Hubb.	Natal redtop	X	grass
<i>Sporobolus diander</i> (Retz.) P. Beauv.	dropseed	X	grass
<b>DICOTS</b>			
ACANTHACEAE (Acanthus Family)			
<i>Barleria repens</i> Nees	coral creeper	X	subshrub
<i>Justicia betonica</i> L.	white shrimp-plant	X	shrub
<i>Thunbergia alata</i> Bojer ex Sims	black-eyed Susan	X	vine
AMARANTHACEAE (Amaranth Family)			
<i>Amaranthus viridis</i> L.	slender amaranth	X	herb

Species	Common Name	Status	Life Form
ANACARDIACEAE (Mango Family)			
<i>Mangifera indica</i> L.	mango	X	tree
<i>Schinus molle</i> L.	Peruvian pepper tree	X	tree
<i>Schinus terebinthifolius</i> Raddi	Christmas betty	X	tree
ARALIACEAE			
<i>Reynoldsia sandwicensis</i> A. Gray	'ohe makai	E	tree
<i>Schefflera actionphylla</i> (Endl.) Harms	octopus tree	X	tree
ASCLEPIADACEAE (Milkweed Family)			
<i>Asclepias physocarpa</i> (E. Mey.) Schlechter	balloon plant	X	shrub
ASTERACEAE (Sunflower Family)			
<i>Bidens micrantha</i> Gaud. Subsp. <i>ctenophylla</i> (Sherff) Nagatga & Ganders	---	E	subshrub
<i>Bidens pilosa</i> L.	beggar's-tick	X	herb
<i>Cirsium vulgare</i> (Savi) Ten.	bull thistle	X	herb
<i>Conyza Canadensis</i> (L.) Cronq.	Canada fleabane	X	herb
<i>Emilia fosbergii</i> Nicolson	red pualele, emilia	X	herb
<i>Emilia sonchifolia</i> (L.) DC.	pualele, emilia	X	herb
<i>Parthenium hysterophorus</i> L.	Santa Maria	X	herb
<i>Pluchea carolinensis</i> (Jacq.) G. Don	pluchea	X	herb
<i>Senecio madagascariensis</i> Poir.	---	X	herb
<i>Sonchus oleraceus</i> L.	sow thistle	X	herb
BEGONIACEAE (Begonia Family)			
<i>Begonia hirtella</i> Link	---	X	herb
BIGNONIACEAE (Bignonia Family)			
<i>Jacaranda mimosifolia</i> D. Don	jacaranda	X	tree
BRASSICACEAE (Mustard Family)			
<i>Lepidium virginicum</i> L.	wild peppergrass	X	herb
BUDDLEIACEAE (Butterfly-bush Family)			
<i>Buddleia asiatica</i> Lour.	dogtail, heulo'ilio	X	shrub
CACTACEAE (Cactus Family)			
<i>Opuntia ficus-indica</i> (L.) Mill.	prickly pear, panini	X	shrub
CARICACEAE (Papaya Family)			
<i>Carica papaya</i> L.	papaya	X	tree
CLUSIACEAE (Mangosteen Family)			
<i>Clusia rosea</i> Jacq.	autograph tree	X	tree
CONVOLVULACEAE (Morning-Glory Family)			
<i>Ipomoea indica</i> (J. Burm.) Merr.	koali-awa	I	vine

Species	Common Name	Status	Life Form
CRASSULACEAE (Stonecrop Family)			
<i>Kalanchoë pinnata</i> (Lam.) Pers.	air plant	X	herb
<i>Kalanchoë tubiflora</i> (Haw.) Raym.-Hamet	chandelier plant	X	herb
CUCURBITACEAE (Gourd Family)			
<i>Coccinea grandis</i> (L.) Voigt	ivy gourd	X	vine
<i>Momordica charantia</i> L.	wild bittermelon	X	vine
EBENACEAE (Ebony Family)			
<i>Diospyros sandwicensis</i> (A.DC.) Fosb.	lama	E	tree
EUPHORBIACEAE (Spurge Family)			
<i>Aleurites moluccana</i> (L.) Willd.	candlenut, kukui	P	tree
<i>Chamaesyce hirta</i> (L.) Millsp.	garden spurge	X	herb
<i>Euphorbia heterophylla</i> L.	kaliko	X	herb
<i>Ricinus communis</i> L.	castor bean	X	shrub
FABACEAE (Pea Family)			
<i>Caesalpinia bonduc</i> (L.) Roxb.	gray knickers, kakalaioa	I	shrub
<i>Canavalia cathartica</i> Thouars	mauna-loa	X	vine
<i>Chamaecrista nictitans</i> (L.) Moench	partridge pea, lau-ki	X	herb
<i>Crotalaria micans</i> Link	---	X	subshrub
<i>Crotalaria pallida</i> Aiton	smooth rattlepod	X	subshrub
<i>Desmanthus pernambucanus</i> (L.) Thellung	virgate mimosa	X	herb
<i>Desmodium incanum</i> DC.	Spanish clover	X	herb
<i>Glycine wightii</i> (Wight & Arn.) Verdc.	---	X	vine
<i>Indigofera suffruticosa</i> Mill.	indigo, 'iniko	X	shrub
<i>Leucaena leucocephala</i> (Lam.) de Wit	koa haole	X	tree
<i>Mimosa pudica</i> L.	sensitive plant	X	herb
<i>Senna gaudichaudii</i> (Hook. & Arn.) H. Irwin & Barneby	kolomona	I	tree
<i>Senna occidentalis</i> (L.) Link	coffee senna	X	shrub
<i>Senna septemtrionalis</i> (Viv.)___ H. Irwin & Barneby	kolomona	X	shrub
<i>Sophora chrysophylla</i> (Salisb.) Seem.	mamane	E	tree
<i>Vigna speciosa</i> (Kunth) Verdc.	snail maunaloa	X	vine
LAMIACEAE (Mint Family)			
<i>Hyptis pectinata</i> (L.) Poir.	comb hyptis	X	herb
MALVACEAE (Mallow Family)			
<i>Abutilon grandifolium</i> (Willd.) Sweet	hairy abutilon	X	shrub
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	X	herb
<i>Sida fallax</i> Walp.	'ilima	I	subshrub

Species	Common Name	Status	Life Form
<i>Sida rhombifolia</i> L.	Cuba jute	X	subshrub
MELIACEAE (Mahogany Family)			
<i>Melia azedarach</i> L.	Chinaberry tree	X	tree
MENISPERMACEAE (Moonseed Family)			
<i>Cocculus trilobus</i> (Thunb.) DC.	huehue	I	vine
MYOPORACEAE (False-sandalwood Family)			
<i>Myoporum sandwicense</i> A. Gray	naio, false sandalwood	I	tree
MYRTACEAE (Myrtle Family)			
<i>Metrosideros polymorpha</i> Gaud.	'ohi'a lehua	E	tree
<i>Psidium cattleianum</i> Sabine	strawberry guava	X	tree
<i>Psidium guajava</i> L.	guava	X	tree
<i>Syzygium jambos</i> (L.) Alston	rose apple	X	tree
OLEACEAE (Olive Family)			
<i>Olea europa</i> L.	olive	X	tree
OXALIDACEAE (Wood-Sorrel Family)			
<i>Oxalis corniculata</i> L.	wood sorrel	P?	herb
PASSIFLORACEAE (Passionflower Family)			
<i>Passiflora edulis</i> Sims	passionfruit, liliko'i	X	vine
<i>Passiflora foetida</i> L.	love-in-a-mist	X	vine
<i>Passiflora suberosa</i> L.	---	X	vine
PHYTOLACCACEAE (Pokeweed Family)			
<i>Rivina humilis</i> L.	rouge plant	X	herb
PIPERACEAE (Pepper Family)			
<i>Peperomia leptostachya</i> Hooker & Arnott	'ala'ala-wai-nui	I	herb
POLYGALACEAE (Milkwort Family)			
<i>Polygala paniculata</i> L.	bubblegum plant	X	herb
PORTULACACEAE (Purslane Family)			
<i>Portulaca oleracea</i> L.	common purslane	X	herb
<i>Portulaca pilosa</i> L.	'ihi	X	herb
PROTACEAE (Protea Family)			
<i>Grevillea robusta</i> A. Cunn. ex R. Br.	silk oak	X	tree
ROSACEAE (Rose Family)			
<i>Osteomeles anthyllidifolia</i> (Sm.) Lindl.	'ulei	I	shrub
RUBIACEAE (Coffee Family)			
<i>Morinda citrifolia</i> L.	Indian mulberry, noni	P	tree
<i>Psychradax odoratum</i> (Forst. f.) A.C. Sm. & S. Darwin	alaha'e	I	tree

Species	Common Name	Status	Life Form
RUTACEAE (Citrus Family)			
<i>Murraya paniculata</i> (L.) Jack.	mock orange	X	shrub
SAPINDACEAE (Soapberry Family)			
<i>Dodonaea viscosa</i> Jacq.	'a'ali'i	I	shrub
SCROPHULARIACEAE (Snapdragon Family)			
<i>Lophospermum erubescens</i> D. Don	larger roving sailer	X	herb
<i>Russelia equisetifolia</i> Schlttdl. & Champ	firecracker plant	X	subshrub
SOLANACEAE (Nightshade Family)			
<i>Lycopersicon pimpinellifolium</i> (Jusl.) Mill.	currant tomato	X	herb
<i>Solanum americanum</i> Mill.	black nightshade, popolo	I?	herb
<i>Solanum torvum</i> Sw.	prickly solanum	X	shrub
STERCULIACEAE (Cacao Family)			
<i>Melochia umbellata</i> (Houtt.) Stapf	---	X	tree
<i>Waltheria indica</i> L.	'uhaloa	I	subshrub
VERBENACEAE (Verbena Family)			
<i>Lantana camara</i> L.	lantana	X	shrub
<i>Stachytarpheta cayennensis</i> (Rich.) Vahl	blue rat's-tail	X	subshrub
<i>Stachytarpheta dichotoma</i> (Ruiz & Pav.) Vahl	owi	X	subshrub

E = endemic (found only in Hawai'i)

I = indigenous (native to Hawai'i as well as other geographic areas.)

P = Polynesian introduction (introduced to Hawai'i by Polynesians before the advent of the Europeans).

X = Introduced or alien (not native, introduced to Hawai'i, either accidentally or intentionally, after the advent of the Europeans.)

Several threatened or endangered species have been reported in the area, but none were found on the Primary Project Area or Accessory Areas. A small population of a "Species of Concern"—*Bidens micrantha* ssp. *Ctenophylla* — was found in a bulldozed area along Homestead Road. The small population found within the project area constitutes a new record to add to those noted by the USFWS:

*"The majority of the wild individuals occur in two population areas: the privately owned Kaloko Honokohau lava flow area (approximately 1,000 plants), and the State-owned Department of Hawaiian Home Lands (DHHL) Kealakehe population (approximately 1,000 - 2,000 plants). The remaining 5 wild individuals exist on State land at PuuWaaWaa Wildlife Sanctuary."*

### 3.5.2 Potential Impacts and Mitigation

No federally listed “threatened” or “endangered” species were found. The botanical survey found that there are three types of vegetation: (1) **Managed Land Vegetation** in bulldozed roads in the Primary Project Area, TMKs 7-3-007: 040, 041, 042, 043 and the lots *mauka* of Māmalahoa Highway at TMKs 7-3-006: 035, 036, 037; (2) **Scrub** (*Schinus/Psydrax*) dominated by Christmas berry (*Schinus terebinthifolius*) and *alahe‘e* (*Psydrax odoratum*), which covers the Primary Project Area TMKs 7-3-007: 038, 039 and 7-3-009: 007; and (3) **Disturbed Scrub** (*Diospyros/Psydrax*) on TMK 7-3-009: 008, where an extension of Holoholo Street is planned.

A total of 109 plant species were recorded from the study site (Table 3-2). Of these, 19 are native species—14 indigenous species and 5 endemic species. One candidate species, *ko‘oko‘olau* (*Bidens micrantha* ssp. *ctenophylla*) was found in a bulldozed road area, and several individuals of the “Species of Concern” *‘ohe makai* (*Reynoldsia hawaiiensis*) were found within the project area, but these species have no federal protection. No areas of wetlands or undisturbed native vegetation occur at the site. There are no botanical impediments to the proposed development. Because no species are federally listed as threatened or endangered, no mitigation is needed.

The least disturbed forest is located on TMK 7-3-009: por 008, through which the Holoholo St. extension corridor is planned. This parcel is owned by the State of Hawai‘i.

### 3.5.3 The Impacts of the Alternatives on Terrestrial Flora

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			If the subject property is undeveloped, its vegetation will remain undisturbed.
2. Proposed Action		✓		No threatened or endangered species were found. The majority of the species found are naturalized alien plants. Potential impacts are not anticipated to be significant adverse impacts because no endangered species are present. No mitigation measures are warranted.

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
3. Large-Lot Subdivision		✓		No threatened or endangered species were found. The majority of the species found are naturalized alien plants. Potential impacts are not anticipated to be significant adverse impacts because no endangered species are present. No mitigation measures are warranted.
4. Small-Lot Subdivision		✓		No threatened or endangered species were found. The majority of the species found are naturalized alien plants. Potential impacts are not anticipated to be significant adverse impacts because no endangered species are present. No mitigation measures are warranted.

### 3.6 FAUNA

No threatened, endangered or native species of birds or mammals were observed on the Primary Project Area or the Accessory Areas during faunal field surveys conducted in April and July 2006 (Bruner 2006). The array of species recorded is typical of what would be expected in this area. No unexpected species were recorded. The results of the field surveys are summarized below. The complete reports are included as Appendix E.

Environmental Consultant, Dr. Phillip L. Bruner, conducted field surveys of the Primary Project Area and the Accessory Areas. The goals of the surveys were to document the species of birds and mammals currently on the property, identify natural resources available to wildlife in this region, and document the potential presence and possible use of the property by native and migratory species, particularly those that are listed as threatened or endangered.

Dr. Bruner surveyed the lots on foot and all birds seen or heard were noted. He accumulated data during the early morning and later in the day when birds are most active and easily detectable. The early evening period was used to search the property for the presence of the endangered Hawaiian Hoary Bat. Observations of mammals were limited to visual sightings and evidence in the form of tracks and skeletal remains. No trappings were conducted.

### 3.6.1 Existing Conditions

#### 3.6.1.1 Avifauna – Native, Migratory, and Introduced Birds

##### Primary Project Area

Dr. Bruner reported that no native land birds were observed during the survey of the Primary Project Area. No native waterbirds were observed, nor would any be expected at this site according to Dr. Bruner. No wetland habitat occurs on the property. No nesting seabirds were observed and none would be expected on this site given its location and easy access to ground predators. The Hawaiian Hoary Bat was not observed.

In terms of migratory shorebirds, two Pacific Golden-Plover were seen flying over the Primary Project Area during the course of the survey. However, there is no suitable habitat for foraging plovers on the site. No other species of migratory shorebirds were recorded, nor would they be expected to be on this property. None of the shorebirds that regularly “winter” in Hawai‘i are listed as threatened or endangered.

Given the habitats available on the Primary Project Area, the only potential native lands birds that might on occasion forage in this area are the Hawaiian or Short-eared Owl (known as *Pueo* in Hawaiian) and the *‘Io* or Hawaiian Hawk. These birds forage in a variety of habitats including forests, agricultural lands, and grasslands. The *Pueo* is not listed as endangered or threatened on the island of Hawai‘i. The *‘Io* is an endangered species and is confined to the island of Hawai‘i. Neither was observed during the field surveys.

A total of 14 species were recorded on the survey, all of which were introduced (non-native). They are listed in Table 3-3. None of the introduced birds are listed as threatened or endangered.

**Table 3-3: INTRODUCED SPECIES OF BIRDS FOUND ON  
PRIMARY PROJECT AREA  
TMKs 7-3-7: 038, 039; 7-3-9: 007  
(April 15 and 16, 2006)**

COMMON NAME	SCIENTIFIC NAME
Gray Francolin	<i>Francolinus pondicerianus</i>
Kalij Pheasant	<i>Lophura leucomelanos</i>
Spotted Dove	<i>Streptopelia chinensis</i>
Zebra Dove	<i>Geopelia striata</i>
Mitred Parakeet	<i>Aratinga mitrata</i>
Red-billed Leiothrix	<i>Leiothrix lutea</i>
Japanese White-eye	<i>Zosterops japonicus</i>
Northern Mockingbird	<i>Mimus polyglottos</i>
Common Myna	<i>Acridotheres tristis</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
House Finch	<i>Carpodacus mexicanus</i>
African Silverbill	<i>Lonchura cantans</i>
Nutmeg Mannikin	<i>Lonchura punctulata</i>
Java Sparrow	<i>Padda oryzivora</i>

### Accessory Areas

Dr. Bruner reported that no native land birds were observed during the survey of the Accessory Areas. No native waterbirds were observed, nor would any be expected in this area according to Dr. Bruner. No wetland habitat occurs on the Accessory Areas. No nesting seabirds were observed and none would be expected in this area due to predator access and human disturbance.

No migratory shorebirds, such as the Pacific Golden-Plover, were observed, which was not unexpected given that the survey was conducted in July. Most of those migratory shorebirds nest in the ~~arctic~~ Arctic between May and August. The open areas on the Accessory Area lots are likely used by foraging plovers from August to the end of April. The Pacific Golden-Plover is not listed as endangered or threatened.

Based on the elevation and habit of the Hawaiian or Short-eared Owl (*Pueo*) and the 'Io or Hawaiian Hawk, these birds could potentially forage or rest on any of the Accessory Area lots.

The Hawaiian Owl is not listed as endangered or threatened on the island of Hawai‘i. The ‘Io is an endangered species and is confined to the island of Hawai‘i. Neither was observed during the field surveys.

A total of 11 introduced (non-native) species were recorded on the surveys of the Accessory Area lots and are listed in the following three tables (Tables 3-4, 3-5, and 3-6). None of the recorded bird species are listed as threatened or endangered.

**Table 3-4: INTRODUCED SPECIES OF BIRDS FOUND ON ACCESSORY AREAS  
TMKs 7-3-7: 42, 43  
(July 20 and 21, 2006)**

COMMON NAME	SCIENTIFIC NAME
Kalij Pheasant	<i>Lophura leucomelanos</i>
Wild Turkey	<i>Meleagris gallopavo</i>
Spotted Dove	<i>Streptopelia chinensis</i>
Zebra Dove	<i>Geopelia striata</i>
Japanese White-eye	<i>Zosterops japonicus</i>
Common Myna	<i>Acridotheres tristis</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
House Finch	<i>Carpodacus mexicanus</i>
Nutmeg Mannikin	<i>Lonchura punctulata</i>
Java Sparrow	<i>Padda oryzivora</i>

**Table 3-5: INTRODUCED SPECIES OF BIRDS FOUND ON ACCESSORY AREAS  
TMKs 7-3-6: 035, 036, 037  
(July 20 and 21, 2006)**

COMMON NAME	SCIENTIFIC NAME
Spotted Dove	<i>Streptopelia chinensis</i>
Zebra Dove	<i>Geopelia striata</i>
Japanese White-eye	<i>Zosterops japonicus</i>
Common Myna	<i>Acridotheres tristis</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
House Finch	<i>Carpodacus mexicanus</i>

**Table 3-6: INTRODUCED SPECIES OF BIRDS FOUND ON HOLOHOLO STREET EXTENSION ACCESSORY AREA  
TMKs 7-3-9: por. 008  
(July 20 and 21, 2006)**

COMMON NAME	SCIENTIFIC NAME
Kalij Pheasant	<i>Lophura leucomelanos</i>
Spotted Dove	<i>Streptopelia chinensis</i>
Zebra Dove	<i>Geopelia striata</i>
Red-billed Leiothrix	<i>Leiothrix lutea</i>
Japanese White-eye	<i>Zosterops japonicus</i>
Common Myna	<i>Acridotheres tristis</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
House Finch	<i>Carpodacus mexicanus</i>
Nutmeg Mannikin	<i>Lonchura punctulata</i>

### **3.6.1.2 Mammals**

#### **Primary Project Area**

Five small Indian Mongoose were the only mammals actually seen on the Primary Project Area lots. The tracks of cats and feral pigs were observed in several places, including skeletal remains of a pig. The endangered Hawaiian Hoary Bat was not recorded on the evening search using the ultrasound detector. It may be possible that it may occasionally forage or roost on or around this site.

#### **Accessory Areas**

The introduced Small Indian Mongoose was the only mammal seen on the survey of the Accessory Area lots.

### **3.6.1.3 Threatened and Endangered Species**

The Primary Project Area and the Accessory Areas do not contain any threatened or endangered species. These areas do not contain any unusual or unique habitat important to native or migratory birds or animals.

### 3.6.2 Potential Impacts and Mitigation

No impacts on terrestrial fauna are likely to occur as a result of the proposed project and improvements. The use of these properties should pose no threat to the relative abundance of birds and mammals in this region of the island of Hawai'i. The natural faunal resources of the property are not unusual or unique. The properties do not contain any unusual or unique habitat important to fauna. Most undeveloped lands at this elevation in North Kona have similar disturbed resources. No mitigation measures are warranted.

### 3.6.3 The Impacts of the Alternatives on Terrestrial Fauna

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			There would be no adverse impacts to faunal resources under the No Action Alternative. The Primary Project Area and Accessory Areas do not contain any threatened or endangered fauna species. The properties do not contain any unusual or unique habitat important to fauna.
2. Proposed Action	✓			The proposed use of the Primary Project Area and Accessory Areas should pose no threat to the relative abundance of birds and mammals in this region of the island of Hawai'i. These properties do not contain any threatened or endangered fauna species and they do not contain any unusual or unique habitat important to fauna. No mitigation measures are warranted.
3. Large-Lot Subdivision	✓			The proposed use of the Primary Project Area and Accessory Areas under the Large-Lot Subdivision Alternative should pose no threat to the relative abundance of birds and mammals in this region of the island of Hawai'i.
4. Small-Lot Subdivision	✓			The proposed use of the Primary Project Area and Accessory Areas under the Small-Lot Subdivision Alternative should pose no threat to the relative abundance of birds and mammals in this region of the island of Hawai'i.

## 3.7 CAVE FAUNA

### 3.7.1 Existing Conditions

None of the obligate cave fauna now known from the island of Hawai‘i are currently listed as endangered species by the USFWS. Therefore, no threatened or endangered species were found in the project area.

In 2006, SWCA Environmental Consultants (SWCA) investigated lava tube caves within the three parcels of the Primary Project Area of the Kula Nei project, TMKs: 7-3-007: 038, 039, and 7-3-009: 007. The three parcels lie along the southwest flank of the Hualālai volcano, and are underlain with both *pāhoehoe* and ‘*a‘a* lavas. The objectives of the study included: 1) biological and geophysical surveys of caves within the Kula Nei project area; 2) identification of biologically significant caves; 3) a list of species found in the caves; and 4) providing management recommendations for the more biologically significant caves. A copy of the report is in Appendix F.

Lavas within the project area consist of both ‘*a‘a* and *pāhoehoe*. Voids can occur in ‘*a‘a*, but *pāhoehoe* is strongly associated with the presence of lava tube caves. Lava tube caves form readily when the surface crust of a *pāhoehoe* flow cools and insulates the underlying flow allowing it to travel for many miles without losing its heat energy. As the eruption ceases, the molten lava drains from the tube leaving an empty passage. Sections of lava tube often collapse creating skylights, sinkholes, cracks, and trenches.

Lava tubes in Hawai‘i are valued as biological resources. Cave entrances and passages provide important habitat for many kinds of plants and animals. Volcanic sinkholes and skylights in some Hawaiian caves form natural *refugia* where vascular plants can persist without being damaged by herbivores. Arthropods, snails, birds, and mammals also inhabit lava tubes.

Hawaiian caves have been described as ecologically sensitive environments containing rare or endangered fauna. None of the obligate cave fauna now known from the island of Hawai‘i are currently listed as candidate, threatened, or endangered species by the USFWS.

The USFWS recognizes one species of cave invertebrate on the island of Hawai‘i, the *troglobitic cixid* leafhopper *Oliarus polyphemus*, as a species of concern. This species was not found within The Kula Nei Project area.

The archaeology consultant for the Kula Nei project documented fourteen lava tube archaeological sites with more than twenty-five entrances, tube-related collapse structures, and sinks in the area, representing more than one-half mile of open lava tube passage. Surface expressions of these features were concentrated in the southeastern portion of TMK 7-3-007: 038 and the majority of TMK 7-3-009: 007. SWCA recorded additional entrances and tube-segments that did not contain archaeological material.

Concurrent geophysical investigations were conducted at the site by SWCA and Escarpment Environmental with ground penetrating radar (GPR) using very low frequency techniques. One hundred and twenty (120) anomalies were identified. Eighteen (18) are strong anomalies indicating large shallow voids. The shallowest and largest voids are likely coincident with the youngest *pāhoehoe* flow event, which is generally recognizable in air photos by the dominance of non-native fountain grass where soils are either poorly developed ~~to~~ or absent. Although sub-surface voids may occur anywhere in terrain formed by *pāhoehoe* lava, this flow represents the highest risk for inadvertently encountering significant voids during construction.

SWCA conducted biological investigations in 13 accessible caves and cave segments within the three parcels. The investigations found 32 species of cave arthropods. At least 5 of the 32 species are *troglobitic*, and 3 are endemic to the island of Hawai‘i. Current State and Federal regulations provide no special protection for any of these species. The remaining species are either facultative cave residents, regular visitors to caves, or accidental cave residents. Nymphs of a cixid plant hopper in the genus *Oliarus* were found in two lava tube segments (State Inventory of Historic Preservation [SIHP] 25059 and 16131).

The cave fauna study refers to the SHPD site number that was assigned in the course of archeological inventory survey studies.

**Table 3-7: CROSS REFERENCE TABLE FOR SWCA CAVE ENTRANCES AND GEOPHYSICAL ANOMALIES AND CORRESPONDING SHIP SITE NUMBERS**

TMK Number	SIHP Number *	SWCA Cave Entrance	SWCA Anomaly	Type*	Function*
3-7-3-09:007	16103	11.1-11.3		Lava tube	Burial/habitation
	16105	11.4		Lava tube	Burial/habitation
	16131	8, 9		Lava tube	Habitation
	24424	12	25, 113	Lava tube	Water collection
	25059	12		Lava tube	Habitation
	25060	6, 8		Lava tube	Habitation
	25062	3		Lava tube	Habitation
	25063	4, 5		Lava tube	Habitation
	25064	18		Lava tube	Habitation
	25065	17	59	Lava tube	Habitation
	25066	16	58	Lava tube	Habitation
	25067	15		Lava tube	Habitation
	25069	10	49, 51	Lava tube	Burial/habitation
3-7-3-07:038	24420	1, 2	104-106	Lava tube	Habitation
	24424	13	25-27, 74, 113	Lava tube	Habitation

\* From Clark and Rechtman (2006 and 2007)

SWCA biologists did not observe any evidence of cave use by non-cave-adapted native plants and birds, which are known to use damp cave entrances on the island of Hawai‘i for shelter or nesting. Although several species of native flora occur within the project area, vegetation is generally dominated by introduced species. The presence of suitable cave habitat and supporting native plant roots and the presence of native obligate cave-dwelling invertebrates, indicate that additional cave ecosystems not open to human access probably exist within the Primary Project Area.

There is no indication that cave resources on the Primary Project Area represent a statutory obstacle to development, other than where regulated archaeological resources coincide with cave entrances or underlying lava tube passages. This statement is based upon the consultant’s investigation of the lava tube caves and ~~their~~ his review of the Hawai‘i Cave Protection Law.

### 3.7.2 Potential Impacts and Mitigation

Hawaiian lava tube systems, including the lava tubes investigated at the Primary Project Area, contain a variety of natural resources. The investigations found 32 species of cave anthropoids. At least 5 of the 32 species are *troglobitic*, and 3 are endemic to the island of Hawai‘i. Current State and Federal regulations provide no special protection for any of these species.

*Troglobitic* diversity was greatest in the lava tube segments *mauka* of entrance 12 (SIHP 24424 and 25059) between entrances 7 and 12 (SIHP 24424), and between entrances 8 and 9 (SIHP 16131 and 25060). Shorter tube segments may provide suitable *troglobitic* habitat in mesocaverns extending away from accessible passages, but they are generally too dry to support a rich cave adapted community. The presence of these species does not preclude development of the property. The biological resources within the project area do not represent a statutory obstacle to development.

The following measures can be taken to minimize and avoid impacts to cave habitats and their unique fauna.

- Gate cave entrances associated with SIHP sites 24424, 25059, and 16131.
- Minimize the addition of topsoil or other impermeable material to the surface directly above known caves and preserves.
- Control invasive plant species within the preserves (*e.g.*, fountain grass and other aggressive, fire-prone grasses). Landscaping in areas to be developed should utilize native plants to the maximum extent practicable. The use of aggressive fire-prone non-native grasses in landscaping should be discouraged.
- Exercise care to minimize the amount of surface disturbance during construction and trenching in the vicinity of known caves. Proposed trenching and excavation alignments will be carefully screened for the likelihood of breakthroughs.
- Prevent wildfires and develop a rapid response plan to fires within the preserves and subdivisions.

- Allow biological monitoring in accessible caves by competent cave biologists during project construction. A monitor can also provide advisory assistance in case of an accidental breakthrough during blasting, trenching, or construction activities.

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			If the subject property is undeveloped, the existing lava tubes would remain undisturbed.
2. Proposed Action		✓		None of the obligate cave fauna now known from the island of Hawai'i are currently listed as Candidate, Threatened, or Endangered species by the USFWS. No candidate, threatened, or endangered species were found. Potential impacts are not anticipated to be significant adverse impacts because no endangered species are present. No mitigation measures are warranted.
3. Large-Lot Subdivision		✓		None of the obligate cave fauna now known from the island of Hawai'i are currently listed as Candidate, Threatened, or Endangered species by the USFWS. No candidate, threatened, or endangered species were found. Potential impacts are not anticipated to be significant adverse impacts because no endangered species are present. No mitigation measures are warranted.
4. Small-Lot Subdivision		✓		None of the obligate cave fauna now known from the island of Hawai'i are currently listed as Candidate, Threatened, or Endangered species by the USFWS. No candidate, threatened, or endangered species were found. Potential impacts are not anticipated to be significant adverse impacts because no endangered species are present. No mitigation measures are warranted.

# 4 CHAPTER FOUR: DESCRIPTION OF THE EXISTING HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

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## 4.1 ARCHAEOLOGY AND HISTORIC RESOURCES

### 4.1.1 Overview of the Archaeological Inventory Surveys

Robert B. Rechtman, Ph.D., dba Rechtman Consulting, LLC, in 2005/2006 conducted archaeological inventory surveys of the Primary Project Area, consisting of TMKs 7-3-7: 039, 038, and 7-3-9: 07, comprising approximately 130 acres. Rechtman Consulting also conducted an inventory survey of two of the Accessory Area parcels that are adjacent to the Primary Project Area. Those parcels are TMK 7-3-9: por 08 (approximately three acres), which is required for the proposed extension of Holoholo Street, and 7-3-46: 105 (43,706 square feet), which may be used as an alterative access to the Primary Project Area.

The basic objective of the surveys was to provide information sufficient for compliance with all historic ~~perseveration~~-preservation regulatory review requirements of the SHPD and the Hawai'i County Planning Department. The specific objectives of the surveys were four-fold: (a) to identify all potentially significant archeological remains present within the parcels; (b) to collect information sufficient to evaluate and document the potential significance of all identified remains; (c) to evaluate the potential impacts of any proposed development upon any identified significant remains; and (d) to recommend appropriate measures that would mitigate any adverse impacts upon identified significant remains.

A complete copy of the archaeological inventory surveys are provided as follows: TMK 7-3-007: 039, 105 in Appendix G; TMK 7-3-007: 038 in Appendix H, TMK 7-3-009: 007 in Appendix I, 7-3-009: por. 008 in Appendix J. Communications with the SHPD office are in Appendix K.

#### 4.1.2 Summary of Oral-Historical Information

In Rechtman and Maly (2003:Volume II) elder *kama'aina* of the *Kekaha* region tell much the same story as that described in the communications from the period of homestead development, and in the accounts given by J. Puuokupa in 1875 and J.W.H. Isaac Kihe in 1924. By the late 1800s, only a few permanent residences remained along the O'oma (and Kekaha) coastline. Primary residences were in the uplands, in the vicinity of the old Māmalahoa Highway. In that region, people were able to cultivate a wide range of crops—both native staples and new introductions—with which to sustain themselves, and in some cases even as cash crops.

By the middle to late 1800s, the *kula* lands, from around the 900-foot elevation to shore, were primarily used for goat, cattle, and donkey pasturage. The families of the uplands regularly traveled to the coast via trails. This was usually done to go fishing or to round up cattle, goats, or donkeys. During periods of extreme dry weather, when water resources dried up, the families relied on the brackish water ponds in the near-shore lands. In O'oma, near Wawaloli, the area marked on J.S. Emerson's Register Maps 1280, as Kama's or Keoki Mao's house, families still took shelter and drank the water from the spring through the 1940s. Such was the case at various locations of the coast, between Kohanaiki, O'oma, Kalaoa, Ho'ona, Kaulana, and lands further north to Kapalaoa.

An additional oral interview was conducted with *kama'aina* Elizabeth Maluihi Ako Lee (Auntie Elizabeth) for the current study. Auntie Elizabeth was born in 1929 and was raised by her *hanai* family, Kahananui, in upland O'oma. As a child she walked the upland trails and cultivated sweet potatoes on the current study parcel. Her *hanai* parents were responsible for building at least two of the boundary walls on the current study parcel for cattle control purposes. Her family also owned the parcel immediately *mauka* of the current study parcel, on which they used to graze cattle. Auntie Elizabeth recalled a Korean man living on that parcel during the 1930s.

##### 4.1.2.1 Ahupua'a Settlement Patterns and Current Survey Expectations

Archaeological studies undertaken within the greater North Kona District indicate that initial prehistoric settlement was concentrated primarily along the coast (Cordy 1981, Cordy et al. 1991). As coastal populations increased, so did the development of agricultural fields in the upland areas, reaching their greatest extent in the late 1700s. As the fields expanded so did native

populations in the upland resource areas. By the sixteenth century, temporary and permanent habitations were found at higher elevations within the *'apa 'a* zone (Barrera 1991).

In historic times, with the shift to a market economy and a western style of land ownership in Hawai'i, populations shifted from the coast to the upland areas. Much of the old style of agriculture was abandoned in favor of coffee farms and cattle ranches, which have had a significant impact on the Precontact archaeological record.

Based on the historical information collected by Rechtman and Maly (2003) and the findings of the inventory survey previously conducted on a portion of the current study parcel (Drolet and Schilz 1991), along with the results of nearby studies (Clark and Rechtman 2005a and 2005b; Rosendahl 1989), a fairly detailed set of project area expectations can be arrived at. Precontact use of the project area is likely to be marked by diverse agricultural features (including modified outcrops and mounds) and associated habitation sites. The habitation sites could include platforms, enclosures, pavements, or lava tubes. A network of trails would have connected these upland agricultural and habitation areas to each other, to the coast, and to more *mauka* resource areas. Remnants of this trail network may be present within the current project area. If burials are encountered, they are expected to be found within platforms, lava tubes, or concealed lava blisters. Lava tubes may have also been used for water collection and refuge. Historic use of the current study parcel is likely to be marked by ranching and habitation related sites. Historic feature types could include core-filled walls, enclosures, roads, or house pads.

Fifteen archaeological sites were previously recorded on, or along the boundary of, the current study parcel (Clark and Rechtman 2005a; Drolet and Schilz 1991; Rosendahl 1989). These sites include five lava tubes (Sites 16103, 16104, 16105, 16131, and 24424), four historic boundary walls (Sites 5699, 16106, 16125, and 16126), a circular mound (Site 16107), a mound cluster (Site 16108), three low walls (Sites 16127, 16129, and 16130), and a wall, a mound, and an alignment (Site 16128). These sites should all still be present within the current project area.

Also, during a recent field visit to the current project area with Mr. Robert E. Lee (former land owner), and his mother, Mrs. Elizabeth Maluihi Ako Lee (Auntie Elizabeth), and the authors of this report, Auntie Elizabeth related that as a child in the 1930s and early 1940s she helped her *hanai*

family cultivate sweet potatoes on the parcel. She described clearing cobbles from soil areas and then planting sweet potato cuttings in the rock-free soil. The cobbles removed from the soil were collected into clearing mounds. Auntie Elizabeth pointed out several small mounds that were similar to those she had created as a child, but she noted that they were not nearly as tidy as the neatly stacked features her family normally built. Mr. Lee related that his grandfather had built the western and northern boundary walls of the parcel during this same time period.

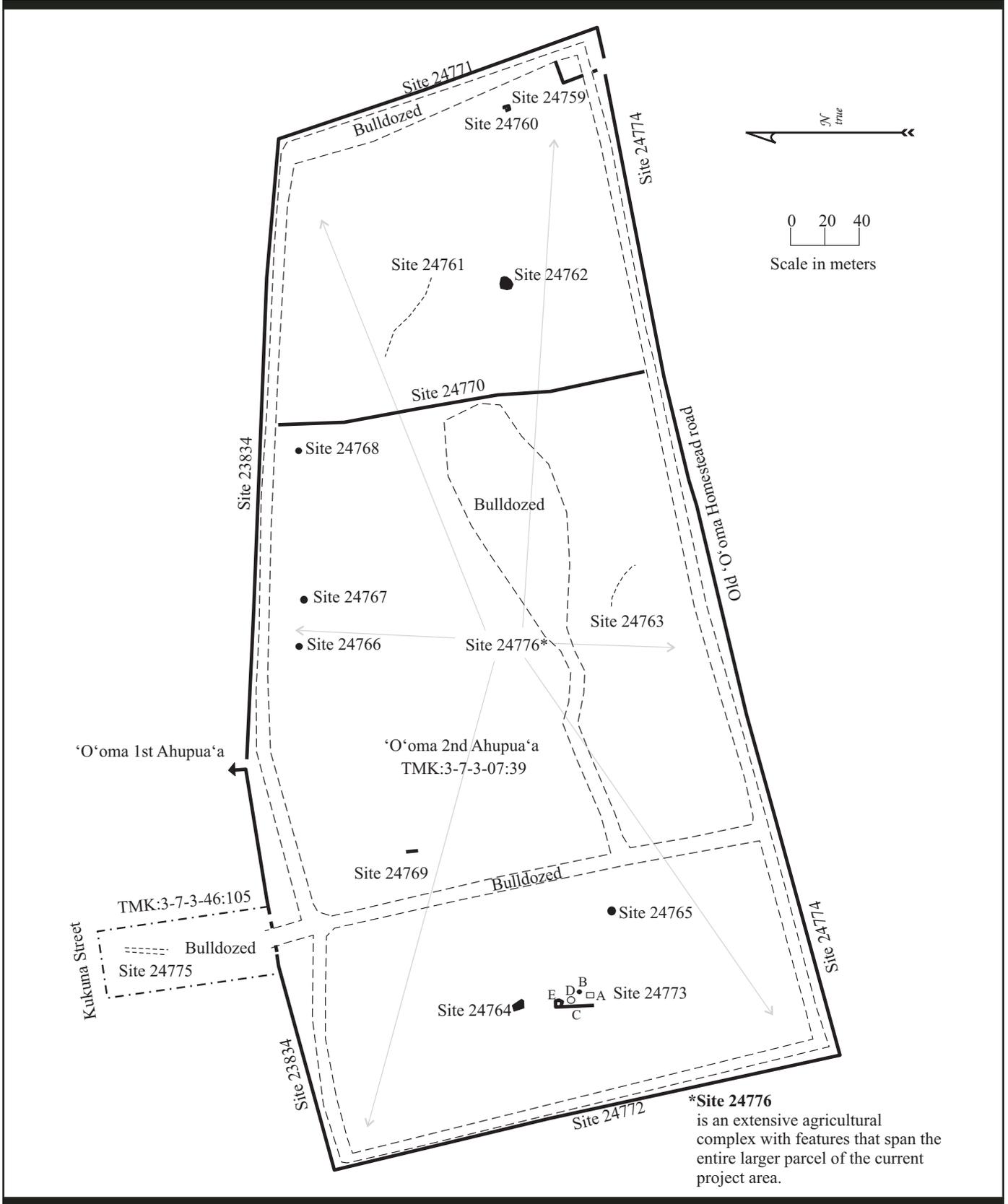
### **4.1.3 Existing Conditions**

#### **4.1.3.1 Primary Project Area TMK 7-3-7: 039**

As a result of the Rechtman inventory survey, one previously recorded archaeological site (Site 23834) and seventeen newly recorded sites were identified on TMK 7-3-7: 039 in April 2005 (Figure 4-1). The recorded sites include seven historic walls, one historic enclosure, two trail segments, a modified outcrop used for Precontact habitation purposes, a terrace used for Precontact habitation purposes, three Precontact lava blister habitations, one human burial within a lava blister, a Precontact habitation complex containing five features, and a large agricultural complex that spans the entire parcel (Site 24776). The features of Site 24776 appear, for the most part, to be clearing piles, and it is likely that the fields were used primarily for the planting of sweet potatoes. The use of these fields likely began during Precontact times and continued into Historic times.

Collectively, these sites represent nearly continual use of the parcel from Precontact times to the late Historic Period. The most numerous features present within the parcel are features of Site 24776, the agricultural complex. These features blanket the landscape and record the history of agricultural pursuits that occurred on the parcel.

Several small Precontact habitation sites are interspersed among the agricultural features of Site 24776. The nature of habitation that occurred at these sites appears to have been short term and recurrent, and primarily related to the agricultural use (planting and harvesting times) of the project area.



**Figure 4-1**  
**ARCHAEOLOGICAL SITE LOCATIONS—TMK 7-3-007:039**

Kula Nei  
North Kona, Hawaii  
Environmental Impact Statement  
Prepared for The Shopoff Group  
September 2007





The most recently constructed sites located on the parcel include seven historic walls and one historic enclosure. Site 24774 is the southern boundary wall of TMK 7-3-7: 039 and is also a portion of the northern boundary wall of a historic O'oma Homestead road. These sites are all likely related to the homesteading use of the project area. Four of the historic walls run along the boundaries of parcel 39, while the remaining three walls are present within the confines of parcel 39. The presence of these walls, along with the historic enclosure, suggests that cattle ranching may have occurred on the project parcels at some point during Historic times.

#### **4.1.3.2 Primary Project Area TMK 7-3-7: 038**

Rechtman's archeological inventory survey was conducted in April 2005 on TMK 7-3-7: 038. The *makai* portion of the parcel was previously the subject of an archeological inventory survey conducted by Drolet and Schliz in 1991. During that study, nineteen archaeological sites (Site 16106 and Sites 16109-16126) were recorded on the parcel (Figure 4-2). However, widespread mechanical clearing on the parcel in 1994 (prior to the current owner's purchase of the property) obliterated all but three of the previously recorded sites and likely others.

As a result of the most recent 2005 inventory survey, three previously recorded archaeological sites (Sites 16106, 16125, and 16126) and twelve newly recorded sites (Sites 22413-22424) were identified.

The fifteen sites represent nearly continual use of the parcel from Precontact times to the 1940s. The most recent historic sites located on the parcel include the remains of a former residence that was occupied until approximately 1939, the boundary walls that surround the entire parcel, and a small enclosure of undetermined homesteading function. These sites likely post-date the 1913 sale of the parcel and are primarily related to cattle ranching and homesteading.

Other Historic period sites may have been constructed by an earlier applicant for the parcel who may have been living on the land during the latter part of the 19<sup>th</sup> century, prior to the 1913 sale of the property. These sites include a large enclosure that may have functioned as a goat pen, and several core-filled wall segments that may have once formed several large enclosures on the property. Although these sites were likely constructed earlier than 1913, they likely saw

continued use throughout the Historic period and, in part, helped determine where later construction was placed on the parcel.

Precontact sites include a burial (Site 24413); a three-sided habitation enclosure; a modified outcrop; a stepping stone trail segment, a lava tube system containing four habitation areas near openings; two mounds; and Site 24424, ~~which is a large lava tube, which that~~ continues onto TMK 7-3-9: 07, ~~that~~ and was used for water collection.

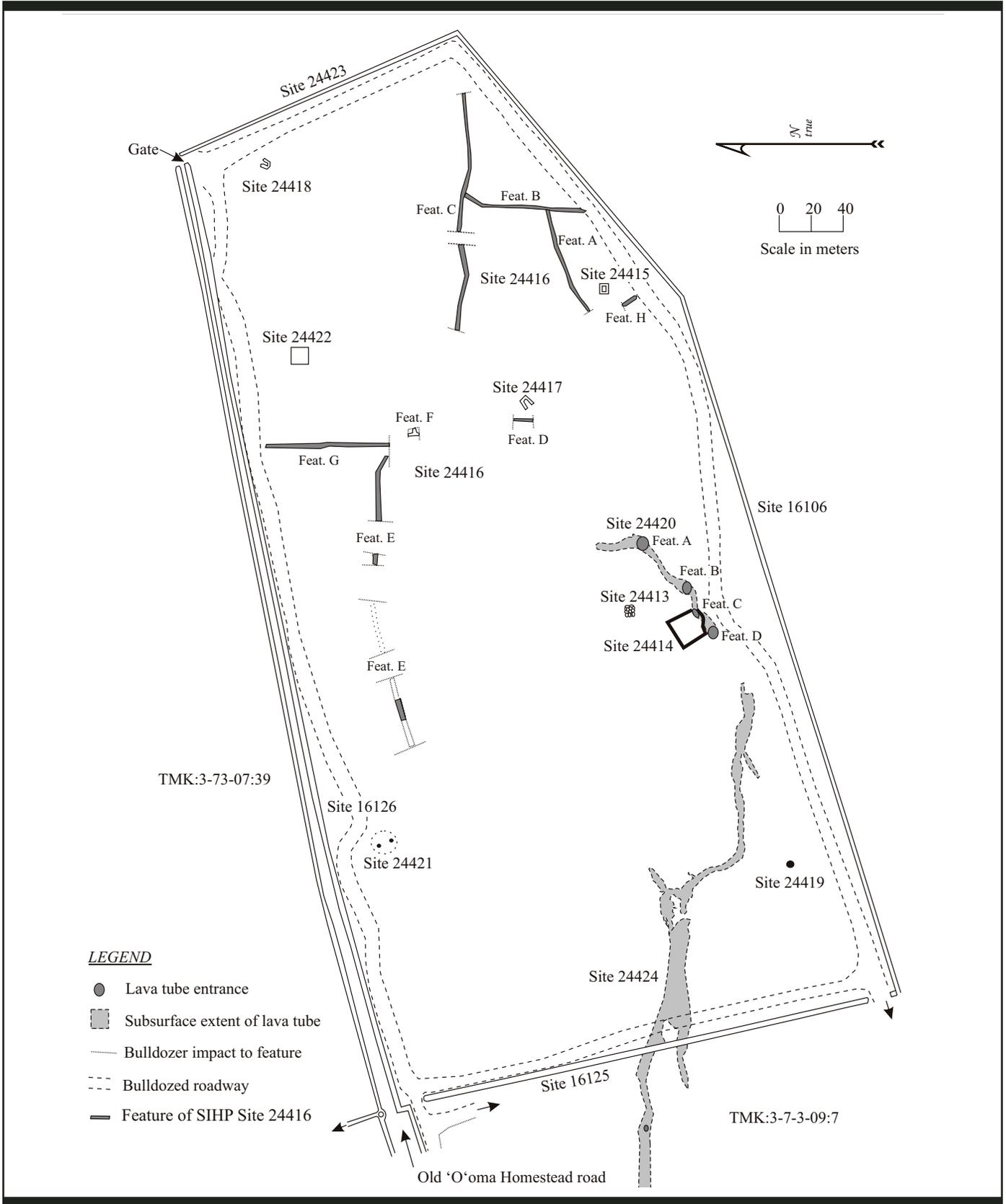
The use of at least two sites may have spanned Precontact and Historic times. Both of these sites are lava tubes (Sites 24420 and 24424). Site 24420 appears to have been used originally and primarily for Precontact habitation. Artifacts were found at Site 24420 that ~~also~~ suggests that a feature was also utilized historically. Other features of Site 24420 were incorporated into the construction of a historic ranching enclosure (Site 24414).

Site 24424 appears to have been utilized nearly exclusively for water collection purposes. The deep and massive lava tube does not have an entrance on TMK 7-3-7: 038, but the *mauka* portion of the tube runs beneath parcel 38. Several stone constructions recorded within the tube were strategically placed at the locations of dripping water. Use of the cave for water collection would have become obsolete as the Historic era progressed and new water collection and distribution technology was brought to the island. Two broken bottles within Site 24424 are the only evidence of historic use of the lava tube.

Three Precontact habitation sites were recorded, of which Site 24413 appears to have functioned as a habitation feature before being converted to a burial feature. The Precontact residents of these habitation features were likely involved in agricultural pursuits. The 1991 Drolet and Schilz survey recorded sixteen sites in the west (*makai*) portion of the parcel that were also related to Precontact agriculture; however all sixteen were destroyed in 1994.

#### **4.1.3.3 Primary Project Area TMK 7-3-9: 007**

As a result of the Rechtman 2005 inventory survey for TMK 7-3-9: 007, eleven previously recorded archaeological sites and forty-three newly recorded sites were identified (Figure 4-3). The recorded sites include one historic habitation complex, four historic boundary walls, twenty-



**LEGEND**

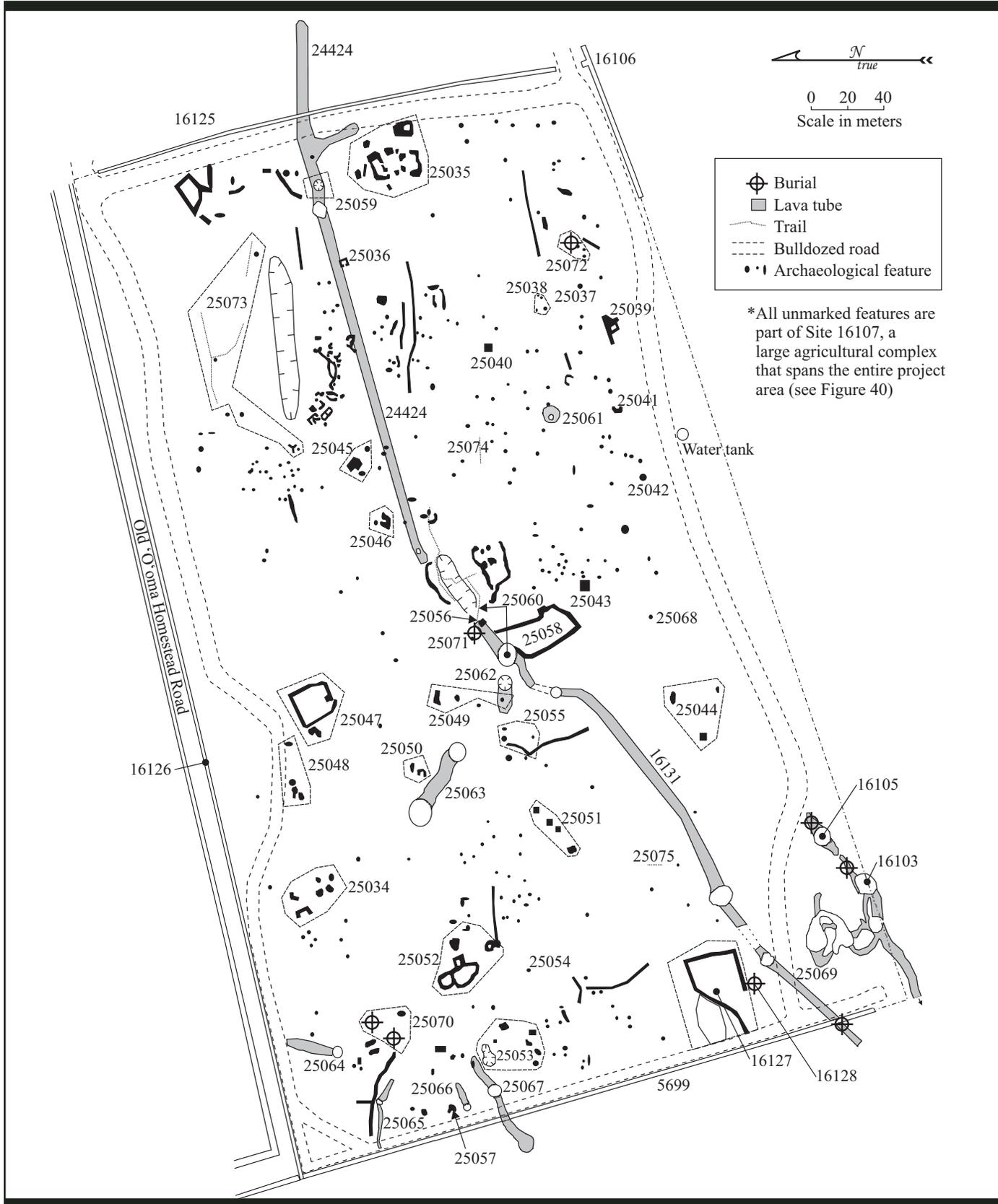
- Lava tube entrance
- Subsurface extent of lava tube
- ⋯ Bulldozer impact to feature
- - - Bulldozed roadway
- Feature of SIHP Site 24416

**Figure 4-2**  
**ARCHAEOLOGICAL SITE LOCATIONS—TMK 7-3-007:038**

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\*All unmarked features are part of Site 16107, a large agricultural complex that spans the entire project area (see Figure 40)

**Figure 4-3**  
**ARCHAEOLOGICAL SITE LOCATIONS—TMK 7-3-009: 007**

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September 2007



Source: Rechtman Consulting LLC



four above-ground Precontact habitation sites (nineteen complexes and five single features), two Precontacts habitation lava blisters, twelve Precontact lava tube habitation sites (three of which contained burials), three burial complexes, one burial platform, three trail segments, one large Precontact enclosure of uncertain function, a Precontact complex of uncertain functions, one lava tube used exclusively for Precontact and Historic water collection purposes (Site 24424), and one large agricultural complex that spans the entire project area (Site 16107). The project area appears to have been originally cultivated during the Precontact period, as attested to by the numerous habitation sites dating to the era. Based on oral accounts, it is known that traditional cultivation practices, primarily of sweet potatoes, continued on this land into the 1940s.

Together these sites represent nearly continual use of the parcel from Precontact times to the 1940s. The most recent sites include the remains of a Historic period residential complex (Site 25034) that was possibly used into the 1930s, and the boundary walls that surround the entire parcel. Of these walls, Site 16126 is a portion of the southern wall marking the former O‘oma Homestead Road that was part of a system of roadways that provided access to the grant lots in the area. The parcel boundary walls are primarily related to cattle ranching and homesteading.

At least two of the sites have spanned Precontact and Historic times. One is the extensive agricultural complex (Site 16107) and the other is a lava tube (Site 24424). The lava tube appears to have been utilized nearly exclusively for water collection purposes. Several stone constructions recorded within the tube were strategically placed at the locations of dripping water. Two broken bottles discovered within Site 24424 are the only definitive evidence of more recent historic use of the lava tube. Water caves, such as Site 24424, would have enabled populations to live upon the land and sustain life in the arid environment of North Kona. Use of the cave for water collection would have become obsolete as the Historic era progressed and new water collection and distribution technology was brought to the island.

A significant number of Precontact habitation sites were recorded within TMK 7-3-9: 007. The density of the sites is much greater than in surrounding areas. This may be a function of a lack of substantial historic and modern ground altering activities. Conversely, it may be that this area saw a greater population density in Precontact times than the surrounding area. The apparent

presence of a consistent and reliable water source, the lava tube Site 24424, may have been a factor in the high density of habitation sites. In any case, the Precontact residents of these habitation features were likely involved in agricultural pursuits.

Three of the Precontact habitations, all lava tubes, were also used for burial, perhaps indicating a temporally sensitive pattern in the use of residential space for burial purposes. Three surface complex sites were exclusively used for burial purposes.

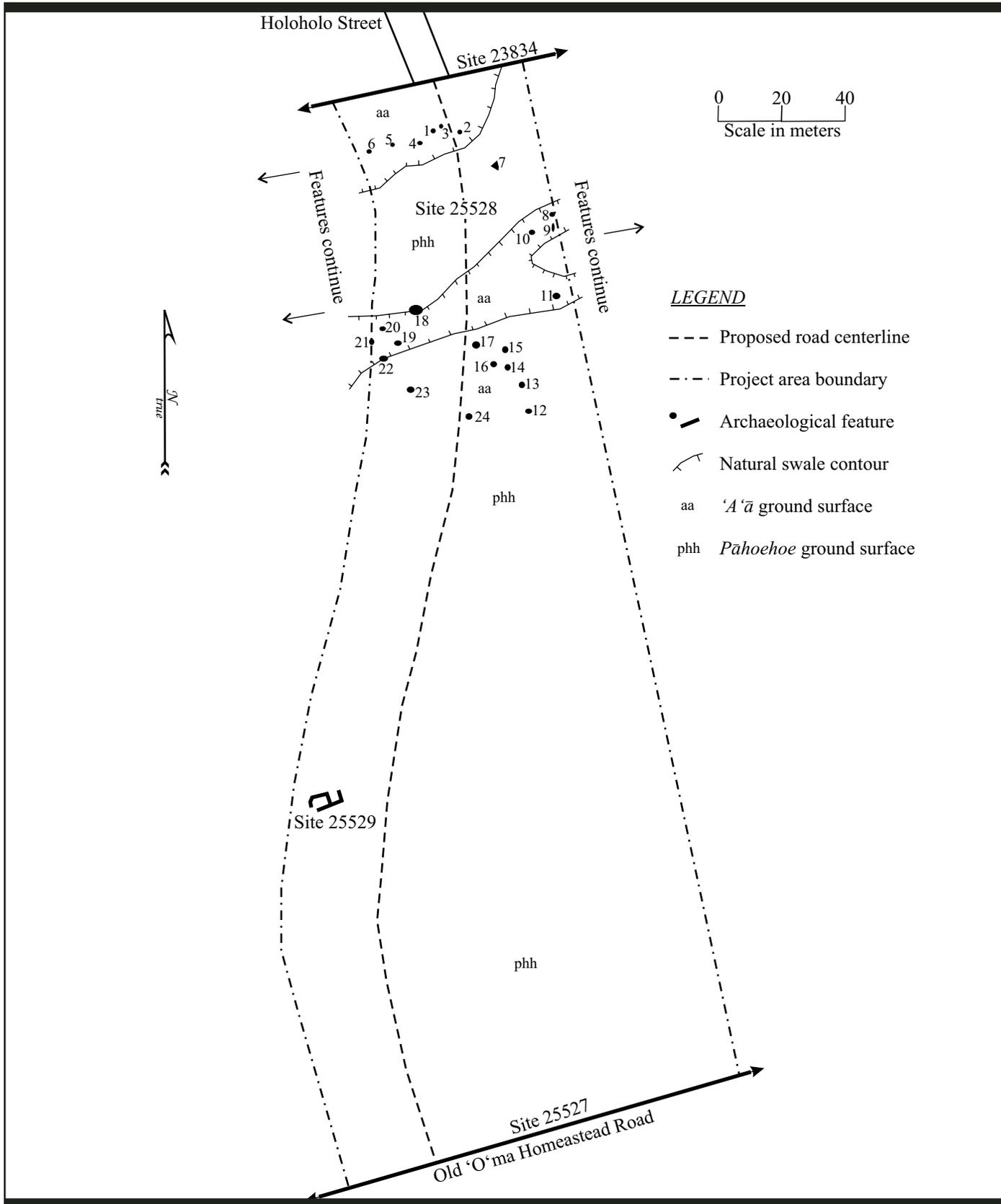
#### **4.1.3.4 Accessory Area TMK 7-3-9: 008**

In June 2006, Rechtman Consulting conducted an inventory survey of the corridor for the proposed extension of Holoholo Street on State-owned land on TMK 7-3-9: 008. Historic records indicated that the land was never patented and thus has remained in the ownership of the government up to the present day. The area surveyed, approximately 3 acres, is larger than the road right-of-way in order to provide flexibility for the placement of the road.

Four archeological sites were recorded within the survey corridor (Figure 4-4). The recorded sites include two core-filled boundary walls (Sites 23834 and 25527), an agricultural complex (Site 25528), and a single small Precontact habitation enclosure (Site 25529). The nature of the habitation that occurred on the site may have been short term and recurrent and primarily related to the agriculture use of the project area. The presence of scattered cow bones in the vicinity of Site 25529, and elsewhere within the project area, suggests that cattle ranching may have occurred on the parcels in more recent Historic times.

The most numerous features are those of Site 25528, the agricultural complex. The features appear for the most part to be clearing piles, but some could have been used as planting mounds. It is likely that Site 25528 was used primarily for the planting of sweet potato. All of the features of Site 25528 within the survey corridor were recorded in detail.

Similar to the other Primary Project Area parcels, the agricultural use of this area likely began during Precontact times and may have continued into Historic times.



**LEGEND**

- Proposed road centerline
- · - Project area boundary
- Archaeological feature
- ⤵ Natural swale contour
- aa 'A'a' ground surface
- phh Pāhoehoe ground surface

**Figure 4-4**  
**ARCHAEOLOGICAL SITE LOCATIONS—TMK 7-3-009: 008**

Kula Nei  
North Kona, Hawaii  
Environmental Impact Statement  
Prepared for The Shopoff Group  
September 2007



Source: Rechtman Consulting LLC



The most recently constructed sites are the two historic walls (Sites 23834 and 25527) located along the northern and southern boundaries of the parcel. These sites are both core-filled boundary walls related to the historic use of parcels within the O'oma Homesteads and were likely constructed during the latter part of the nineteenth century.

#### **4.1.3.5 Accessory Area TMK 7-3-46: 105**

A single archaeological site was recorded in April 2005 on TMK 7-3-46: 105, Site 24775 a historic/modern roadway, which is recommended for no further work (Figure 4-1). This site consists of a roughly 25-meter long segment of old roadway located near the intersection of Kukuna Street and Punawele Street within the Kona Palisades residential subdivision. The roadway is terraced along its western downslope edge with loosely stacked and piled cobbles and boulders. The pathway is level and lined along its eastern edge with a single course alignment of cleared cobbles. Site 24775 may represent an old continuation to the north of Punawele Street that was perhaps related to the historic homestead use of the area. Site 24775 may also be a modern construction as it does not have the appearance of an older Hawaiian trail. Bulldozing has significantly impacted this site.

#### **4.1.4 Potential Impacts and Mitigation**

##### **4.1.4.1 Primary Project Area TMK 7-3-7: 039**

At the time of this writing, SHPD has not yet reviewed the inventory survey for TMK 7-3-7: 039. Twelve of the eighteen sites are recommended for no further work, including Site 23834, which has a previously approved recommendation from Haun and Henry (2003) of no further work. A copy of the SHPD approval letter for the Haun and Henry report is in Appendix G.

Four sites are recommended for further data recovery. A data recovery plan will be prepared in consultation with SHPD for three Precontact habitation sites (Sites 24762, 24764, 24773). Site 24776, the agricultural complex that spans the entire parcel, should have the following completed: locational mapping of all of the features of the site within the parcel's boundaries; preparation of detailed plan view maps of selected features; and further subsurface testing at the selected features. A data recovery plan will be prepared in consultation with SHPD.

Two sites are recommended for preservation. Site 24768 is a burial/habitation site. A search for lineal and cultural descendents will be undertaken and a burial treatment plan will be prepared in consultation with any identified descendants and the Hawai‘i Island Burial Council. Site 24774, a portion of the northern boundary wall of a historic O‘oma Homestead Road, is recommended for preservation. A preservation plan will be prepared in consultation with SHPD. The historic wall on the opposite side of the O‘oma Homestead Road is also recommended for preservation (Clark and Rechtman 2005).

**Table 4-1: TMK 7-3-7: 039**

SIHP Site No.	Site Description	Temporal Association	Significance	Recommended Treatment
23834	Boundary	Historic	D	No further work *
24759	Ranching	Historic	D	No further work
24760	Homesteading	Historic	D	No further work
24761	Trail	Precontact	D	No further work
24762	Habitation	Precontact	D	Data recovery
24763	Trail	Precontact	D	No further work
24764	Habitation	Precontact	D	Data recovery
24765	Habitation	Precontact	D	No further work
24766	Habitation	Precontact	D	No further work
24767	Habitation	Precontact	D	No further work
24768	Burial/Habitation	Precontact	D,E	Preservation
24769	Ranching	Historic	D	No further work
24770	Ranching	Historic	D	No further work
24771	Boundary	Historic	D	No further work
24772	Boundary	Historic	D	No further work
24773	Habitation	Precontact	D	Data Recovery
24774	Boundary	Historic	A,D	Preservation
24776	Agriculture	Precontact	D	Data recovery

\* Previously approved DLNR-SHPD treatment (Haun and Henry 2003)

**4.1.4.2 Primary Project Area TMK 7-3-7: 038**

The SHPD approved the inventory survey for TMK 7-3-7: 038 on July 31 2006. A copy of the letter is in Appendix K.

Nine of the fifteen sites are recommended for no further work, including Sites 16106 and 16125, which have previously approved recommendations from Drolet and Schliz (1991) of no further work.

Three sites are recommended for data recovery. Sites 24417, 24418 and 24420 appear to have been utilized primarily during the Precontact period. Sites 24417 and 24420 seem to have functioned as habitation sites and Site 24418 seems to have served an agricultural purpose. A data recovery plan will be prepared in consultation with SHPD.

Three sites are recommended for preservation. Site 16126, a portion of the southern boundary wall of a historic O’oma Homestead Road, is recommended for preservation. A preservation plan will be prepared in consultation with SHPD. The historic wall on the opposite side of the O’oma Homestead Road is also recommended for preservation (Clark and Rechtman 2005).

Site 24413, a Precontact burial platform, is recommended for preservation. A search for lineal and cultural descendents will be undertaken and a burial treatment plan will be prepared in consultation with any identified descendants and the Hawai’i Island Burial Council.

Site 24424, a large lava tube that appears to have been utilized nearly exclusively for water collection purposes, is recommended for preservation. A preservation plan will be prepared in consultation with SHPD.

**Table 4-2: TMK 7-3-7: 038**

SIHP Site No.	Site Description	Temporal Association	Significance	Recommended Treatment
16106	Boundary	Historic	D	No further work*
16125	Boundary	Historic	D	No further work*
61626	Boundary	Historic	A,D	Preservation
24413	Burial	Precontact	D,E	Preservation

SIHP Site No.	Site Description	Temporal Association	Significance	Recommended Treatment
24414	Ranching	Historic	D	No further work
24415	Homesteading	Historic	D	No further work
24416	Ranching	Historic	D	No further work
24417	Habitation	Precontact	D	Data recovery
24418	Agriculture/clearing	Precontact	D	Data recovery
24419	Trail	Precontact	D	No further work
24420	Habitation	Precontact/Historic	D	Data recovery
24421	Agriculture/clearing	Precontact	D	No further work
24422	Homesteading	Historic	D	No further work
24423	Boundary	Historic	D	No further work
24424	Water collection	Precontact/Historic	D,E	Preservation

\* Previously approved DLNR-SHPD treatment (Drolet and Schilz 1991)

#### **4.1.4.3 Primary Project Area TMK 7-3-9: 007**

At the time of this writing, SHPD reviewed the inventory survey and issued a comment letter on July 13, 2006, for TMK 7-3-9: 007. The inventory survey was subsequently revised and resubmitted to SHPD in March 2007.

Eleven sites are recommended for no further work. These sites have been evaluated and as a result of the inventory survey, it is recommended that the data already collected and presented in the inventory survey report is sufficient to mitigate any impacts to these sites that may result from the development of the parcel.

Thirty-one sites are recommended for data recovery. This suite of habitation sites collectively represents an excellent opportunity to better understand Precontact settlement in a wetter and more fertile portion of Kekaha. Given the significant modern development that has already occurred in the region and continued development of this area, these sites provide an ever-increasingly unique opportunity for study of multiple research questions. As these sites still retain the potential for further data collection and are recommended for data recovery, a data recovery plan will be prepared in consultation with SHPD.

Eleven sites are recommended for preservation. Seven are burial sites. One is a lava tube used for water collection and as such would have held traditional cultural value (Site 24424). One is a

boundary wall associated with the historic O‘oma Homestead Road. Two are habitation sites, one of which is an excellent example of a site type, and one a location of petroglyphs. For the burial sites, a search for lineal and cultural descendants will be undertaken and a burial treatment plan prepared in consultation with any identified descendants and the Hawai‘i Island Burial Council. For the non-burial archeological sites, a preservation plan will be prepared in consultation with SHPD.

#### **4.1.4.4 Accessory Area TMK 7-3-9: 008**

At the time of this writing, SHPD reviewed the inventory survey and issued a comment letter on September 7, 2006, for TMK 7-3-9: 008. The inventory survey was subsequently revised and resubmitted to SHPD in January 2007.

One of the four sites, Site 23834 a boundary wall, has a prior approved recommendation from Haun and Henry for no further work.

Two of the four sites, Site 25528 and 25529, are recommended for data recovery. Site 25528 is the agricultural complex, and site 25529 is a single small Precontact habitation enclosure. A data recovery plan will be prepared in consultation with SHPD.

One of the four sites, Site 25527, is recommended for preservation. Site 25527 is a historic boundary wall that is also a portion of the northern boundary wall of a historic O‘oma Homestead Road. The inventory survey report states that an allowance must be made for a breach in the wall to accommodate the proposed future extension of Holoholo Street. A preservation plan will be prepared in consultation with SHPD. The historic wall on the opposite side of the O‘oma Homestead Road is also recommended for preservation.

**Table 4-3: TMK 7-3-9: 008**

SIHP Site No.	Site Description	Temporal Association	Significance	Recommended Treatment
23834	Boundary	Historic	D	No further work*
25527	Boundary	Historic	A,D	Preservation
25528	Agriculture	Precontact	D	Data recovery
25529	Habitation	Precontact	D	Data recovery

\* Previously approved DLNR-SHPD treatment (Haun and Henry 2003).

**4.1.4.5 Accessory Area TMK 7-3-46: 105**

At the time of this writing, SHPD has not yet reviewed the inventory survey for TMK 7-3-46: 105. A single archaeological site was recorded on TMK 7-3-46: 105. No further work is recommended for Site 24775, a historic/modern roadway.

**Table 4-4: TMK 7-3-46:105**

SIHP Site No.	Site Description	Temporal Association	Significance	Recommended Treatment
24775	Road	Historic/modern	D	No further work

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			Data recovery and preservation of sites would not occur. Uncontrolled vegetation growth would eventually lead to the gradual loss of sites and decreased accessibility.
2. Proposed Action		✓		Archaeological sites and cultural resources determined to be significant under State criteria will be preserved, including lava tube SIHP Site 24424. Homestead Road will be preserved as a pedestrian trail. Data recovery plans and burial treatment plans will be prepared as required.
3. Large-Lot Subdivision		✓		Archaeological sites and cultural resources determined to be significant under State criteria would be preserved. Data recovery plans and burial treatment plans would be prepared as required.
4. Small-Lot Subdivision		✓		Archaeological sites and cultural resources determined to be significant under State criteria would be preserved. Data recovery plans and burial treatment plans would be prepared as required.

## 4.2 CULTURAL RESOURCES

Robert B. Rechtman, Ph.D., of Rechtman Consulting LLC, conducted a cultural impact assessment for the Kula Nei project area – both the Primary Project Area and the Accessory Areas – to compile information about Precontact and historic cultural resources and traditional cultural practices, which may be impacted by the proposed project. The cultural impact assessment study is summarized below. Appendix L contains the complete report.

The Kula Nei project is located on the island of Hawai‘i, in the Kona District and in the O‘oma 1<sup>st</sup> and O‘oma 2<sup>nd</sup> *ahupua‘a*, which lie *mauka* of the Queen Ka‘ahumanu Highway and *makai* of Māmalahoa Highway. In an effort to provide a comprehensive and holistic understanding of the project area, the cultural impact assessment examines the entire *ahupua‘a* and its relationship to neighboring lands within the larger Kekaha region.

The cultural impact assessment reviewed several native accounts from Hawaiian language newspapers (compiled and translated from Hawaiian to English by Kepā Maly), and historical narratives authored by eighteenth and nineteenth century visitors to the region, in addition to archival-historical literature from both Hawaiian and English language sources such as Hawaiian Land Commission Award records from the *Māhele ‘Āina* (Land Division) of 1848; survey records of the Kingdom and Territory of Hawai‘i; and various historical texts.

Additionally, over the last twelve years Kepā Maly of Kumu Pono Associates has researched and prepared several detailed studies - in the form of review and translation of accounts from Hawaiian language newspapers, historical accounts recorded by Hawaiian and non-Hawaiian residents, and government land use records - for lands in the Kekaha region of which O‘oma is a part. Kepā Maly has also conducted a number of detailed oral history interviews with elder *kama‘āina* documenting their knowledge of the Kekaha region (including O‘oma). As part of the cultural impact assessment, some new informal interviews were conducted. All of the interview participants (both past and present) shared their personal knowledge of the land and practices of the families who lived in O‘oma and the vicinity.

While no traditional or on-going cultural practices, or traditional cultural properties have been identified for Kula Nei’s Primary Project Area or the Accessory Areas, prior archaeological

studies have documented numerous significant archaeological resources within the project area, several of which merit preservation. Section 4.1 contains a discussion of the archaeological resources found within the project area, potential impacts are discussed, and appropriate mitigation measures are outlined.

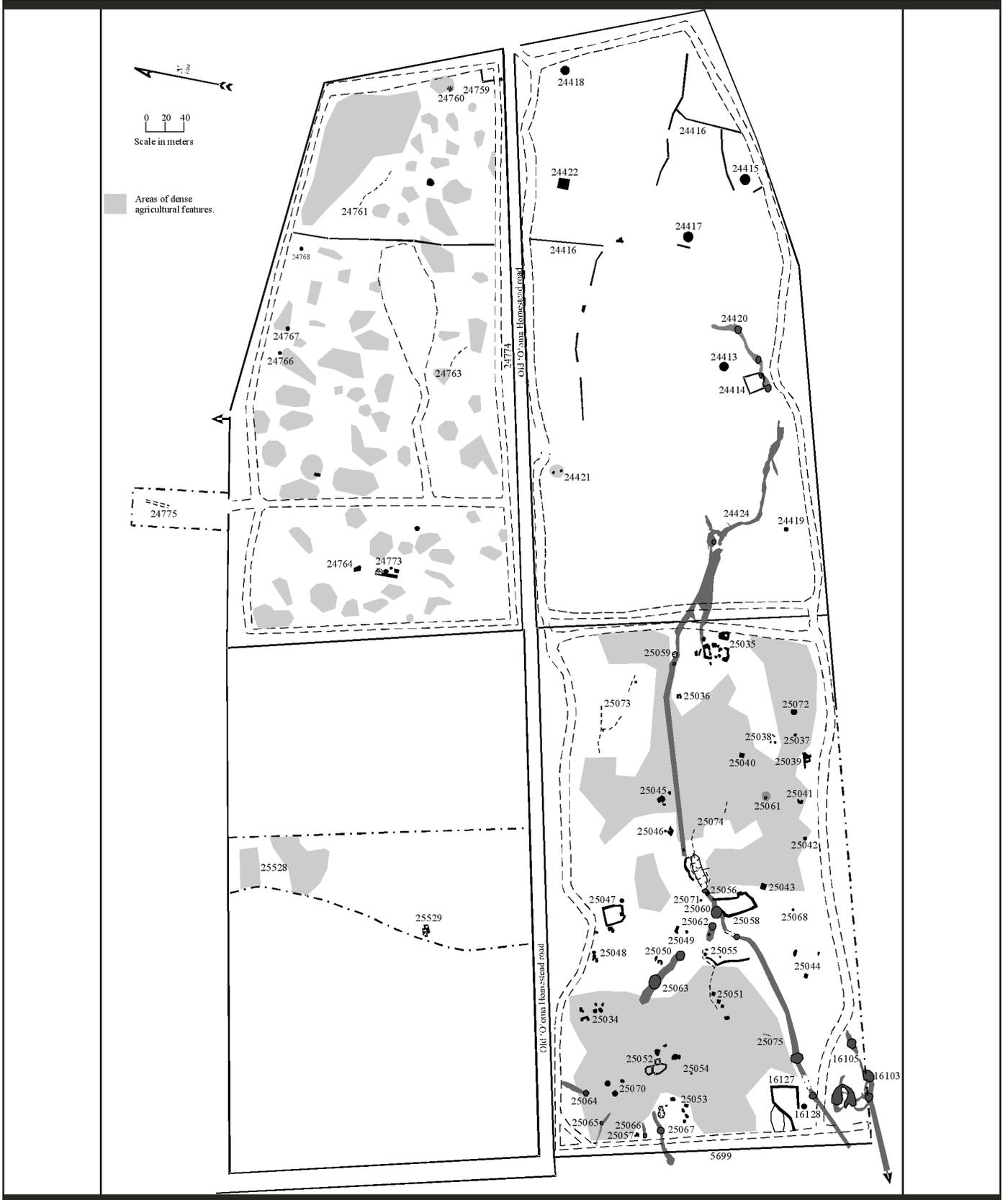
The sections that follow present the archaeological background for the specific study area, a discussion of the cultural and historical background for O‘oma *ahupua‘a* and the Kekaha region, and information from both prior and newly conducted oral-historical interviews.

#### 4.2.1 Archaeological Background

Thrum (1908) compiled the earliest systematic report on archaeological features - *heiau* or ceremonial sites - on the island of Hawai‘i. Thrum’s work was the result of literature review and field visits spanning several decades. Unfortunately, Thrum’s work did not take him into O‘oma, and his documentation on *heiau* ends at Lanihau, south of the study area, and picks up to the north, in the Pu‘u Anahulu vicinity. Likewise, the 1906-1907 J.F.G. Stokes detailed field survey of *heiau* on the island of Hawai‘i for the B.P. Pauahi Bishop Museum stopped short of doing comprehensive work in the Kekaha region, and no sites were recorded in O‘oma.

In 1929-1930, the Bishop Museum contracted John Reinecke to conduct a survey of Hawaiian sites in West Hawai‘i, including O‘oma and the *Kekaha* region. A portion of Reinecke’s survey fieldwork extended north from Kailua as far as Kalāhuipua‘a. His work was the first attempt at a survey of sites of varying function, ranging from ceremonial to residency and resource collection. During his study, Reinecke traveled along the shore of Kekaha, documenting near-shore sites.

Most recently, the Kula Nei project area has been subject to intensive archaeological study (Clark and Rechtman 2005; Clark and Rechtman 2006a; Clark and Rechtman 2006b; Rechtman 2006). As a result of the archaeological inventory surveys a total of eighty-three sites were recorded within the Primary Project Area and on TMK 7-3-9: 008 (the Holoholo Street extension area) (Figure 4-5). No sites were identified within the Accessory Areas associated with the water



**Figure 4-5**  
**SUMMARY OF ARCHAEOLOGICAL SITES**

Kula Nei  
North Kona, Hawaii  
Environmental Impact Statement  
Prepared for The Shopoff Group  
September 2007



Source: Rechtman Consulting LLC



system (Rechtman 2006). Chapter 4.1 contains a complete list of the archaeological sites, their significance, and recommendations regarding further study and preservation. Collectively, the archaeological sites document intensive Precontact use of the Primary Project Area for habitation, burial, and water collection activities. This latter activity was a significant one, as the overall region (Kekaha) is renowned for its dryness and lack of water sources. The water sources associated with the major lava tube system (SIHP Site 24424) were a key factor that led to the establishment and sustainment of the numerous habitation sites and associated burial sites in the area. The agricultural features found throughout the primary project area are both Precontact and Historic in origin, while the boundary walls all date from the Homesteading Period (1884 to 1915). Another significant landscape feature that dates to the Historic Period is Homestead Road—~~that~~, which runs a *mauka/makai* course through the center of the Kula Nei Primary Project Area. Homestead Road and its associated walls will be integrated into the Kula Nei project as a pedestrian pathway.

## **4.2.2 Cultural and Historical Background**

### **4.2.2.1 Natural and Cultural Resources in a Hawaiian Context**

In Hawaiian society, natural and cultural resources are one and the same. Native traditions describe the formation (the literal birth) of the Hawaiian Islands and the presence of life on and around them in the context of genealogical accounts. All forms in the natural environment, from the skies and mountain peaks, to the watered valleys and lava plains, to the shoreline and ocean depths were believed to be embodiments of Hawaiian deities. One Hawaiian genealogical account records that *Wākea* (the expanse of the sky—father) and *Papa-hānau-moku* (Papa - Earth-mother who gave birth to the islands) - also called *Haumea-nui-hānau-wā-wā* (Great Haumea - Woman-earth born time and time again) - and various gods and creative forces of nature, gave birth to the islands. Hawai‘i, the largest of the islands, was the first-born of these island children.

As the Hawaiian genealogical account continues, these same god-beings, or creative forces of nature who gave birth to the islands, were also the parents of the first man (*Hāloa*), and from this ancestor, all Hawaiian people are descended. It was in this context of kinship that the ancient Hawaiians addressed their environment, and it is the basis of the Hawaiian system of land use.

#### **4.2.2.2 An Overview of Hawaiian Settlement**

Archaeologists and historians describe the inhabiting of these islands in the context of settlement that resulted from voyages taken across the open ocean. For many years, researchers have proposed that early Polynesian settlement voyages between Kahiki (the ancestral homelands of the Hawaiian gods and people) and Hawai‘i were underway by 300 A.D., with long distance voyages occurring fairly regularly through at least the thirteenth century. It has been generally reported that the sources of the early Hawaiian population - the Hawaiian Kahiki - were the Marquesas and Society Islands.

For generations following initial settlement, communities were clustered along the watered, windward (*ko‘olau*) shores of the Hawaiian Islands. Along the *ko‘olau* shores, streams flowed and rainfall was abundant, and agricultural production became established. The *ko‘olau* region also offered sheltered bays from which deep sea fisheries could be easily accessed, and near shore fisheries, enriched by nutrients carried in the fresh water, could be maintained in fishponds and coastal waters. It was around these bays that clusters of houses where families lived could be found. In these early times, Hawai‘i’s inhabitants were primarily engaged in subsistence level agriculture and fishing.

Over a period of several centuries, areas with the richest natural resources became populated and perhaps crowded, and by about 900 to 1100 A.D., the population began expanding to the *kona* (leeward side) and more remote regions of the island of Hawai‘i.

In Kona, communities were initially established along sheltered bays with access to fresh water and rich marine resources. The primary “chiefly” centers were established at several locations: the Kailua (Kaiakeakua) vicinity, Kahalu‘u-Keauhou, Ka‘awaloa-Kealakekua, and Hōnaunau.

By the fourteenth century, inland elevations to around the 3,000-foot level were being turned into a complex and rich system of dryland agricultural fields (today referred to as the Kona Field System). By the fifteenth century, residency in the uplands was becoming permanent, and there was an increasing separation of the chiefly class from the common people. In the sixteenth century the population stabilized and the *ahupua‘a* land management system was established as a socioeconomic unit.

In Kona, where there were no regularly flowing streams to the coast, access to potable water (*wai*) was of great importance and played a role in determining the areas of settlement. The waters of Kona were found in springs and caves (found from shore to the mountain lands), or procured from rain catchments and dewfall. Traditional and historic narratives abound with descriptions and names of water sources, and also record that the forests were more extensive and extended much further seaward than they do today. These forests not only attracted rains from the clouds and provided shelter for cultivated crops, but also in dry times drew the *kēhau* and *kēwai* (mists and dew) from the upper mountain slopes to the low lands.

In the 1920s and 1930s, E.G. Handy conducted extensive research and field interviews with elder native Hawaiians. In lands of North and South Kona, they recorded native traditions describing agricultural practices and rituals associated with rains and water collection. Primary in these rituals and practices was the lore of Lono - a god of agriculture, fertility, and the rituals for inducing rainfall. Handy observed:

*The sweet potato and gourd were suitable for cultivation in the drier areas of the islands. The cult of Lono was important in those areas, particularly in Kona on Hawai‘i...there were temples dedicated to Lono. The sweet potato was particularly the food of the common people. The festival in honor of Lono, preceding and during the rainy season, was essentially a festival for the whole people, in contrast to the war rite in honor of Ku which was a ritual identified with Ku as god of battle. (Handy et al. 1972:14)*

Handy noted that the worship of Lono was centered in Kona. Indeed, it was while Lono was dwelling at Keauhou, that he is said to have introduced taro, sweet potatoes, yams, sugarcane, bananas, and ‘*awa* to Hawaiian farmers. The rituals of Lono “the father of waters” and the annual *Makahiki* festival, which honored Lono and which began before the coming of the *kona* (southerly) storms and lasted through the rainy season (the summer months), were of great importance to the native residents of this region. The significance of rituals and ceremonial observances in cultivation and indeed in all aspects of life was of great importance to the well-being of the ancient Hawaiians, and cannot be overemphasized or overlooked when viewing traditional sites of the cultural landscape.

### 4.2.2.3 *Hawaiian Land Use and Resource Management Practices*

Over the generations, the ancient Hawaiians developed a sophisticated system of land and resources management. By the time *‘Umi-a-Līloa* rose to rule the island of Hawai‘i in ca. 1525, the island (*moku-puni*) was divided into six districts or *moku-o-loko*. On the island of Hawai‘i, the district of Kona is one of six major *moku-o-loko* within the island. The district of Kona itself extends from the shore across the entire volcanic mountain of Hualālai, and continues to the summit of Mauna Loa, where Kona is joined by the districts of Ka‘ū, Hilo, and Hāmākua.

Kona, like other large districts on the island of Hawai‘i, was further divided into *‘okana* or *kalana* (regions of land smaller than the *moku-o-loko*, yet comprising a number of smaller units of land). In the region now known as Kona ‘akau (North Kona), there are several ancient regions (*kalana*) as well. The southern portion of North Kona was known as “Kona kai ‘ōpua” (interpretively translated as: Kona of the distant horizon clouds above the ocean) and included the area extending from Lanihau (the present-day vicinity of Kailua Town) to Pu‘uohau (now known as Red Hill). The northern-most portion of North Kona was called “Kekaha” (descriptive of an arid coastal place). Native residents of the region affectionately referred to their home as *Kekaha-wai-‘ole o nā Kona* (Waterless Kekaha of the Kona District), or simply as the *āina kaha*. It is within this region of Kekaha that the lands of O‘oma are found.

The *ahupua‘a* were also divided into smaller individual parcels of land (such as the *‘ili*, *kō‘ele*, *māla*, and *kīhāpai*, etc.), generally oriented in a *mauka-makai* direction, and often marked by stone alignments (*kuaiwi*). In these smaller land parcels the native tenants tended fields and cultivated crops necessary to sustain their families and the chiefly communities with which they were associated. As long as sufficient tribute was offered and *kapu* (restrictions) were observed, the common people, who lived in a given *ahupua‘a*, had access to most of the resources from mountain slopes to the ocean. These access rights were almost uniformly tied to residency on a particular land, and earned as a result of taking responsibility for stewardship of the natural environment and supplying the needs of the *ali‘i*.

Entire *ahupua‘a*, or portions of the land, were generally under the jurisdiction of appointed *konohiki* or lesser chief-landlords who answered to an *ali‘i-‘ai-ahupua‘a* (chief who controlled

the *ahupua'a* resources). The *ali'i-'ai-ahupua'a* in turn answered to an *ali'i 'ai moku* (chief who claimed the abundance of the entire district). Thus, *ahupua'a* resources supported not only the *maka'āinana* and *'ohana* who lived on the land, but also contributed to the support of the royal community of regional and/or island kingdoms.

This form of district subdividing was integral to Hawaiian life and was the product of strictly adhered to resources management planning. In this system, the land provided fruits and vegetables and some meat in the diet, and the ocean provided a wealth of protein resources. Also, in communities with long-term royal residents, divisions of labor (with specialists in various occupations on land and in procurement of marine resources) came to be strictly adhered to. It is in this cultural setting that we find O'oma and the Kula Nei project area.

The *ahupua'a* of O'oma (historically, O'oma 1<sup>st</sup> and O'oma 2<sup>nd</sup>) are two of some twenty ancient *ahupua'a* within the *'okana* of *Kekaha-wai-'ole*. The place name O'oma can be literally translated as concave. To date, no tradition explaining the source of the place name has been located, though it is possible that the name refers to the indentation of the shoreline fronting a portion of O'oma. A few place names within O'oma were discussed in traditional accounts, and thus there is some indication of the histories associated with this land.

While only limited native accounts have been recorded about O'oma, it is known that the land was so esteemed that during the youth of Kauikeaouli (later known as Kamehameha III), the young prince - son of Kamehameha I and his sacred wife Keōpūolani - was taken to be raised near the shore of O'oma under the care of his stewards from infancy until he was five years old. Again, this is a significant part of the history of this land, as great consideration went into all aspects of the young king's upbringing.

#### **4.2.2.4 The Environmental Setting of O'oma**

The *ahupua'a* of O'oma cross several environmental zones that are generally called *wao* in the Hawaiian language. These environmental zones include the near-shore fisheries and shoreline strand (*kahakai*) and the *kula kai/kula uka* (shoreward/inland plains). These regional zones were greatly desired as places of residence by the natives of the land.

While the *kula* region of O‘oma and greater Kekaha is now likened to a volcanic desert, native and historic accounts describe or reference groves of native hardwood shrubs and trees such as *‘ūlei* (*Osteomeles anthyllidifolia*), *ēlama* (*Diospyros ferrea*), *uhiuhi* (*Caesalpinia kawaiensis*), and *ohe* (*Reynoldsia sandwicensis*) extending across the land and growing some distance shoreward. The few rare and endangered plants found in the region, along with small remnant communities of native dryland forest, give an indication that there was a significant diversity of plants growing upon the *kula* lands prior to the introduction of ungulates.

The lower *kula* lands receive only about 20 inches of rainfall annually. It is because of the *kula* land’s dryness that the larger region, of which O‘oma is a part, is known as “Kekaha.” While on the surface, there appears to be little or no potable water to be found, the very lava flows which cover the land contain many underground streams that are channeled through subterranean lava tubes which feed the springs, fishponds, and anchialine ponds on the *kula kai* (coastal flats).

Continuing into the *kula uka* (inland slopes), the environment changes as elevation increases. Based on historic surveys, it appears that O‘oma ends at a survey station named Kuhiaka, 2,145 feet above sea level. This zone is called the *wao kanaka* (region of man) and *wao nahele* (forest region). Rainfall increases to 30 or 40 inches annually and taller forest growth occurs. This region provided native residents with shelter for residential and agricultural uses and a wide range of natural resources that were of importance for religious, domestic, and economic purposes.

In O‘oma, this region is generally between the 1,200 to 2,200 foot elevation and is crossed by the present-day Māmalahoa Highway. The highway is situated not far below the ancient *ala loa*, or foot trail also known as *Ke-ala‘ehu*, which was part of a regional trail system passing through Kona from Ka‘ū and Kohala.

The ancient Hawaiians saw (as do many Hawaiians today) all things within their environment as being interrelated. That which was in the uplands shared a relationship with that which was in the lowlands, coastal region, and even in the sea. This relationship and identity with place worked in reverse as well, and the *ahupua‘a* as a land unit was the thread that bound all things together in Hawaiian life. In an early account written by Kihe (in *Ka Hōkū o Hawai‘i*, 1914-

1917), with contributions by John Wise and Steven Desha Sr., the significance of the dry season in Kekaha and the custom of the people departing from the uplands for the coastal region is further described:

... 'Oia ka wā e ne 'e ana ka lā iā Kona, hele a malo 'o ka 'āina i ka 'ai kupakupa 'ia e ka lā, a o nā kānaka, nā li 'i o Kona, pūhe 'e aku la a noho i kahakai kāhi o ka wai e ola ai nā kānaka – It was during the season, when the sun moved over Kona, drying and devouring the land, that the chiefs and people fled from the uplands to dwell along the shore where water could be found to give life to the people. (*Ka Hōkū o Hawai'i*, April 5, 1917 translated by Kepā Maly)

It appears that the practice of traveling between upland and coastal communities in the O'oma *ahupua'a* greatly decreased by the middle of the nineteenth century. Indeed, the only claimant for *kuleana* land in O'oma, during the *Māhele 'Āina* of 1848 - when native tenants were allowed to lay claim to lands on which they lived and cultivated - noted that he was the only resident in O'oma at the time. This is perhaps explained by the fact that at time of the *Māhele* there was a significant decline in the Hawaiian population, and changes in Hawaiian land tenure led to the relocation of many individuals from various lands.

#### **4.2.2.5 Native Traditions and Historical Accounts of O'oma and the Kekaha Region**

A section of the cultural impact assessment report presents *mo'olelo* - native traditions and historical accounts (some translated from the original Hawaiian by Kepā Maly) - of the Kekaha region that span several centuries. There are very few accounts that have been found to date that specifically mention O'oma. Thus, narratives that describe neighboring lands within the Kekaha region help provide an understanding of the history of O'oma, describing features and the use of resources that were encountered on the land.

The reason there are so few accounts for O'oma may be that it may have been considered a marginal settlement area, occupied only after the better situated lands of Kekaha - those lands with the sheltered bays, and where fresh water could be easily obtained - were populated. As the island population grew, so too did the need to expand to more remote or marginal lands. This

thought is found in some of the native traditions and early historic accounts included in the assessment report. However, as people populated the Kekaha lands, they came to value its fisheries - those of the deep sea, near shore, and inland fishponds.

The native account of Punia (also written Puniaki – cf. Kamakau 1968), is perhaps among the earliest accounts of the Kekaha area, and in it is found a native explanation for the late settlement of Kekaha. The following narratives are paraphrased from Fornander's *Hawaiian Antiquities and Folklore* (Fornander 1959):

### **Punia: A Tale of Sharks and Ghosts of Kekaha**

Punia was born in the district of Kohala, and was one of the children of Hina. One day, Punia desired to get lobster for his mother to eat, but she warned him of Kai'ale'ale and his hoards of sharks who guarded the caves in which lobster were found. These sharks were greatly feared by all who lived along, and fished the shores of Kohala for many people had been killed by the sharks. Heeding his mother's warning, Punia observed the habits of the sharks and devised a plan by which to kill each of the sharks. Setting his plan in motion, Punia brought about the deaths of all the subordinate sharks, leaving only Kai'ale'ale behind. Punia tricked Kai'ale'ale into swallowing him whole. Once inside Kai'ale'ale, Punia rubbed two sticks together to make a fire to cook the sweet potatoes he had brought with him. He also scraped the insides of Kai'ale'ale, causing great pain to the shark. In his weakened state, Kai'ale'ale swam along the coast of Kekaha, and finally beached himself at Alula, near the point of Maliu in the land of Kealakehe. The people of Alula, cut open the shark and Punia was released.

At that time Alula was the only place in all of Kekaha where people could live, for all the rest of the area was inhabited by ghosts. When Punia was released from the shark, he began walking along the trail, to return to Kohala. While on this walk, he saw several ghosts with nets all busy tying stones for sinkers to the bottom of the nets, and Punia called out in a chant trying to deceive the ghosts and save himself:

*Auwe no hoi kuu makuakane o keia kaha e! Alas, O my father of these coasts!*

*Elua wale no maua lawaia o keia wahi.* We were the only two fishermen of this place (Kaha).

*Owau no o ko 'u makuakane,* Myself and my father,

*E hoowili aku ai maua i ka ia o ianei,* Where we used to twist the fish up in the nets,

*O kala, o ka uhu, o ka palani,* The kala, the uhu, the palani,

*O ka ia ku o ua wahi nei la,* The transient fish of this place.

*Ua hele wale ia no e maua keia kai la!* We have traveled over all these seas,

*Pau na kuuna, na lua, na puka ia.* All the different place, the holes, the runs.

*Make ko 'u makuakane, koe au.* Since you are dead, father, I am the only one left.

Hearing Punia's wailing, the ghosts said among themselves, "Our nets will be of some use now, since here comes a man who is acquainted with this place and we will not be letting down our nets in the wrong place." They then called out to Punia, "Come here." When Punia went to the ghosts, he explained to them, the reason for his lamenting; "I am crying because of my father, this is the place where we used to fish. When I saw the lava rocks, I thought of him." Thinking to trick Punia and learn where all the *ku'una* (net fishing grounds) were, the ghosts told Punia that they would work under him. Punia went into the ocean, and one-by-one and two-by-two, he called the ghosts into the water with him, instructing them to dive below the surface. As each ghost dove into the water, Punia twisted the net entangling the ghosts. This was done until all but one of the ghosts had been killed. That ghost fled and Kekaha became safe for human habitation (Fornander 1959:9-17).

### Ka-Lani-Kau-i-ke-Aouli (Kamehameha III)

In ca. 1813, Ka-lani Kau-i-ke-aouli, who grew up to become Kamehameha III, was born. S.M. Kamakau (1961) tells us that the baby appeared to be still-born, but that shortly after birth, he

was revived. Upon the revival of the baby, he was given to the care of Ka-iki-o-‘ewa, who with Keawe-a-mahi and family, raised the child in seclusion at O‘oma for the first five years of the young king’s life. Kauikeaouli apparently held some interest in the land of O‘oma 2<sup>nd</sup> through the *Māhele ‘Āina*, as he originally claimed O‘oma 2<sup>nd</sup> as his personal property. Though he subsequently gave it up to the Kingdom (Government) later during the Division.

### Traditional Features and Residents of O‘oma and Vicinity

It is not until the early twentieth century that we find a few detailed native accounts which tell of traditional features and residents of O‘oma and the vicinity. The writings of John Whalley Hermosa Isaac Kihe, a native son of Kekaha, in Hawaiian language newspapers (recently translated by Kepā Maly from the original Hawaiian texts), share the history of the land and sense the depth of attachment that native residents felt for O‘oma and the larger Kekaha-wai-‘ole-o-nā-Kona.

Kihe (who also wrote under the name of Ka-‘ohu-ha‘aheo-i-nā-kuahiwi-‘ekolu) was born in 1853, his parents were native residents of Honokōhau and Kaloko (his grandfather, Kuapāhoa, was a famed *kahuna* of the Kekaha lands). During his life, Kihe taught at various schools in the Kekaha region; served as legal counsel to native residents applying for homestead lands in O‘oma and vicinity; worked as a translator on the Hawaiian Antiquities collections of A. Fornander; and was a prolific writer himself. In the later years of his life, Kihe lived at Pu‘u Anahulu and Kalaoa, and he is fondly remembered by elder *kama‘āina* of the Kekaha region. Kihe, who died in 1929, was also one of the primary informants to Eliza Maguire, who translated some of the writings of Kihe, publishing them in abbreviated form in her book “Kona Legends” (1926).

Writers today have varying opinions and theories pertaining to the history of Kekaha, residency patterns, and practices of the people who called Kekaha-wai-‘ole-o-nā-Kona home. For the most part, the interpretations are limited by the fragmented nature of the physical remains and historical records, and by a lack of familiarity with the diverse qualities of the land. As a result, most of us only see the shadows of what once was, and it is difficult at times to comprehend how anyone could have carried out a satisfactory existence in such a rugged land.

Kihe and his co-authors provide readers with several references to places and events in the history of O‘oma and neighboring lands. Through the narratives, one can learn of place name origins, areas of ceremonial significance, how resources were managed and accessed, and the practices of those native families who made this area their home.

One example of the rich materials recorded by native writers is found in “*Ka‘ao Ho‘oniua Pu‘uwai no Ka-Miki*” (The Heart Stirring Story of Ka-Miki). This tradition is a long and complex account that was published over a period of four years (1914-1917) in the weekly Hawaiian-language newspaper *Ka Hōkū o Hawai‘i*. The narratives were primarily recorded for the paper by Hawaiian historians John Wise and J.W.H.I. Kihe.

While “*Ka-Miki*” is not an ancient account, the authors used a mixture of local stories, tales, and family traditions in association with place names to tie together fragments of site-specific histories that had been handed down over the generations. Also, while the personification of individuals and their associated place names may not be entirely “ancient,” such place name-person accounts are common throughout Hawaiian (and Polynesian) traditions. The traditional account “*Ka-Miki*” (which begins on page 17 of the cultural impact assessment report) and other traditional accounts can be found in the report in Appendix L.

#### **4.2.2.6 Land Tenure in O‘oma and Vicinity**

This section describes land tenure (residency and land use) and identifies families associated with O‘oma and its neighboring lands. The documentation is presented chronologically within the following subsections, The *Māhele ‘Āina* (1848): Disposition of O‘oma, Land Grants in O‘oma and Vicinity (1855-1864), The Government Homesteading Program in Kekaha, Field Surveys of J.S. Emerson (1882-1889), and Trails and Roads of Kekaha (Governmental Communications).

Through the traditions and early historical accounts, there are descriptions of early residences and practices of the native families on the lands of O‘oma and within greater Kekaha. Importantly, chiefly associations with the land of O‘oma 2<sup>nd</sup> are found, as documented by the residency of the chiefs Kaikio‘ewa, and Keaweamahi, their families, and their retainers, while

they were serving as the guardians of the young king, Kauikeaouli (Kamehameha III in ca. 1813-1818; Kamakau 1961 and Gov. Kapeau, 1847 in this study). Among the earliest government records documenting residency in O‘oma and vicinity are those of the *Māhele ‘Āina* (Land Division), Interior and Taxation Departments, Roads and Public Works, and the Government Survey Division.

None of the lands of the Kula Nei project were part of any claims by native tenants made during the *Māhele*, or any of the applications for Royal Patent Grants, according to historic records.

#### The *Māhele ‘Āina* (1848): Disposition of O‘oma

In Precontact Hawai‘i, all land, ocean, and natural resources were held in trust by the high chiefs (*ali‘i ‘ai ahupua‘a* or *ali‘i ‘ai moku*). By 1845, the Hawaiian system of land tenure was being radically altered, and the foundation for implementing the *Māhele ‘Āina* was set in place, a system of fee-simple right of ownership.

As a result of the *Māhele*, all land in the Kingdom of Hawai‘i came to be placed in one of three categories: (1) Crown Lands (for the occupant of the throne); (2) Government Lands; and (3) *Konohiki* Lands (cf. Indices of Awards 1929). The “Enabling” or “*Kuleana Act*” of the *Māhele* (December 21, 1849) further defined the framework by which *hoa‘āina* (native tenants) could apply for and be granted fee-simple interest in “*Kuleana*” lands. The *Kuleana Act* also reconfirmed the rights of *hoa‘āina* to access, subsistence, and collection of resources necessary to their life upon the land in their given *ahupua‘a*.

In the *Buke Kakau Paa no ka Mahele Aina* (Land Division Book), between Kamehameha III and his supporters, it is learned that by the time of the *Māhele ‘Āina*, O‘oma was divided into two *ahupua‘a*, O‘oma 1<sup>st</sup> and 2<sup>nd</sup>. O‘oma 1<sup>st</sup> was claimed by Moses Kekūāiwa (brother of Kamehameha IV and V and Victoria Kamāmalu), one of the children of Kīna‘u and M. Kekūānao‘a, thus, a grandson of Kamehameha I. O‘oma 2<sup>nd</sup> was held by Kamehameha III. On March 8, 1848, Kamehameha III assigned his interest in O‘oma 2<sup>nd</sup> to the Government Land inventory.

Moses Kekūāiwa died on November 24, 1848, and his father, Mataio Kekūānao‘a, administrator of the estate, relinquished in commutation his rights to O‘oma 1<sup>st</sup>, giving the land over to the Government Land inventory (Foreign Testimony Volume 3:408). Thus, both O‘oma 1<sup>st</sup> and 2<sup>nd</sup> were assigned to the Government Land inventory.

In 2000, *Kumu Pono Associates* digitized the entire collection of handwritten records from the *Māhele ‘Āina*. Most of the records are in the Hawaiian language. An extensive review of all the records identifies only one native tenant who filed a claim of residency and land use in O‘oma during the *Māhele*. The claim - *Helu* 9162, by Kahelekahi - was not awarded and, except for an entry in Native Register Volume 8, there is no further record of the claim. The account is of particular interest as Kahelekahi reported that in 1848, he was the only resident in O‘oma.

#### Land Grants in O‘oma and Vicinity 1855 - 1864

In conjunction with the *Māhele*, the King also authorized the issuance of Royal Patent Grants to applicants for tracts of land larger than those generally available through the Land Commission. The process for applications was set forth by the “Enabling Act” of August 6, 1850, which set aside portions of government lands for grants.

Between 1855 and 1864, at least six applications were made for land in the *ahupua‘a* of O‘oma, and four of them were patented. The applications were made by:

Grant	Applicant	Land	Acreage	Book and Year
1590	Kauhini	Hamanamana, Kalaoa and O‘oma 1	1,816	8:1855 (canceled)
1599	J. Hall	O‘oma 2	101.33	8:1855 (canceled)
1600	Kaakau	O‘oma 2	58.5	8:1855
2027	Kameheu	O‘oma 2	101.33	11:1856 (same area as Grant 1599)
2031	Koanui	O‘oma 1	24.5	11:1856
2972	Kaakau & Kama	Kalaoa 5 & O‘oma 1	515	14:1864

[“Index of all Grants Issued...Previous to March 31, 1886;” 1887]

The grants to Ka‘akau and Kameheu in O‘oma 2<sup>nd</sup> were patented by 1859. In the years following issuance of the first Royal Patents in O‘oma and the vicinity, native tenants and others

continued to express interest in the lands of O‘oma and neighboring *ahupua‘a*. Applications were made to either lease or purchase portions of the remaining government lands. In 1865, Government Surveyor and Land Agent S.C. Wiltse wrote to the Minister of the Interior describing the condition and status of the lands remaining to the government.

Historical records document that the primary use of the *kula* – lowlands in the Kekaha region, was for goat ranching, with limited cattle ranching. Throughout the 1800s, most of the cattle ranching occurred on the *mauka* slopes nearer the old upper government road.

While no formal awards or grants of land appear to have been made for the near shore *kula* or beach lands, it is logical to assume that families living in the uplands of the O‘oma and Kalaoa-Kohanaiki *ahupua‘a*, made regular visits to the near shore lands. The practice of continued travel between upland residences and near-shore shelters is also described by *kūpuna* Peter K. Park and Elizabeth Lee, who was born and raised in the *mauka* section of O‘oma, and by other *kūpuna* from neighboring lands.

#### The Government Homesteading Program in Kekaha 1882-1889

Following the *Māhele* and Grant programs of the middle 1800s, it was found that many native tenants still remained on lands for which they had no title. In 1884, the Hawaiian Kingdom initiated a program to create Homestead lots on Government lands—a primary goal being to get more Hawaiian tenants in possession of fee-simple property (Homestead Act of 1884). The Homestead Act allowed applicants to apply for lots of up to 20 acres in size, and required that they own no other land.

On the island of Hawai‘i, several lands in the Kekaha region of North Kona were selected and a surveying program was authorized to subdivide the lands. Initially, those lands extended from Kohanaiki to Kūki‘o. Because it was the intent of the Homestead Act to provide residents with land upon which they could cultivate crops or graze animals, most of the lots were situated near the *mauka* road (near the present-day Māmalahoa Highway) that ran between Kailua and ‘Akāhipu‘u.

Early in the process, native residents of Kekaha soon began writing letters to the Minister of the Interior, observing that 20-acre parcels were insufficient “to live on in every respect.” They noted that because of the rocky nature of the land, goats were the only animals that they could raise and ~~thus,~~thereby try to make their living.

During the first years of the Homestead Program, all of the remaining government lands in the Kekaha region from Kohanaiki to Kūki‘o 2<sup>nd</sup> had been leased to King David Kalākaua for grazing purposes. However, by 1889, the demand for homestead lots in O‘oma and other Kekaha lands was so great that King Kalākaua gave up his interest in the lands.

Tracts of land in Kohanaiki, O‘oma, Kalaoa and neighboring *ahupua‘a* were let out to native residents, and eventually to non-native residents as well. Those lands which were not sold to native tenants were sold or leased to ranching interests - most of which came under John A. Maguire of Hu‘ehu‘e Ranch.

O‘oma 2<sup>nd</sup> was divided into homestead parcels, but only six lots were made in the subdivision. Four Homestead lots ~~were subdivided~~ between 700 and 1,100 feet elevation were subdivided, each containing 40.5 to 45 acres, which comprises the bulk of the Kula Nei project area as encircled in Figure 4-6.

Land use on these parcels associated with the Homestead Grants began in the early twentieth century and consisted of both livestock grazing and small-scale agriculture (primarily sweet potato cultivation).

### Trails and Roads of Kekaha

*Ala hele* (trails and byways) and *alaloa* (regional thoroughfares) are an integral part of the cultural landscape of Hawai‘i. The *ala hele* provided access for local and regional travel, subsistence activities, cultural and religious purposes, and for communication between extended families and communities. Trails were, and still remain, important features of the cultural landscape.

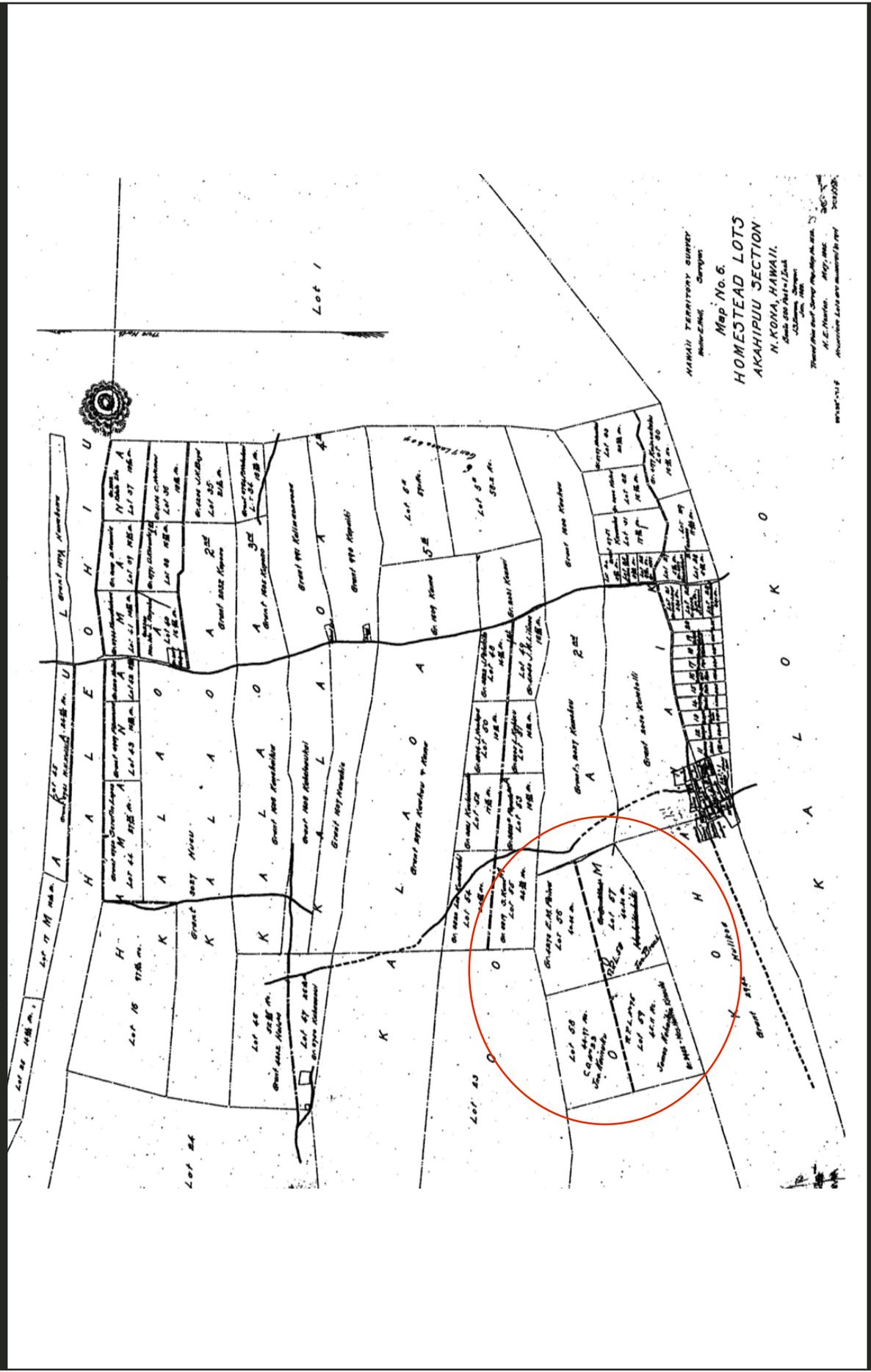
Traditional and historical accounts cited in the cultural impact assessment describe at least two traditional trails that were of regional importance which pass through the lands of O‘oma. One trail is the *alaloa* - parts of which were modified in the 1840s and later into what is now called the *Alanui Aupuni* (Government Road) or Māmalahoa Trail or King’s Highway, which crosses the *makai* (near shore) lands, linking royal centers, coastal communities, and resources.

The other major thoroughfare of this region is “*Kealaehu*” (The path of Ehu), which passes through the uplands, generally a little above the *mauka* Government Road or old Māmalahoa Highway, out to the ‘Akāhipu‘u vicinity, and then cuts down to Kīholo in Pu‘u Wa‘awa‘a. The *mauka* route provided travelers with a zone for cooler traveling, and access to inland communities and resources. It also allowed for more direct travel between the extremities of North and South Kona.

In addition to the *ala hele* and *alaloa*, running laterally with the shore, there is another set of trails that run from the shore to the uplands. By nature of traditional land use and residency practices, every *ahupua‘a* also included one or more *mauka-makai* trail. In native terminology, these trails were generally known as *ala pi‘i uka* or *ala pi‘i mauna* (trails that ascend to the uplands or mountain). Some of these trails are described in native accounts and oral history interviews cited in the cultural impact assessment.

~~Following~~ In the early nineteenth century, western contact brought about changes in the methods of travel (horses and other hoofed animals were introduced). By the mid-nineteenth century, wheeled carts were also being used on some of the trails. In the Kona region, portions of both near shore and upland *ala hele-ala loa* were realigned (straightened out), widened, and smoothed over, while other sections were simply abandoned for newer more direct routes. In establishing modified trail and early road systems - portions of the routes were moved far enough inland so as to make a straight route, taking travel away from the shoreline.

It was not until 1847, that detailed communications regarding road construction on the island of Hawai‘i began to be written and preserved. It was also at that time that the ancient trail system began to be modified and the alignments became a part of a system of “roads” called the “Alanui Aupuni” or Government Roads. Work on the roads was funded in part by government



**Figure 4-6**  
**HISTORIC SUBDIVISION MAP**  
Kula Nei  
North Kona, Hawaii  
Environmental Impact Statement  
Prepared for The Shopoff Group  
September 2007





appropriations, and through the labor or financial contributions of area residents and prisoners working off penalties (see communications below). Where the *Alanui Aupuni* crosses the lands of O‘oma, the alignment includes several construction methods, such as being lined with curbstones, being elevated, and ~~with~~ having stone filled “bridges” in areas that level out the contour of the roadway.

#### Twentieth Century Travel in ‘O‘oma and Neighboring lands of Kekaha

*Kama‘āina* who have participated in oral history interviews describe ongoing travel between the uplands and coastal lands of O‘oma and other *ahupua‘a* in Kekaha. The primary method of travel between 1900 and 1947 was by foot or on horse or donkey, and those who traveled the land were generally residents of the O‘oma, Kalaoa, Kohanaiki Homesteads, and other lands in the immediate vicinity. After WWII, retired military vehicles became available to the public. ~~After that time,~~ and *Alanui Aupuni* and some of the smaller trails along the shore were modified for vehicular traffic.

The primary routes of travel through the 1960s descended from upland Kohanaiki and Kaloko or came out of Kailua. In the 1950s, Hu‘ehu‘e Ranch bulldozed a jeep road to the shore at Kaloko. The ranch, and some individuals who went to the shore either as a part of their ranch duties or for leisure fishing along the coast, used this jeep road. The *Alanui Aupuni* was modified from Kailua to at least as far as Honokōhau and Kaloko and remained in use through the 1970s. It was not until the Queen Ka‘ahumanu Highway was opened (ca. 1973) that travel across the *kula kai* (shoreward plains) of O‘oma was once again made possible for the general public.

### **4.2.3 Oral History Interviews**

Information is presented from six oral history interviews that had been previously conducted by Kepā Maly. One of the interviews was conducted in 1996 and the others between 2000 and 2003. Rechtman Consulting, author of the cultural impact assessment, conducted additional interviews, two in 2005 and one in 2006.

#### **4.2.3.1 Methodology**

The oral-historical information was collected using a standard interview format that included obtaining personal and demographic information about each interviewee, as well as the details about how she or he came to know the lands of O‘oma and the larger Kekaha region. Information was obtained from the interviewee concerning the time and/or place of specific events they recalled. The informal interviews were conducted both in person on the land and over the telephone.

All of the interviewees had genealogical ties to early residents of lands within or adjoining the study area. Each is recognized within the community as being someone possessing specific knowledge of lore or historical wisdom pertaining to the lands, families, practices, and land use and subsistence activities in the region, and the older the informant, the greater the likelihood that the individual had personal communications or first-hand experiences with even older, now deceased Hawaiians and area residents.

Readers are asked to keep in mind that while the oral history component of the cultural impact assessment records a depth of cultural and historical knowledge of O‘oma and the Kekaha region, by nature, the documentation is incomplete. In the process of conducting oral history interviews, it is impossible to record all the knowledge or information that the interviewees possess. Thus, the records provide only glimpses into the stories being told, and of the lives of the interview participants. Every effort has been made to accurately relay the recollections, thoughts and recommendations of the people who so openly shared their personal histories.

#### **4.2.3.2 Oral History Participants**

All of the individuals that participated in the oral history interviews are directly descended from traditional residents of O‘oma and adjoining lands, and many of the personal recollections date back to the 1920’s. The interviewees also benefited from the words of their own elders and extended family members, whose personal recollections dated back to the middle 1800s. The following is a summary of the interviewees:

Valentine K. Ako is of Hawaiian ancestry and was born at Hōlualoa in 1926. He currently resides on Kauaʻi. Interviewed in 1996, *Kūpuna* Ako visited families and fished at Oʻoma and neighboring lands of Kekaha (ca. 1930s-1940s). He is well known for his knowledge of Hawaiian fishing customs and fisheries and is a member of several cultural committees.

George Kinoulu Kahananui Sr. is of Hawaiian ancestry and was born at Hōlualoa in 1925. Raised from infancy at Oʻoma 2<sup>nd</sup>, he continues to reside on old family land in Oʻoma. Uncle Kino regularly traveled the uplands and coastal lands of Oʻoma and Kekaha, learned of traditions and practices, and later managed the lands under Huʻehuʻe Ranch. He continues to fish on the coastal lands of Oʻoma and Kohanaiki. As a child he farmed the family lands that make up a portion of the current project area, a portion of which he retained ownership of until recently. Uncle Kino is well respected and known for his knowledge of the land and is a valued resource on a number of cultural committees.

Elizabeth Maluihi Ako Lee is of Hawaiian ancestry and is the sister of Uncle Kino. Auntie Elizabeth was born in 1929 and was raised by her *hanai* family, Kahananui, in upland Oʻoma. As a child she walked the upland trails and cultivated sweet potatoes on her family land in Oʻoma 2<sup>nd</sup> *ahupuaʻa*, both areas of which are now part of the proposed project area. She is a well-respected *lauhala* weaver and retains valuable cultural knowledge.

Samuel Keanaaina is of Hawaiian ancestry and was born at Kolaoa in 1926, where he remains a resident. A Descendant—descendant of families with generational ties to various lands of the Kekaha region, including Oʻoma, *Kūpuna* Keanaaina regularly traveled the uplands and coastal lands of Oʻoma and Kekaha. He learned of traditions and practices of the families of the land, and was a fisherman in his youth.

Malaea Agnes Keanaaina-Tolentino (with daughter Cynthia Torres) is of Hawaiian ancestry and was born at Kolaoa in 1928. She currently resides in Kealakehe and is the sister of Samuel Keanaaina, who shared in similar experiences as-to those of her brother. She was raised by her grandparents in Honokōhau Nui and as a youth she regularly traveled between the uplands and coastal lands of Honokōhau-Kaloko, Kalaoa-Oʻoma and Kohanaiki. *Kūpuna* Malaea has served on several cultural committees and is known for her knowledge of the land.

Ruby Keanaaina McDonald was born at Kalihi on O‘ahu in 1942 and moved to Kona when she was about six years old. *Kūpuna* Keanaaina and Malaea are her uncle and auntie. Ruby grew up with her aunties and uncles in Kona (*mauka* Kalaoa and Hōlualoa) and spent a lot of time with her *kūpuna* listening to their stories and later documenting the family geneology. As a child her experiences on the land in O‘oma included stopovers at the family’s *kula* house (Kamaka homestead) on the way to the shore to gather and process *lauhala*. She currently works as the Office of Hawaiian Affairs liaison for West Hawai‘i.

Peter Keka is of Hawaiian ancestry and was born at Waiki‘i in 1940. His family resided for years in the Kalaoa-Kohanaiki-Honokōhau vicinity, and he currently resides in Kohanaiki. Peter traveled the Kekaha region and fished at O‘oma and neighboring lands. He has been employed by the National Park Service and was responsible for the restoration of the Kaloko-Honokōhau fishponds and other cultural sites in the park.

Peter Keikua‘ana Park is of Hawaiian ancestry and was born at O‘oma in 1918. He currently resides in Kalaoa 5<sup>th</sup>. Born and raised in the upland section of O‘oma 2<sup>nd</sup>, he regularly traveled with his grandparents (adoptive parents) to the coastal lands of O‘oma. *Kūpuna* Park describes life on the lands and identifies elder families of O‘oma and neighboring lands. He also shares important documentation pertaining to traditions associated with fishing and cultivation of the land. *Kūpuna* Park’s elders were noted *lauhala* weavers, a craft that was passed on to him and his sisters and ~~was an activity~~ that sustained their family. They collected *lauhala* from ‘Ohikapua on the *kula* lands of Kalaoa 5<sup>th</sup>. *Kūpuna* Park is a noted weaver and resource for several cultural programs.

#### **4.2.3.3 Summary of Oral History Interviews**

By the late 1800s, only a few permanent ~~residence~~ residents remained along the O‘oma (and Kekaha) coastline. Primary residences were in the uplands, in the vicinity of the old Māmalahoa Highway. In that region, people were able to cultivate a wide range of crops - both native staples and new introductions -with which to sustain themselves, and in some case even to sell as cash crops.

By the middle to late 1800s, the *kula* lands, from around the 900-foot elevation to shore, were primarily used for goat, cattle, and donkey pasturage. The families of the uplands regularly traveled to the coast via trails. This was usually done to go fishing, or to round up cattle, goats, or donkeys. During periods of extreme dry weather, when water resources dried up, the families relied on the brackish water ponds in the near-shore lands.

Near the coastline several sites were described and, during field visits, pointed out by *kūpuna* Peter Kaikuaana Park and George Kinoulu Kahananui. These are also described by other elder *kama‘āina*. The features included old goat and cattle corrals, old *kahua hale* (house sites), shelters, springs, burial sites, and fishery resources. Except for the old *mauka/makai* trail, the *Alanui Aupuni (makai (near-shore) of Government Road – “King’s Trail”)*, and walls, few other features were known by the interviewees on the lower *kula* lands.

This is not surprising. The interviewees observed that when they were young, they were instructed not to wander around and *maha‘oi* (poke their noses) into caves and such. Their primary interest while traveling *makai* was to get to the fishing ground, and in reverse, to get back home. In the region of the lower homestead lots (the area of the Kula Nei project) and above, interviewees have described the occurrence of caves, walls, and various features, including burials. Occasionally, when working the range rounding up cattle, *huaka‘i pō* or night marchers have been heard or even seen. The explanation ~~being given is~~ that the people of old who once lived on the land ~~were~~ are traveling the trails in one direction or the other to attend to some ceremony or to venture out on fishing journeys, or other such activities. Both Auntie Elizabeth Maluihi Ako Lee and George Kinoulu Kahananui described their family’s agricultural practices within a portion of the Kula Nei project area and their father’s use of the *mauka/makai* trails to access the shore for fishing.

When asked about proposed development on the O‘oma lands and in other locations of Kekaha, the interviewees all speak with hesitancy. It is difficult for them to see the landscape that they have known all their lives, and ~~for~~ from which traditions were handed down, change.

None of the interviewees shared any specific knowledge about traditional cultural resources and associated practices within the boundaries of the Kula Nei project area. All interviewees believe

that *ilina* (burial sites) should be preserved in place; ~~and,~~ likewise, should any *heiau* or other important sites be located, they should be protected. Whenever possible all sites, such as house sites, petroglyphs, walls, and other features should be protected.

#### **4.2.3.4 Potential Impacts and Mitigation Measures**

The Office of Environmental Quality Control (OEQC) guidelines identify several possible types of cultural practices and beliefs that are subject to assessment. These include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs. The guidelines also identify the types of potential cultural resources associated with cultural practices and beliefs that are subject to assessment. Essentially these are natural features of the landscape and historic sites, including traditional cultural properties. In the Hawai'i Revised Statutes, Chapter 6E, a definition of traditional cultural property is provided.

“Traditional cultural property” means any historic property associated with the traditional practices and beliefs of an ethnic community or members of that community for more than fifty years. These traditions shall be founded in an ethnic community’s history and contribute to maintaining the ethnic community’s cultural identity. Traditional associations are those demonstrating a continuity of practice or belief until present or those documented in historical source materials, or both.

The origin of the concept of traditional cultural property is found in National Register Bulletin 38 published by the U.S. Department of Interior-National Park Service. “Traditional” as it is used implies a time depth of at least 50 years and a generalized mode of transmission of information from one generation to the next, either orally or by act. “Cultural” refers to the beliefs, practices, lifeways, and social institutions of a given community. The use of the term “Property” defines this category of resource as an identifiable place. Traditional cultural properties are not intangible; they must have some kind of boundary; ~~and.~~ They are subject to the same kind of evaluation as any other historic resource, with one very important exception: by definition, the significance of traditional cultural properties should be determined by the community that values them.

It is, however, ~~with~~in the definition of “Property” where~~in~~ there lies an inherent contradiction and a corresponding difficulty in the process of identification and evaluation of potential Hawaiian traditional cultural properties, because it is precisely the concept of boundaries that runs counter to the traditional Hawaiian belief system. The sacredness of a particular landscape feature is often times cosmologically tied to the rest of the landscape, as well as to other features on it. To limit a property to a specifically defined area may actually partition it from what makes it significant in the first place. However offensive the concept of boundaries may be, it is nonetheless the regulatory benchmark for defining and assessing traditional cultural properties.

As the OEQC guidelines do not contain criteria for assessing the significance for traditional cultural properties, this study will adopt the state criteria for evaluating the significance of historic properties, of which traditional cultural properties are a subset. To be significant the potential historic property or traditional cultural property 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 value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity.

While it is the practice of the SHPD to consider most historic properties significant under Criterion D at a minimum, it is clear that traditional cultural properties by definition would also be significant under Criterion E.

A further analytical framework for addressing the preservation and protection of customary and traditional native practices specific to Hawaiian communities resulted from the *Ka Pa'akai O Ka 'āina* v. Land Use Commission court case. The court decision established a three-part process relative to evaluating such potential impacts: first, to identify whether any valued cultural, historical, or natural resources are present and to identify the extent to which any traditional and customary native Hawaiian rights are exercised; second, to identify the extent to which those resources and rights will be affected or impaired; and third, to specify any mitigative actions to be taken to reasonably protect native Hawaiian rights if they are found to exist.

As a result of the numerous archaeological studies conducted within the current project area, fifty-two historic properties (Table 4-5) are recognized by SHPD to retain the potential to be impacted by the proposed development activities. These impacts could be direct, as the result of development activities; or indirect, resulting from increased access and site visitation traffic. The SHPD-approved treatment for fourteen of these sites is “preservation” and thirty-eight sites will be mitigated through data recovery.

For the nine sites containing burials, which are significant under both criterion D and E, all will be preserved pursuant to a burial treatment plan prepared in consultation with recognized descendants and the Hawai'i Island Burial Council.

The five other preservation sites, all significant under multiple criteria (A and D, C and D, E and D), will be treated in accordance with a preservation plan submitted to and approved by SHPD prior to final subdivision approval. Development activities will not commence until the site protection measures and stewardship aspects of these preservation plans are implemented. One of these sites is the former O'oma Homestead Road. This site will be integrated into the development plans and preserved as a pedestrian walkway and connected to a community park.

**Table 4-5: HISTORIC PROPERTIES THAT MIGHT BE IMPACTED BY THE PROPOSED DEVELOPMENT ACTIVITIES**

SIHP No.	Function	Temporal Association	Significance	Recommended Treatment
16103	Burial	Precontact	D,E	Preservation
16105	Burial	Precontact	D,E	Preservation
16126	Boundary	Historic	A,D	Preservation
16127	Habitation/Agricultural	Precontact	D	Data recovery
16128	Burial	Precontact	D,E	Preservation
16131	Habitation	Precontact	D	Data recovery
24413	Burial	Precontact	D, E	Preservation
24417	Habitation	Precontact	D	Data recovery
24418	Agriculture/clearing	Precontact	D	Data recovery
24420	Habitation	Precontact/Historic	D	Data recovery
24424	Water collection	Precontact	D, E	Preservation
24762	Habitation	Precontact	D	Data recovery
24764	Habitation	Precontact	D	Data recovery
24768	Burial/Habitation	Precontact	D,E	Preservation
24773	Habitation	Precontact	D	Data Recovery
24774	Boundary	Historic	A,D	Preservation
24776	Agriculture	Precontact	D	Data recovery
25035	Habitation	Precontact	D	Data recovery
25036	Habitation	Precontact	D	Data recovery
25037	Habitation	Precontact	D	Data recovery
25038	Habitation	Precontact	D	Data recovery
25039	Habitation	Precontact	D	Data recovery
25040	Habitation	Precontact	D	Data recovery
25041	Habitation	Precontact	D	Data recovery
25042	Habitation	Precontact	D	Data recovery
25043	Habitation	Precontact	D	Data recovery
25044	Habitation	Precontact	D	Data recovery
25045	Habitation	Precontact	D	Data recovery
25046	Habitation	Precontact	D	Data recovery
25047	Habitation	Precontact	D	Data recovery
25048	Habitation	Precontact	D	Data recovery
25049	Habitation	Precontact	D	Data recovery
25050	Habitation	Precontact	D	Data recovery
25051	Habitation	Precontact	D	Data recovery
25052	Habitation	Precontact	D	Data recovery

SIHP No.	Function	Temporal Association	Significance	Recommended Treatment
25053	Habitation	Precontact	D	Data recovery
25054	Habitation	Precontact	D	Data recovery
25055	Habitation	Precontact	D	Data recovery
25056	Habitation	Precontact	D	Data recovery
25057	Habitation	Precontact	D	Data recovery
25058	Habitation	Precontact	D	Data recovery
25059	Habitation	Precontact	D	Data recovery
25060	Habitation	Precontact	C, D	Preservation
25061	Habitation	Precontact	D	Data recovery
25062	Habitation	Precontact	D	Data recovery
25063	Habitation	Precontact	D	Data recovery
25065	Habitation	Precontact	D	Data recovery
25067	Habitation	Precontact	D, E	Preservation
25069	Burial	Precontact	D, E	Preservation
25070	Burial	Precontact	D, E	Preservation
25071	Burial	Precontact	D, E	Preservation
25072	Burial	Precontact	D, E	Preservation

To mitigate the potential impacts to the thirty-eight archaeological sites approved for data recovery, an archaeological data recovery plan will be submitted to and approved by SHPD prior to the commencement of any ground-altering development activities within the project area.

~~There were no~~ No ongoing cultural practices were identified relative to the land within the proposed Kula Nei Primary Project Area and Accessory Areas. However, based on past native Hawaiian traditional practices, the lava tube site with extensive water collection features (SIHP Site 24424) should be considered a traditional cultural property. This site will be preserved and protected from both direct and indirect impacts as detailed in a preservation plan, to be prepared in consultation with descendants of the area, and submitted to and approved by SHPD.

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			Data recovery and preservation of sites would not occur. Uncontrolled vegetation growth would eventually lead to the gradual loss of sites and decreased accessibility.
2. Proposed Action		✓		No ongoing cultural practices were identified relative to the land within the Primary Project Area and Accessory Areas. Archaeological sites and cultural resources determined to be significant under State criteria will be preserved. Homestead Road will be preserved as a pedestrian trail. Data recovery plans and burial treatment plans will be prepared as required.
3. Large-Lot Subdivision		✓		No ongoing cultural practices were identified relative to the land within the Primary Project Area and Accessory Areas. Archaeological sites and cultural resources determined to be significant under State criteria would be preserved. Data recovery plans and burial treatment plans would be prepared as required.
4. Small-Lot Subdivision		✓		No ongoing cultural practices were identified relative to the land within the Primary Project Area and Accessory Areas. Archaeological sites and cultural resources determined to be significant under State criteria would be preserved. Data recovery plans and burial treatment plans would be prepared as required.

### 4.3 ROADWAYS AND TRAFFIC

This discussion of the project’s impacts on traffic is presented in two formats, one non-technical (section 4.3.1 through 4.3.6) and the other technical (section 4.3.7). Given the acute interest in traffic conditions in West Hawai‘i, we felt it best to offer both formats. For those readers who need to understand the project’s impacts but are not interested in the technical jargon, we recommend the non-technical format. For those who are more familiar with traffic impact analysis, especially reviewing agencies, we recommend the technical discussion.

## NON-TECHNICAL

### 4.3.1 Background

The West Hawai'i roadway network in the general vicinity of the project area consists of four principal roadways: Queen Ka'ahumanu Highway and Māmalahoa Highway, each running in a north south direction, and Kaiminani Drive and Hina Lani Street, serving as the only streets that connect the highways, and running in an east-west (*mauka-makai*) direction.

To improve traffic conditions in the region, the State of Hawai'i is presently widening Queen Ka'ahumanu Highway. Meanwhile, the County Planning Department is proposing, among other projects, three new mid-level roadways that would parallel Queen Ka'ahumanu Highway at various points up the slope.

The upper most of these three proposed roadways would link Kealakaa Street to Holoholo Street and result in a continuous road that would extend from Palani Road five miles north to a new *mauka-makai* roadway (University Drive) at the Palamanui project site.

A portion of this so-called Holoholo Street extension runs through the Kula Nei project site. It is the County's desire that development projects that are bisected by the proposed roadways contribute land and funds for the construction of the roads. In this way, sections of the proposed roads will be built as each new project is developed. The County believes that improving the current regional roadway system with several new north-south and east-west roadways will give drivers more alternative routes, which will in turn take pressure off of Queen Ka'ahumanu Highway and Māmalahoa Highway.

### 4.3.2 Traffic Impacts

To study traffic impacts, we count the traffic that currently uses the affected roads, estimate what the traffic volumes on those roads will be in the year a proposed project will be completed (the so-called future year), estimate the volume of traffic that the proposed project will generate, and then compare the future year with and without the proposed project's traffic.

The ability of a road to accommodate traffic is affected by several factors including, among other things, its width, number of lanes, speed limit, and ~~the intersection design of its intersections.~~ For example, if there are no turning lanes at a given intersection on a two-lane road, everyone has to stop for a car making a left turn. If the intersection has a traffic signal and turning lanes, then arguably traffic moves ~~quicker~~ more quickly, to a point. When the volume of traffic on a roadway exceeds the roadway's capacity, traffic backs up.

Experience dictates that traffic tends to be heaviest during the so-called morning rush hour and afternoon rush hour when people are commuting between home and work. The actual time of the rush hour may vary from place to place. The term used to denote the rush hour is "peak hour" or "peak period" and it is usually discussed as the "A.M. peak" or the "P.M. peak."

Since different roads have varying numbers of lanes and widths, the best way to compare the performance of a roadway is by studying how traffic moves through its intersections. The measure created to compare the performance of intersections is called Level of Service (LOS). It assigns letters A through F ~~that to~~ conform to the amount of time a vehicle has to wait at an intersection. For signalized intersections, the letter A denotes a delay of less than 10 seconds. The letter F denotes a delay of more than 80 seconds. The LOS analysis is conducted for the A.M. peak and the P.M. peak to determine how a given intersection functions during the busiest times of the day. For the purposes of analysis, LOS E and F are considered to be overly congested conditions that warrant improvement. LOS D or better are considered to be a desired outcome.

Using this approach, we can compare the LOS of a given intersection to what it might be in 10 or 20 years, and then determine what improvements could be made that would help the intersection or the road function better. For the purposes of our analysis we have selected five existing intersections:

- Queen Ka'ahumanu Highway & Kaiminani Drive
- Holoholo Street & Kaiminani Drive
- Māmalahoa Highway & Kaiminani Drive

- Māmalahoa Highway & Hina Lani Street
- Queen Ka‘ahumanu Highway & Hina Lani Street

We have also included in our analysis an intersection that does not presently exist but is expected to be built by the time the Kula Nei project is completed:

- The Kealakaa Street/Holoholo Street extension & Hina Lani Street

### **4.3.3 The Kula Nei Project**

The traffic generated by a development project is based on the type of land uses involved using information in the form of standards published by the Institute of Transportation Engineers. Using an estimate of 9.57 vehicular trips per dwelling unit per day, when all 270 residential units are completed (in 2017), we estimate that the Kula Nei project will generate 2,584 one-way trips per day. We estimate 203 trips during the A.M. peak, with 75% of the trips leaving the Kula Nei project and 25% entering. During the P.M. peak, we estimate 273 trips, with 63% of the trips entering and 37% leaving. While it might be argued that a given estimate is too low or too high, or a slightly different assumption should be used, since the estimates are based on a standardized manual, they can be compared to other projects and, over time, the manual has been adjusted to respond to changing driving habits. The 2003 *Institute of Transportation Engineers’ Trip Generation* manual is in its seventh edition.

Based on historic traffic data, observations of traffic patterns in North Kona, discussions with residents, the geographic distribution of employment and commercial centers, and the location of existing and planned roadways, estimates are also made as to the direction in which a given “trip” is traveling.

Volume and travel direction gives us the ability to forecast how much traffic the Kula Nei project will generate and what roadways it will impact in the future. For the purposes of coordinating analyses with the State and the County, although the project will be completed in 2017, we use the year 2020 as the forecast year.

#### **4.3.4 The Regional Network**

To forecast future traffic in North Kona without the Kula Nei project, we must look at what other development might be occurring, what new roadways might be built, and how the population of the region might change. Some of this information is known, and some is unknown and must therefore be estimated.

For example, we know that a large residential subdivision is proposed on the south side of the Kula Nei project. It is called Kaloko Heights (also known as the Stanford Carr project). We know that the approved Kaloko Heights project will result in approximately 1,093 single family homes, 340 multi-family residences, and about 5.5 acres of commercial development. Using the same traffic engineering manual, we can estimate the number of vehicle trips it will generate.

As discussed above, we also know what region-wide improvements are proposed by the State and the County. Based on this information, we estimate that in 2020, about 9% of the vehicles using Queen Ka'ahumanu Highway and Māmalahoa Highway will divert to the new roads that have been built.

Finally, to account for population growth in the region, and taking into account the recent historical increases in traffic from 1998 through 2004, we estimate that peak hour traffic volumes will continue to increase at a rate of approximately 5% per year. Thus, for the year 2020, we have assumed that traffic volumes will have increased 70% since 2006 (5% per year for 14 years).

When the sum of all this information is computed, we are able to forecast the traffic conditions in 2020 at our six intersections, both without and with the Kula Nei project.

#### **4.3.5 Impact Analysis**

Following are the findings of our traffic analysis. Let us begin with how traffic was flowing through five of the intersections in 2006 (the sixth intersection doesn't exist yet).

### TRAFFIC CONDITIONS IN 2006

Intersections	LOS	Peak Hour
Queen Ka'ahumanu Highway & Kaiminani Drive	C	A.M.
	B	P.M.
Holoholo Street & Kaiminani Drive	C	A.M.
	B	P.M.
Māmalahoa Highway & Kaiminani Drive	F	A.M.
	F	P.M.
Māmalahoa Highway & Hina Lani Street	C	A.M.
	D	P.M.
Queen Ka'ahumanu Highway & Hina Lani Street	C	A.M.
	C	P.M.
Kealakaa Street/Holoholo Street extension & Hina Lani Street	does not exist	A.M.
		P.M.

Based on our actual traffic counts, we can see that four of the five intersections are operating well, but the intersection of Māmalahoa Highway and Kaiminani Drive is operating at the worst level possible during both the morning and evening rush hours.

When we combine all the information we gathered and forecast what traffic conditions will be like in 2020 **without the Kula Nei project**, we find that conditions will have worsened.

### TRAFFIC CONDITIONS IN 2020 WITHOUT THE KULA NEI PROJECT

Intersections	LOS	Peak Hour
Queen Ka'ahumanu Highway & Kaiminani Drive	C	A.M.
	B	P.M.
Holoholo Street & Kaiminani Drive	D	A.M.
	E	P.M.
Māmalahoa Highway & Kaiminani Drive	F	A.M.
	F	P.M.
Māmalahoa Highway & Hina Lani Street	F	A.M.
	F	P.M.
Queen Ka'ahumanu Highway & Hina Lani Street	E	A.M.
	F	P.M.
Kealakaa Street/Holoholo Street extension & Hina Lani Street	F	A.M.
	F	P.M.

The analysis suggests that of the five existing intersections, only the intersection of Queen Ka'ahumanu Highway and Kaiminani Drive will be operating at an acceptable level. The

intersection of Holoholo and Kaiminani will operate at acceptable levels during the morning rush hour, but will become congested during the afternoon rush hour.

By comparing 2006 and 2020 without the Kula Nei project side by side, we can confirm how bad traffic conditions will be without the project.

**COMPARISON OF TRAFFIC CONDITIONS BETWEEN 2006 AND 2020  
WITHOUT THE KULA NEI PROJECT**

Intersections	LOS in 2006	LOS in 2020	Peak Hour	Better or Worse?
Queen Ka`ahumanu Highway & Kaiminani Drive	C	C	A.M.	same
	B	B	P.M.	same
Holoholo Street & Kaiminani Drive	C	D	A.M.	worse
	B	E	P.M.	worse
Māmalahoa Highway & Kaiminani Drive	F	F	A.M.	same
	F	F	P.M.	same
Māmalahoa Highway & Hina Lani Street	C	F	A.M.	worse
	D	F	P.M.	worse
Queen Ka`ahumanu Highway & Hina Lani Street	C	E	A.M.	worse
	C	F	P.M.	worse
Kealakaa Street/Holoholo Street extension & Hina Lani Street	does not exist	F	A.M.	worse
		F	P.M.	worse

When we add the Kula Nei project's vehicle trips to the morning and afternoon rush hours in 2020, we get the following impacts.

### TRAFFIC CONDITIONS IN 2020 WITH THE KULA NEI PROJECT

Intersections	LOS	Peak Hour
Queen Ka'ahumanu Highway & Kaiminani Drive	C	A.M.
	C	P.M.
Holoholo Street & Kaiminani Drive	F	A.M.
	F	P.M.
Māmalahoa Highway & Kaiminani Drive	F	A.M.
	F	P.M.
Māmalahoa Highway & Hina Lani Street	F	A.M.
	F	P.M.
Queen Ka'ahumanu Highway & Hina Lani Street	E	A.M.
	F	P.M.
Kealakaa Street/Holoholo Street extension & Hina Lani Street	F	A.M.
	F	P.M.

Based on our analysis, it is evident that while the Kula Nei project will have a negligible impact on Queen Ka'ahumanu Highway (at both Kaiminani and Hina Lani), it will seriously impact traffic conditions at Holoholo Street and on Māmalahoa Highway.

### COMPARISON OF TRAFFIC CONDITIONS IN 2020 WITHOUT AND WITH THE KULA NEI PROJECT

Intersections	2020 LOS without Kula Nei	2020 LOS with Kula Nei	Peak Hour	Better or Worse?
Queen Ka'ahumanu Highway & Kaiminani Drive	C	C	A.M.	same
	B	C	P.M.	worse
Holoholo Street & Kaiminani Drive	D	F	A.M.	worse
	E	F	P.M.	worse
Māmalahoa Highway & Kaiminani Drive	F	F	A.M.	worse*
	F	F	P.M.	worse*
Māmalahoa Highway & Hina Lani Street	F	F	A.M.	worse*
	F	F	P.M.	worse*
Queen Ka'ahumanu Highway & Hina Lani Street	E	E	A.M.	worse*
	F	F	P.M.	worse*
Kealakaa Street/Holoholo Street extension & Hina Lani Street	F	F	A.M.	worse*
	F	F	P.M.	worse*

\* Although LOS conditions haven't changed, we know that adding more traffic to an intersection already at "F" will only make matters worse.

### 4.3.6 Mitigations

As disturbing as the results of a traffic impact analysis may be, they also provide a means for solving problems. Traffic engineers can recommend methods to improve traffic conditions and can rerun computer models to determine if they work. Using this method, we are able to propose a series of actions to mitigate the project's impacts ~~of, and accounting for~~ address background growth rates – not just Kula Nei traffic. First, we will look at what effects the proposed mitigation measures will have, and then we will discuss what they are.

#### TRAFFIC CONDITIONS IN 2020 WITH THE KULA NEI PROJECT AND WITH MITIGATION MEASURES

Intersections	LOS	Peak Hour
Queen Ka'ahumanu Highway & Kaiminani Drive	C	A.M.
	C	P.M.
Holoholo Street & Kaiminani Drive	B	A.M.
	B	P.M.
Māmalahoa Highway & Kaiminani Drive	C	A.M.
	C	P.M.
Māmalahoa Highway & Hina Lani Street	C	A.M.
	E	P.M.
Queen Ka'ahumanu Highway & Hina Lani Street	C	A.M.
	D	P.M.
Kealakaa Street/Holoholo Street extension & Hina Lani Street	D	A.M.
	D	P.M.

It is clearly evident that conditions at most of the intersections will have improved, but it is easiest to understand when a comparison of the future with and without the proposed mitigation measures is provided.

#### COMPARISON OF TRAFFIC CONDITIONS IN 2020 WITHOUT AND WITH MEASURE TO MITIGATE THE KULA NEI PROJECT

Intersections	2020 LOS with Kula Nei	2020 LOS with Kula Nei & Mitigation Measures	Peak Hour	Better or Worse?
Queen Ka'ahumanu Highway & Kaiminani Drive	C	C	A.M.	same
	C	C	P.M.	same
Holoholo Street & Kaiminani Drive	F	B	A.M.	better
	F	B	P.M.	better

Intersections	2020 LOS with Kula Nei	2020 LOS with Kula Nei & Mitigation Measures	Peak Hour	Better or Worse?
Māmalahoa Highway & Kaiminani Drive	F	C	A.M.	better
	F	C	P.M.	better
Māmalahoa Highway & Hina Lani Street	F	C	A.M.	better
	F	E	P.M.	better*
Queen Ka’ahumanu Highway & Hina Lani Street	E	C	A.M.	better
	F	D	P.M.	better
Kealakaa Street/Holoholo Street extension & Hina Lani Street	F	D	A.M.	better
	F	D	P.M.	better

While the proposed mitigation improves traffic flow during the morning rush hour, its impact is only marginal during the afternoon rush hour, leaving the intersection still operating at an unacceptable level.

To improve traffic conditions in the region, the Kula Nei project proposes the following mitigation measures ~~which~~ that are consistent with County Plans. In some instances, the proposed measures will be funded by Kula Nei. In others, the funding must be shared among a number of projects that contribute to the increased traffic. In those instances, the portion or “fair share” of the cost attributable to the Kula Nei project is provided. Kula Nei will mitigate Holoholo Street and Kaiminani Drive with a signal. No other project-specific mitigation is necessary.

The mitigation program for the project proposes measures to increase the capacity and/or efficiency of the roadway system at the locations where the addition of project related traffic would contribute to projected poor operating conditions. The primary emphasis was to identify physical and/or operational improvements that could be implemented within the existing or planned roadway rights-of-way.

- Holoholo Street and Kaiminani Drive – The intersection of Holoholo Street/Kaiminani Drive could be mitigated to LOS D or better by installing a traffic signal with the existing lane configuration. With the installation of the traffic signal, the intersection of Holoholo Street/Kaiminani Drive would operate at LOS B. While the project-related portion of the total forecast traffic growth at this intersection is approximately 28% (in the A.M. peak hour), the project’s fair-share contribution to the cost of this improvement is identified as

100% because the impact there is both project-specific (in the A.M. peak hour) and cumulative (in the P.M. peak hour).

- Māmalahoa Highway and Kaiminani Drive – The intersection of Māmalahoa Highway/Kaiminani Drive could be mitigated to LOS D or better by installing a traffic signal. With the installation of the traffic signal, the intersection of Māmalahoa Highway/Kaiminani Drive would operate at LOS C. The project's fair-share contribution to the cost of this mitigation measure is identified as 5.8%.
- Māmalahoa Highway and Hina Lani Street – A mitigation measure was developed that contemplates widening the southbound departure of Māmalahoa Highway to accommodate two travel lanes between this intersection and the existing two-lane segment of Māmalahoa Highway/Hawai'i Belt Road approaching Māmalahoa Highway, a distance of approximately 550 feet. The southbound approach would then provide one through lane and one shared through/right-turn lane. If this mitigation measure were determined to be feasible, the intersection of Māmalahoa Highway/Hina Lani Street would operate at LOS C during the A.M. peak hour and at LOS E during the P.M. peak hour. Due to physical constraints on the *mauka* side of Māmalahoa Highway, additional mitigation measures at this location, such as adding a second northbound lane, do not appear feasible. The project's fair-share contribution to the cost of this mitigation measure is identified as 5.1%.
- Kealakaa Street/Holoholo Street and Hina Lani Street – The intersection of Kealakaa Street/Holoholo Street and Hina Lani Street does not currently exist, so one lane on each approach with stop signs on the north-south direction were assumed. With this configuration, the intersection of Kealakaa Street/Holoholo Street and Hina Lani Street is predicted to operate at LOS F during both peak hours. In order to accommodate the projected increase in traffic at this intersection, a traffic signal should be installed and the east and westbound approaches should be constructed with separate left-turn lanes, resulting in one left-turn lane and one shared through/right-turn lane. With these improvements, the intersection is projected to operate at LOS D during both peak hours. The project's fair-share contribution to the cost of this mitigation measure is identified as 8.9%.

- Queen Ka‘ahumanu Highway and Hina Lani Street – The intersection of Queen Ka‘ahumanu Highway and Hina Lani Street could be mitigated to acceptable conditions by implementing an overlapping protected northbound right-turn phase and prohibiting U-turns on the westbound approach. With this improvement, the intersection of Queen Ka‘ahumanu/Hina Lani Street would operate at LOS D or better under cumulative plus project conditions. The project’s fair-share contribution to the cost of this mitigation measure is identified as 3.0%.

## TECHNICAL

### 4.3.7 Traffic Conditions

Following is a discussion of existing traffic conditions in the vicinity of the project area and an analysis of the proposed project’s impacts on future traffic conditions. This discussion is based upon a traffic impact analysis prepared for the proposed project by Fehr & Associates/Kaku Associates. The consultant’s report is presented in Appendix M.

The study analyzes the potential project-related traffic impacts on the roadway system in the vicinity of the proposed project. While the projected completion year of the proposed project is 2017, for planning purposes, the traffic study evaluates projected 2020 conditions. The impact analysis examines projected future conditions, both with and without the proposed project. The following traffic scenarios are analyzed in the study:

- Existing Conditions (2006) - The analysis of existing traffic conditions provides a basis for the remainder of the study. The existing conditions analysis includes an assessment of streets, traffic volumes, and operating conditions.
- Future Conditions with No Project (2020) - The objective of this scenario is to project future traffic growth and operating conditions resulting from regional growth and related projects in the vicinity of the project site, without consideration of traffic generated by the proposed project.

- Future Conditions with Project (2020) - The objective of this scenario is to project potential impacts of the proposed project on future traffic operating conditions with project traffic added to the cumulative base traffic forecasts in 2020.

The study analyzed the potential project-related traffic impacts during the typical weekday A.M. and P.M. peak hour traffic conditions at six intersections in the vicinity of the proposed project (see Figure 4-7). The analyzed intersections are:

1. Kaiminani Drive and Queen Ka‘ahumanu Highway (SR 19) (signalized)
2. Kaiminani Drive and Holoholo Street (stop-controlled)
3. Kaiminani Drive and Māmalahoa Highway (SR 190) (stop-controlled)
4. Hina Lani Street and Māmalahoa Highway (SR 190) (signalized)
5. Hina Lani Street and Kealakaa Street/Holoholo Street (future intersection)
6. Hina Lani Street and Queen Ka‘ahumanu Highway (SR 19) (signalized)

The effect of the proposed project on daily traffic volumes was also measured on the following four street segments:

1. Kaiminani Drive *mauka* of Queen Ka‘ahumanu Highway (SR 19)
2. Hina Lani Street *mauka* of Queen Ka‘ahumanu Highway (SR 19)
3. Māmalahoa Highway north of Kaalele Street (SR 190)
4. Māmalahoa Highway south of Hina Lani Street (SR 190)

Baseline traffic counts were collected at these locations (except for study intersection #5, which is a future intersection) in September 2006 (see Figure 4-8).

To analyze the traffic impacts of the proposed project, the traffic generated by the project is estimated based upon a number of assumptions including trip generation (the number of vehicular trips to and from the Kula Nei project), trip distribution (the anticipated destination of those vehicles), and trip assignment (the routes taken by those vehicles to reach their destination). Existing volumes of traffic on key roadways were recorded using traffic counts. Future traffic volumes were estimated based on an assumption of the rate of growth in traffic, based on historical data. A calculation of future conditions with and without the project was compared to existing conditions to determine the extent of traffic impact attributable to the Kula

Nei project. Finally, each of the impacts was analyzed to determine how any significant adverse impacts might be mitigated.

#### **4.3.7.1 Existing Roadway System**

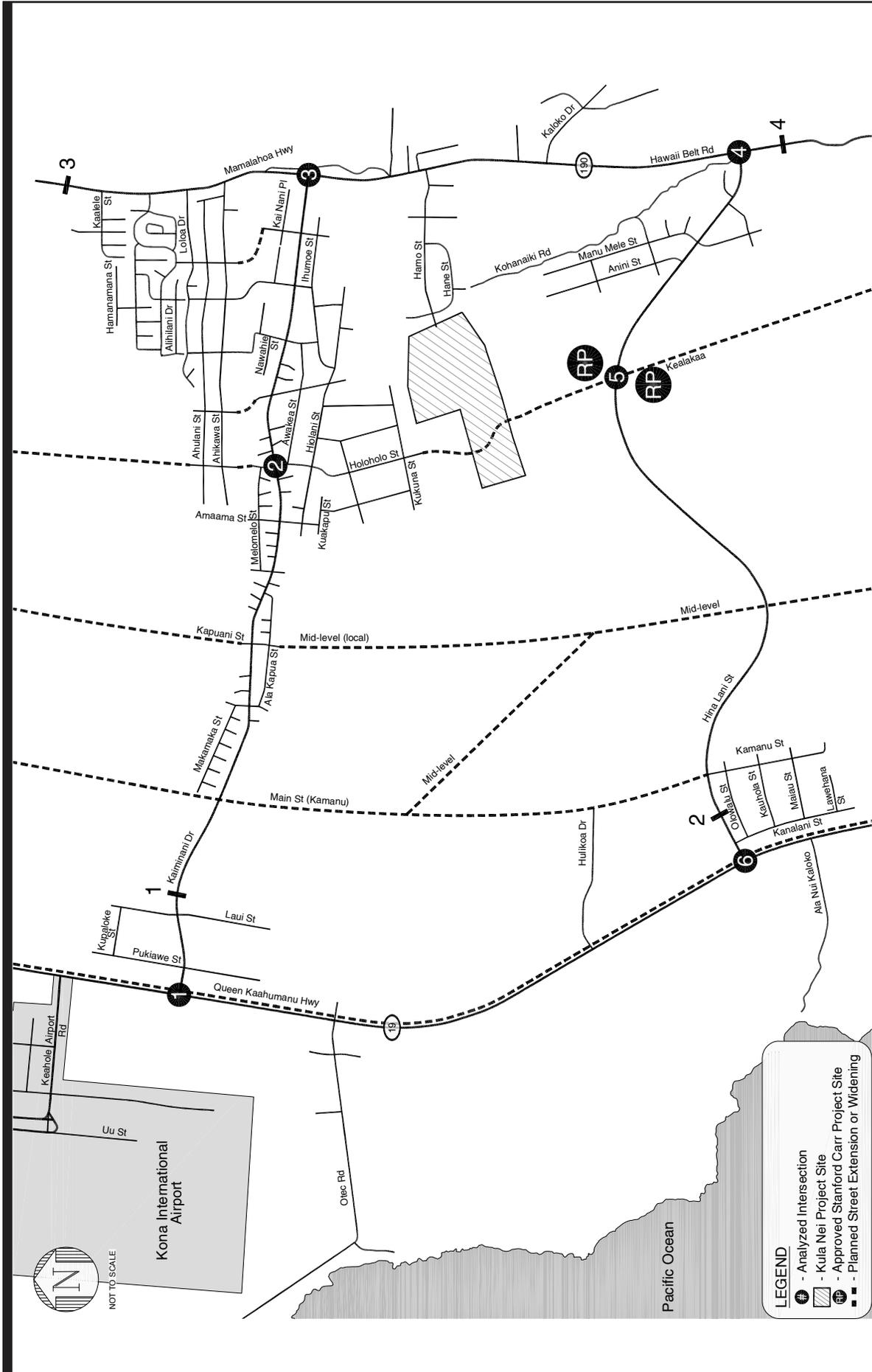
The study area, as shown in Figure 4-7, is generally bounded by a roadway network that includes Kaiminani Drive on the north, Queen Ka‘ahumanu Highway (SR 19) on the west, Hina Lani Street on the south, and Māmalahoa Highway (SR 190) on the east. Primary regional access to the area is provided by Queen Ka‘ahumanu Highway, which runs north-south approximately two miles *makai* of the project site, and Māmalahoa Highway, which runs north-south approximately one mile *mauka* of the project site. Kaiminani Drive and Hina Lani Street, running east-west, provide access between these highways. Holoholo Street and the proposed Kealakaa Street/Holoholo Street extension will serve the project site by providing access to Kaiminani Drive and Hina Lani Street. Direct access to Māmalahoa Highway through Hamo Street is not possible because Kona Hills Estates is a gated community.

#### **Traffic Counts**

Weekday peak period intersection turning movement counts were collected between 6:00 and 9:00 A.M. and between 3:00 and 6:00 P.M. at the five existing study intersections on Tuesday, September 12 and Wednesday, September 13, 2006. Existing weekday peak hour volumes at these intersections are illustrated in Figure 4-8 and the traffic count data sheets are provided in Appendix B of the Traffic Report (see Appendix M).

Twenty four-hour machine counts were conducted at the following four street segments for analysis of impacts of the proposed project on September 13, 2006. The existing daily traffic volume data are available in Appendix B of the Traffic Report. The four street segments are:

- Kaiminani Drive *mauka* of Queen Ka‘ahumanu Highway (SR 19)
- Hina Lani Street *mauka* of Queen Ka‘ahumanu Highway (SR 19)
- Māmalahoa Highway north of Kaalele Street (SR 190)
- Māmalahoa Highway south of Hina Lani Street (SR 190)

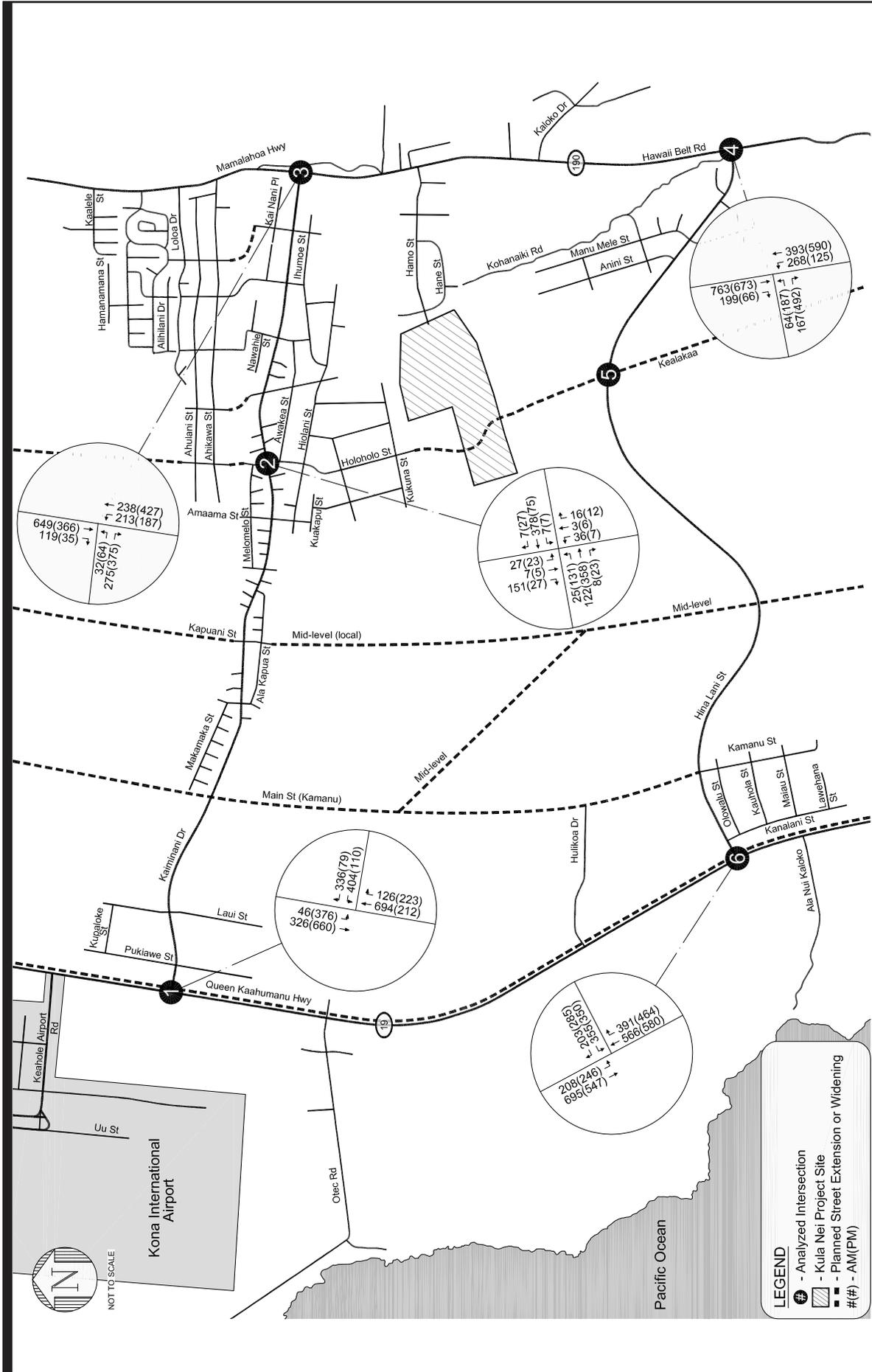


**Figure 4-7**  
**STUDY AREA AND ANALYZED LOCATIONS**  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

Source: Fehr & Peers/Kaku Associates, June 2007







**Figure 4-8**  
**EXISTING PEAK HOUR TRAFFIC VOLUMES**  
 Kula, Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

Source: Fehr & Peers/Kaku Associates, June 2007





### Level of Service Methodology

LOS is a qualitative measure used to describe the condition of traffic flow ranging from excellent conditions at LOS A to overload conditions at LOS F. Level of service definitions for signalized and unsignalized intersections are provided in Tables 4-6 and 4-7. LOS D is typically considered to be the minimum desirable level of service in urban areas.

LOS analyses were conducted at each of the study intersections to determine existing and future operating conditions using the operations methodology for signalized intersections and the two-way stop-controlled methodology for unsignalized intersections from *2000 Highway Capacity Manual* (2000 HCM) (Transportation Research Board, 2000).

### Analysis Results

The existing weekday A.M. and P.M. peak hour turning movements were used in conjunction with the LOS methodologies described above to determine existing operating conditions at each study intersection. Detailed LOS calculation worksheets are included in Appendix C of the Traffic Report.

**Table 4-6: LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS**

Level of Service	Volume/Capacity	Average Stopped Delay per Vehicle (seconds)*
A	0.000 - 0.600	≤10
B	>0.600 - 0.700	>10 and ≤20
C	>0.700 - 0.800	>20 and ≤35
D	>0.800 - 0.900	>35 and ≤55
E	>0.900 - 1.000	>55 and ≤80
F	> 1.000	>80

Source: Highway Capacity Manual (Transportation Research Board, 2000).

**Table 4-7: LEVEL OF SERVICE DEFINITIONS FOR UNSIGNALIZED INTERSECTIONS**

Level of Service	Average Total Delay (seconds/vehicle)
A	≤ 10.0
B	> 10.0 and ≤ 15.0
C	> 15.0 and ≤ 25.0
D	> 25.0 and ≤ 35.0
E	> 35.0 and ≤ 50.0
F	> 50.0

Source: Highway Capacity Manual (Transportation Research Board, 2000).

**Table 4-8: YEAR 2006 EXISTING CONDITIONS PEAK HOUR LEVELS OF SERVICE**

	Intersections	Peak Hour	V/C	Del/Veh*	LOS
1.	Queen Ka'ahumanu Highway (SR 19) & Kaiminani Dr	A.M.	0.872	30	C
		P.M.	0.552	16	B
2.	Holoholo St & Kaiminani Dr [a]	A.M.	NC	18	C
		P.M.	NC	15	B
3.	Māmalahoa Highway (SR 190) & Kaiminani Dr [a]	A.M.	NC	**	F
		P.M.	NC	**	F
4.	Māmalahoa Highway (SR 190) & Hina Lani St	A.M.	0.854	24	C
		P.M.	0.952	38	D
5.	Kealakea St/Holoholo St & Hina Lani St [b]	A.M.	NA	NA	NA
		P.M.	NA	NA	NA
6.	Queen Ka'ahumanu Highway (SR 19) & Hina Lani St	A.M.	0.858	30	C
		P.M.	0.890	34	C

Notes:

\* Delay indicates average stopped delay per vehicle in seconds for signalized intersections. The worst case vehicular delay is reported for stop-controlled intersections.

\*\* Indicates oversaturated conditions. Delay cannot be calculated.

NA = Not Applicable

NC = Not Calculated

[a] Intersection is controlled by stop signs on the minor approaches.

[b] Future intersection.

Table 4-8 summarizes the results of the analysis conducted at the five existing locations to assess the existing operating conditions at these intersections, including the average control delay and corresponding LOS for the five existing study intersections during the A.M. and P.M. peak hours. Calculated volume-to-capacity (V/C) ratios are also shown in Table 4-8. As indicated in Table 4-8, the intersection of Māmalahoa Highway and Kaiminani Drive is currently operating at LOS F during both the A.M. and P.M. peak hours. The remaining four existing study intersections are operating at LOS D or better during the A.M. and P.M. peak hours.

#### **4.3.7.2 Future Traffic Conditions Without The Project**

In order to evaluate the potential impact of traffic generated by the proposed project on the surrounding street system, it was necessary to develop estimates of future traffic conditions in the area both with and without the project. Future traffic conditions without the proposed project reflect traffic increases due to general regional growth and development as well as traffic increases generated by other specific developments in the vicinity of the project site.

Traffic projections were estimated for this study on the basis of actual traffic growth on Queen Ka‘ahumanu Highway (SR 19) and Māmalahoa Highway (SR 190) between 1998 and 2004, which shows that peak hour traffic volumes have increased at a rate of approximately 5% per year during the period. Accordingly, the 2006 existing traffic count data were increased by a total of 70% (5% per year x 14 years) through 2020, as shown in Table 4-9.

**Table 4-9: ESTIMATED TRAFFIC GROWTH  
KULA NEI RESIDENTIAL PROJECT**

	A.M. Peak Hour			P.M. Peak Hour		
	In	Out	Total	In	Out	Total
<b>Existing (2006)</b>						
Total Northbound and Southbound Volume in Study Area (SR19 and SR 190)	2,758	3,280	6,038	3,196	2,844	6,040
<b>Future (2020)</b>						
Kula Nei Project*	51	152	203	172	101	273
Stanford Carr Property**	278	777	1,055	941	599	1,540
Ambient Growth	<u>1,602</u>	<u>1,367</u>	<u>2,969</u>	<u>1,124</u>	<u>1,291</u>	<u>2,415</u>
Total Increased Northbound and Southbound Volume in Study Area (All Roads)	1,931	2,296	4,227	2,237	1,991	4,228

Notes:

The study area is defined in Chapter I.

2020 Future Trip Generation is based on 70% areawide growth rate discussed in Chapter II.

\* See Table 4-11 for details

\*\* See Table 4-10 for details

Information regarding potential future projects that are either under construction, planned, or proposed for development within or near the study area was obtained from several sources. There is one related project identified in the immediate study area, the Stanford Carr project just south of the proposed Kula Nei project. This approved project will construct approximately 1,093 single-family residences, 340 multi-family dwelling units, and 5.5 acres of commercial development on the north and south sides of Hina Lani Street (*Land Use Petition* [Docket No. A81-525], Y-O Limited Partnership, January 1983). As summarized in Table 4-10, it is estimated to generate approximately 1,055 trips during the morning peak hour (278 inbound, 777 outbound) and approximately 1,540 trips during the evening peak hour (941 inbound, 599 outbound).

**Table 4-10: TRIP GENERATION ESTIMATES FOR RELATED PROJECTS**

Index	Project Location	Project Description	ITE	SIZE	A.M. Peak Hour			P.M. Peak Hour		
					In	Out	Total	In	Out	Total
1	Stanford Carr*	SINGLE FAMILY RESIDENTIAL	210	1,093 DU	205	615	820	696	408	1,104
2	Stanford Carr*	MULTIPLE FAMILY RESIDENTIAL	220	340 DU	35	138	173	137	74	211
3	Stanford Carr*	COMMERCIAL	820	60 KSF**	38	24	62	108	117	225
Total					278	777	1,055	941	599	1,540

Sources:

\* Total trip generation was estimated using *Trip Generation, 7th Edition* (ITE, 2003) based on the Land Use Petition submitted by Y-O Limited Partnership in 1983.

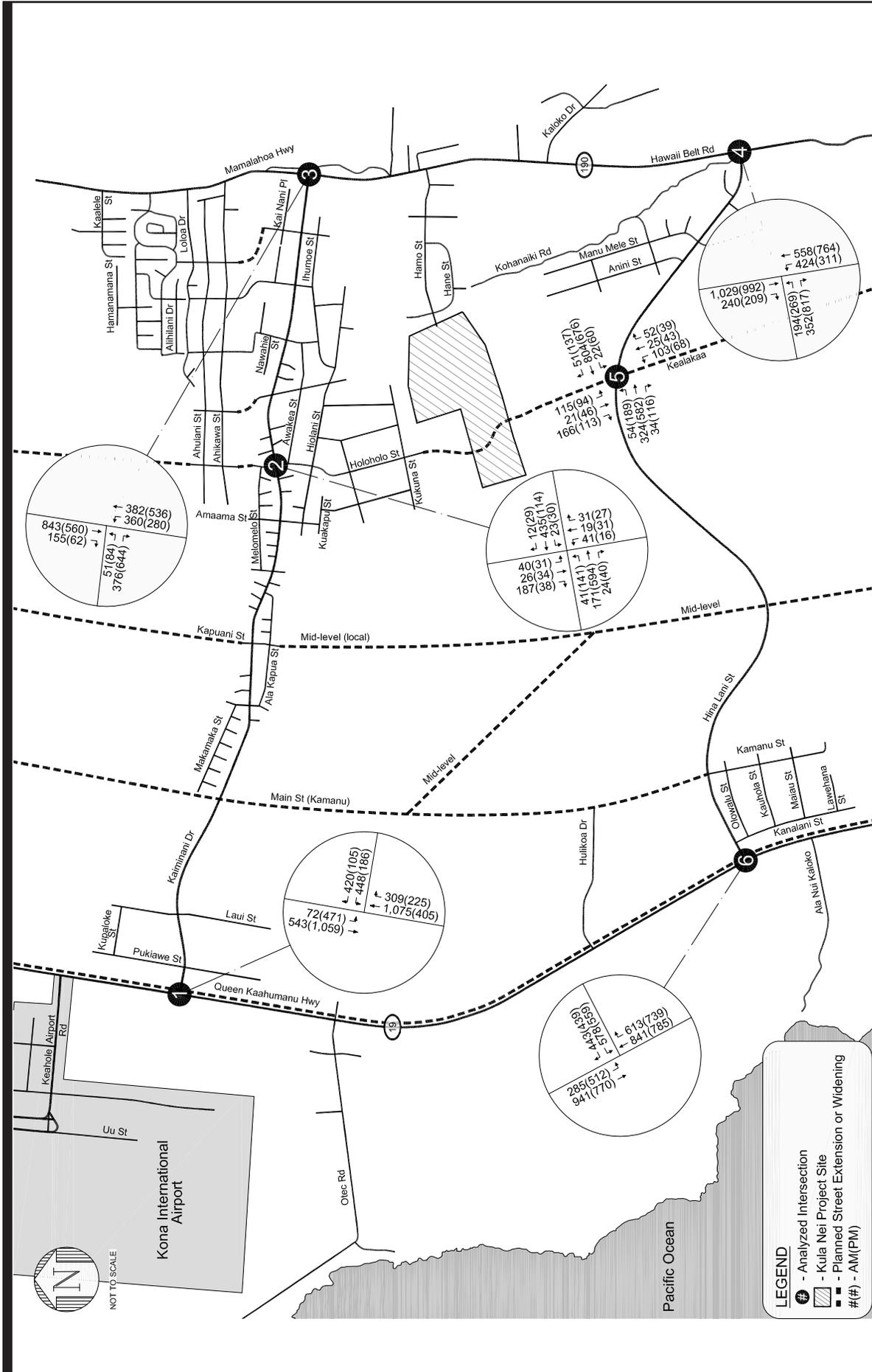
\*\* Assume 5.5 acres of commercial development will be developed at a 0.25 Floor Area Ratio.

The geographic distribution of traffic generated by developments such as this depends on several factors. These factors include the type and density of the proposed land uses, the geographic distribution of the population from which employees and/or patrons may be drawn, the geographic distribution of activity centers (employment, commercial, and other) to which residents of proposed residential projects may be drawn, and ~~its~~ the location in relation to the surrounding street system.

The resulting cumulative base traffic volumes, representing future conditions without the project for year 2020, are presented in Figure 4-9. These future projections take into account the estimated overall growth in the surrounding area without the addition of traffic generated by the proposed Kula Nei project.

Several key roadway improvements in or near the study area are planned for completion by 2020. These improvements, whether the result of local capital improvement programs or being made in connection with planned or approved projects, would result in dramatically improved mobility options for residents and visitors and in capacity changes at various locations throughout the study area. Relevant information from *Keahole to Honaunau Regional Circulation Plan* (Planning Department, County of Hawai‘i, August 2006) is presented in Figure 4-10. It shows that the following roadway system improvements are planned:

- Queen Ka‘ahumanu Highway – The main arterial highway through Kailua-Kona is currently being widened from two to four lanes (two in each direction) with a median from Kona International Airport to Henry Street in Kailua.
- Main Street (Kamanu Street) – Kamanu Street will be extended to connect with Kealakehe Parkway and north to the proposed University Drive.
- Mid-Level Road – This project will extend Henry Street from Palani Road to the Ane Keohokalole Highway and north to the proposed University Drive Extension
- University Drive – The proposed street planned north of Kaiminani Drive would carry *mauka-makai* traffic between Queen Ka‘ahumanu Highway and Māmalahoa Highway by connecting with the existing Makalei Drive.
- University Drive Extension – This project will extend the proposed Mid-Level (Local) Road to connect with Māmalahoa Highway north of the existing intersection of Makalei Drive and Māmalahoa Highway.
- Kealakaa Street/Holoholo Street Extension – The proposed street would connect to the proposed Kealakehe Parkway, Hina Lani Street, and Holoholo Street. Kula Nei proposes to construct the segment from Hina Lani to the existing alignment of Holoholo Street.
- Kalaoa Connector Roads – In order to connect two major subdivisions, Kona Palisades and Coastview, four internal connector roads would be established: Nana Street-Holoholo Street, Ahiahi Street-Kauhale Street, Holu Street-Keokeo Street, and Iliili Street-Kiekie Street.
- Intersection of Māmalahoa Highway and Kaiminani Drive – A new right turn lane on Kaiminani Drive to Māmalahoa Highway will be installed with estimated completion in June 2007.
- Intersection of Kealakaa Street/Holoholo Street and Hina Lani Street – A new intersection will be established when the project and the developments adjacent to the project open.

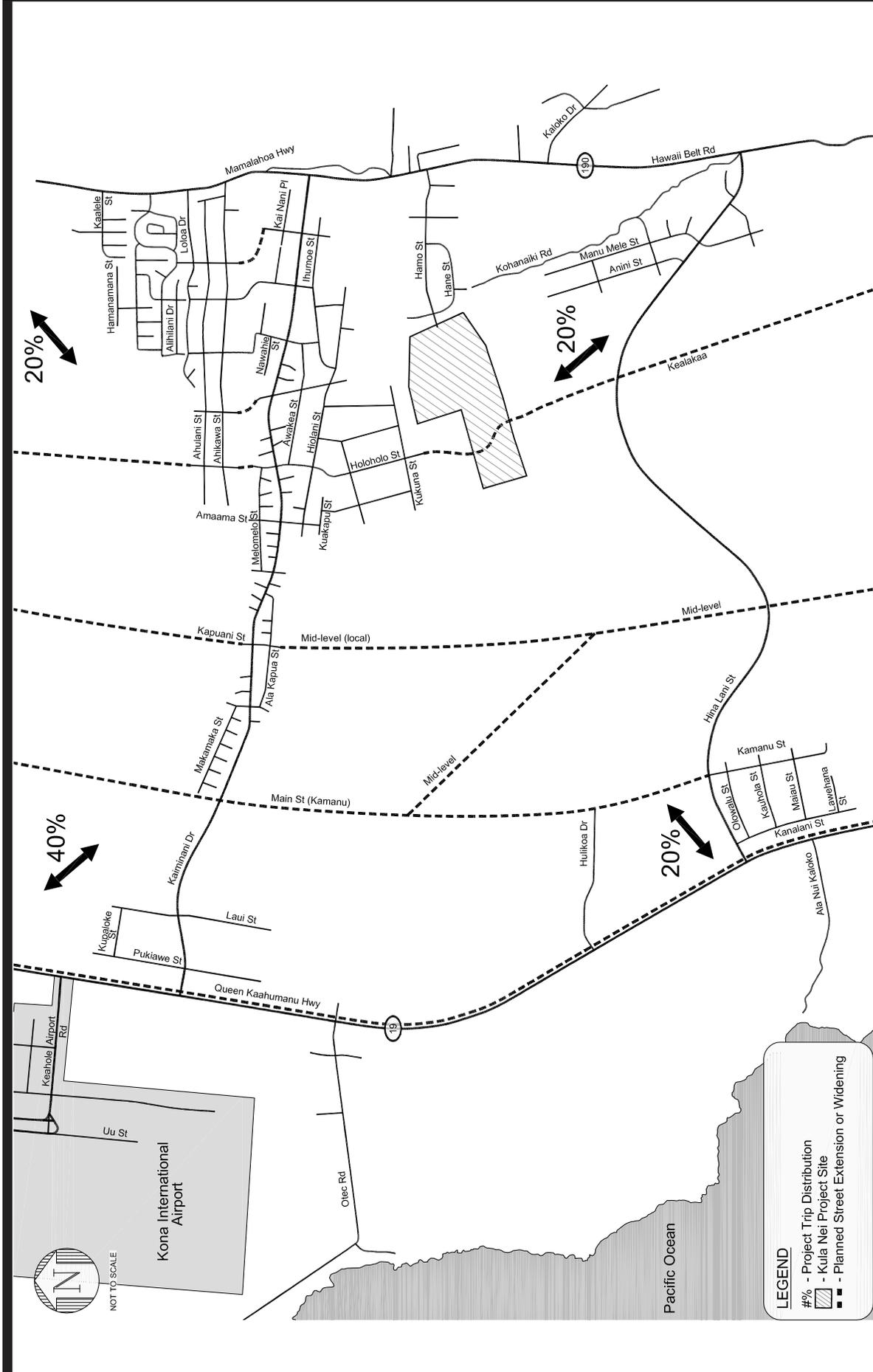


**Figure 4-9**  
 CUMULATIVE BASE PEAK HOUR TRAFFIC VOLUMES  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

Source: Fehr & Peers/Kaku Associates, June 2007







**Figure 4-10**  
**PROJECT TRIP DISTRIBUTION**  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

Source: Fehr & Peers/Kaku Associates, June 2007





Forecasts of cumulative base traffic volumes were developed by adding the total projected traffic growth to the background existing volumes and distributing it over the future street network.

Estimated traffic shifts for the 2020 horizon year were developed based on field observations and current and future land use patterns. It was estimated that approximately 9% of the vehicles traveling through Queen Ka‘ahumanu Highway and Māmalahoa Highway would divert to the planned new roads described above that will be parallel to these highways. The resulting traffic volumes at the analyzed intersections, as illustrated in Figure 4-9, represent the 2020 projected cumulative base conditions, i.e., future conditions without the project.

#### **4.3.7.3 Project-Related Traffic**

Development of future traffic projections for the proposed project involved a three-step process. This process included the estimation of project trip generation, trip distribution, and trip assignment.

#### **Project Trip Generation**

Trip generation rates found in *Trip Generation, 7<sup>th</sup> Edition* (Institute of Transportation Engineers, 2003) were used to estimate number of trips to and from the proposed Kula Nei project. The trip generation rates used in this study and the estimated new trips generated by the proposed project are summarized in Table 4-11.

As shown in Table 4-11, the project is estimated to generate about 2,584 daily trips, including approximately 203 trips during the morning peak hour (51 inbound and 152 outbound) and approximately 273 trips during the evening peak hour (172 inbound and 101 outbound).

**Table 4-11: PROJECT TRIP GENERATION ESTIMATES  
KULA NEI RESIDENTIAL PROJECT**

Trip Generation Rates and Estimates							
Land Use	Daily	A.M. Peak Hour			P.M. Peak Hour		
		% In	% Out	Rate	% In	% Out	Rate
<b>Rates</b>							
Single Family Residential - Trips per Dwelling Unit	9.57	25%	75%	0.75	63%	37%	1.01
<b>Estimated Trips</b> 270 DU	2,584	51	152	203	172	101	273

Source: Trip Generation, 7th Edition (Institute of Transportation Engineers, 2003), Land Use Code 210.

**Project Trip Distribution and Trip Assignment**

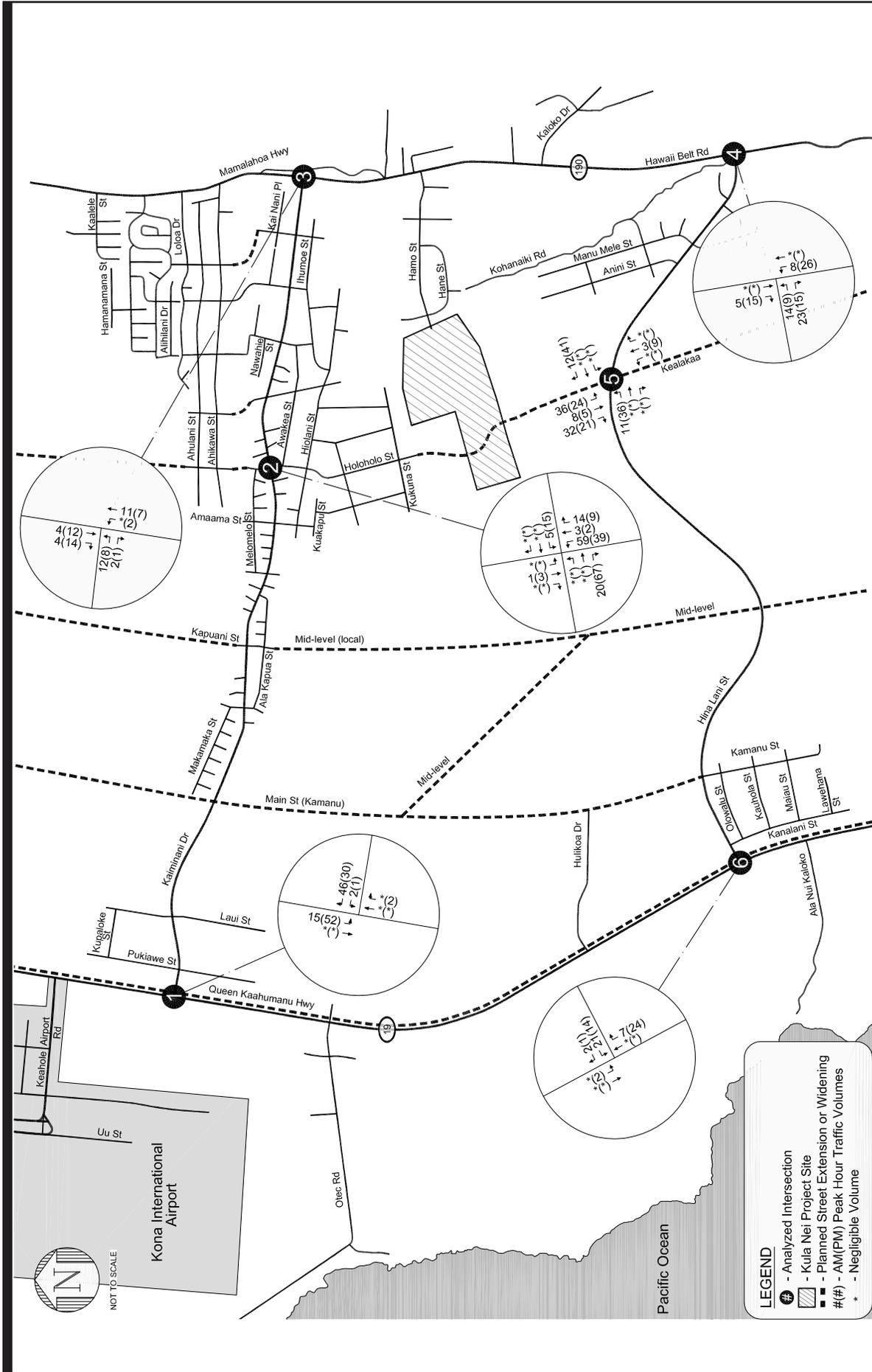
Factors considered in the development of the project trip distribution include a review of historic traffic volume data in the area, observations of existing traffic patterns and discussions with residents, the geographic distribution of employment and commercial activity in the vicinity, and the proposed street extension program described in *Keāhole to Honaunau Regional Circulation Plan*. Based on these factors, the following trip distribution pattern was estimated for the project-generated traffic and is illustrated in Figure 4-10:

- Northwest 40%
- Northeast 20%
- Southwest 20%
- Southeast 20%

The project trip assignment took into account the roadway network planned to be in place by 2020, when the project would be fully built out, including the fact that the planned YO/Stanford Carr project will construct two new streets connecting to Hina Lani Street. Figure 4-11 illustrates the assignment of new project-related traffic at each study intersection.

**4.3.7.4 Future Traffic Conditions With The Project**

The project-generated traffic volumes were added to the Future Without Project traffic projections to develop the Future With Project traffic forecasts for 2020. Figure 4-12 illustrates

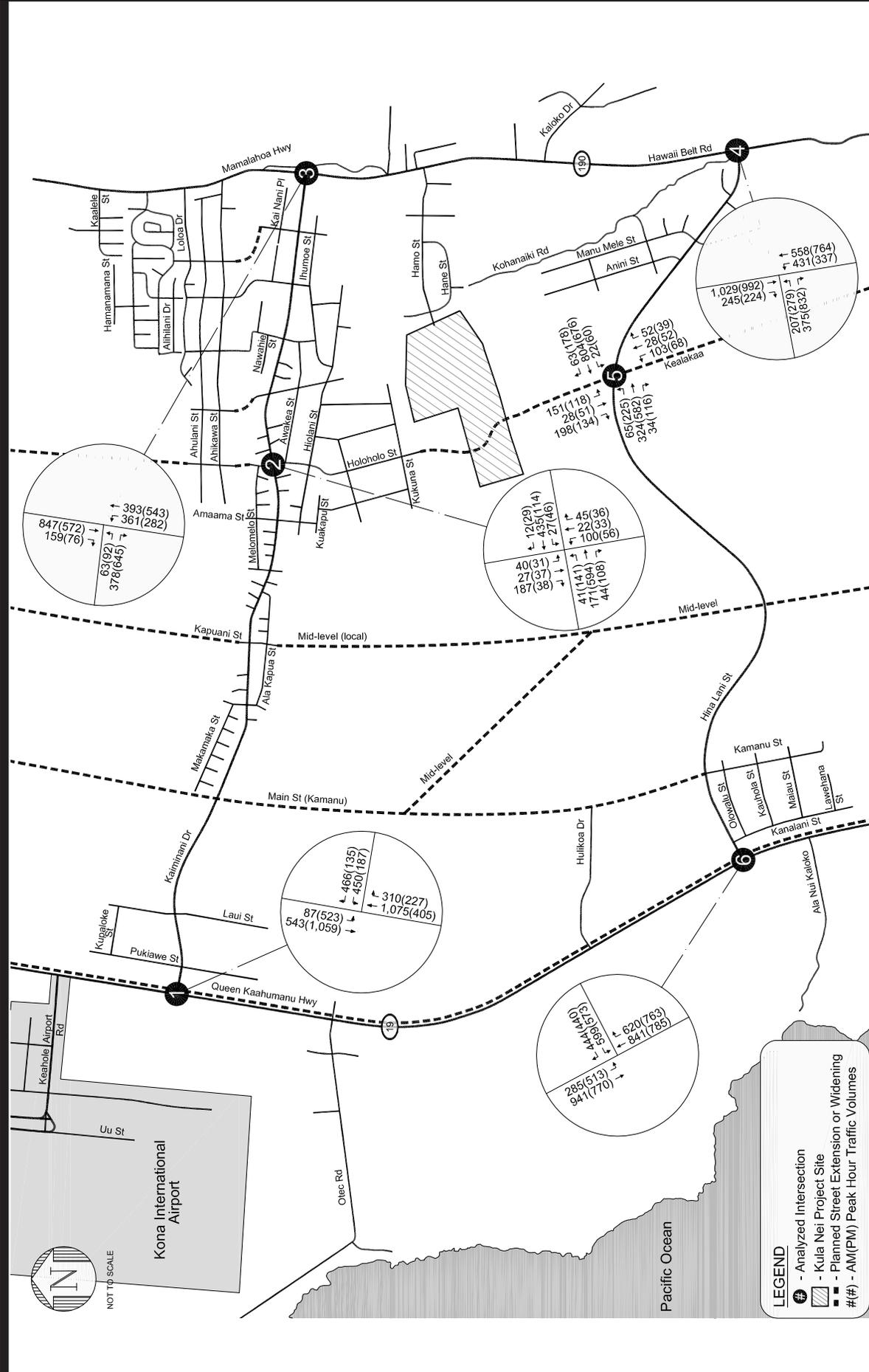


**Figure 4-11**  
**PROJECT ONLY PEAK HOUR TRAFFIC VOLUMES**  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

Source: Fehr & Peers/Kaku Associates, June 2007







**Figure 4-12**  
 CUMULATIVE PLUS PROJECT PEAK HOUR TRAFFIC VOLUMES  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

Source: Fehr & Peers/Kaku Associates, June 2007





the projected cumulative plus project A.M. and P.M. peak hour traffic volumes at each of the six study intersections.

#### **4.3.7.5 Findings and Recommendations**

This section presents an analysis of potential future traffic conditions under projected year 2020 conditions.

The cumulative base traffic volumes projected were analyzed using the methodologies described above to forecast cumulative base peak hour LOS at the study locations.

The first columns in Table 4-12 summarize the results of this analysis. The following intersections are expected to operate at LOS E or F during one or both peak hours in 2020:

- Holoholo Street and Kaiminani Drive
- Māmalahoa Highway and Kaiminani Drive
- Māmalahoa Highway and Hina Lani Street
- Kealakaa Street/Holoholo Street and Hina Lani Street
- Queen Ka‘ahumanu Highway and Hina Lani Street

The remaining study intersection, Queen Ka‘ahumanu Highway/Kaiminani Drive, is expected to continue operating at a desirable level of service (LOS D or better) during both peak hours.

The cumulative plus project peak hour traffic volumes illustrated in Figure 4-12 were analyzed to determine 2020 operating conditions with the addition of project related traffic. The results of the cumulative plus project analysis are presented in Table 4-12. The proposed project would contribute to cumulative impacts (LOS E or F conditions) during one or both peak hours at five study intersections:

- Holoholo Street and Kaiminani Drive
- Māmalahoa Highway and Kaiminani Drive
- Māmalahoa Highway and Hina Lani Street

- Kealakaa Street/Holoholo Street and Hina Lani Street
- Queen Ka‘ahumanu Highway and Hina Lani Street

The impact at the intersection of Holoholo Street and Kaiminani Drive would be both cumulative and project-specific, as the addition of project-generated traffic would cause it to decline below LOS D in the A.M. peak hour.

#### **4.3.7.6 Proposed Mitigation Measures**

The mitigation program for the project developed measures to increase the capacity and/or efficiency of the roadway system at the locations where the addition of project-related traffic would contribute to projected poor operating conditions. The primary emphasis was to identify physical and/or operational improvements that could be implemented within the existing or planned roadway rights-of-way. The suggested intersection improvement measures are illustrated in Appendix A of the Traffic Report. Table 4-12 summarizes the projected LOS in 2020 at the impacted locations with the recommended mitigations measures in place.

#### **Intersections**

The project-related component of future traffic growth at the impacted intersections was calculated based on the proportion of project peak hour traffic relative to the total new peak hour 2020 traffic volumes. Fair-share calculations were made for both the A.M. and P.M. peak hours, and the maximum project contribution was identified to be between approximately 3% and 9%, as shown in Table 4-13. Because the cumulative impact at Holoholo Street and Kaiminani Drive is also identified as a project-specific impact (*i.e.*, the addition of project-generated traffic would cause it to decline below LOS D in the A.M. peak hour), the project’s fair-share contribution to the mitigation measure there is identified as 100%.

The recommended mitigations measures to address the identified traffic impacts, both project-related and cumulative, are described below. Each of the identified project-related impacts would be fully mitigated (*i.e.*, the recommended improvements would result in better V/C ratios and levels of service than are projected under cumulative base conditions). The cumulative

**Table 4-12: INTERSECTION LEVEL OF SERVICE ANALYSIS SUMMARY  
KULA NEI RESIDENTIAL PROJECT  
FUTURE CONDITIONS (2020)**

Intersections	Peak Hour	CUMULATIVE BASE (2020)			CULULATIVE PLUS PROJECT (2020)			LOS D OR BETTER	CUMULATIVE PLUS PROJECT WITH MITIGATION (2020)			LOS D OR BETTER
		V/C	Del/Veh*	LOS	V/C	Del/Veh*	LOS		V/C	Del/Veh*	LOS	
1 Queen Ka'ahumanu Highway (SR 19) & Kaiminani Dr.	A.M.	0.842	28	C	0.855	29	C	YES	No mitigation necessary			YES
	P.M.	0.690	20	B	0.730	21	C	YES				YES
2 Holoholo St. & Kaiminani Dr [a]	A.M.	NC	28	D	NC	**	F	NO	0.545	19	B	YES
	P.M.	NC	40	E	NC	**	F	NO	0.772	17	B	YES
3 Māmalahoa Highway (SR190) & Kaiminani Dr [a]	A.M.	NC	**	F	NC	**	F	NO	0.890	28	C	YES
	P.M.	NC	**	F	NC	**	F	NO	1.120	33	C	YES
4 Māmalahoa Highway (SR 190) & Hina Lani St	A.M.	1.346	**	F	1.412	**	F	NO	0.937	32	C	YES
	P.M.	1.564	**	F	1.660	**	F	NO	1.343	73	E	NO
5 Kealakaa St/Holoholo St & Hina Lani St [a]	A.M.	NC	**	F	NC	**	F	NO	0.959	39	D	YES
	P.M.	NC	**	F	NC	**	F	NO	1.106	40	D	YES
6 Queen Ka'ahumanu Highway (SR 19) & Hina Lani St	A.M.	1.183	68	E	1.204	72	E	NO	0.945	33	C	YES
	P.M.	1.496	**	F	1.525	**	F	NO	1.046	54	D	YES

Note:

\* Delay indicates average stopped delay per vehicle in seconds for signalized intersections. The worst case vehicular delay is reported for stop-controlled intersections.

\*\* Indicates oversaturated conditions. Delay cannot be calculated.

NC = Not calculated

[a] Intersection is controlled by stop signs on the minor approaches.

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**Table 4-13: 2020 PROJECT FAIR SHARE INTERSECTION TRAFFIC CONTRIBUTION**

Int #	Intersection	A.M. Peak Hour					P.M. Peak Hour					Maximum Contribution
		Existing Traffic	2020 with Project Traffic	Project Traffic	Total New Traffic	Project % of New Traffic	Existing Traffic	2020 with Project Traffic	Project Traffic	Total New Traffic	Project % of New Traffic	
2	Holoholo St & Kaiminani Dr	787	1,152	102	365	27.8%	701	1,262	137	561	24.3%	100%*
3	Māmalahoa Highway & Kaiminani Dr	1,526	2,200	32	674	4.8%	1,454	2,210	44	756	5.8%	5.8%
4	Māmalahoa Highway & Hina Lani St	1,854	2,845	49	991	4.9%	2,133	3,427	66	1,294	5.1%	5.1%
5	Holoholo St & Hina Lani St	727	1,872	102	1,145	8.9%	601	2,300	137	1,699	8.0%	8.9%
6	Queen Ka'ahumanu Highway & Hina Lani St	2,418	3,731	30	1,313	2.3%	2,472	3,845	41	1,373	3.0%	3.0%

\* The cumulative impact at this location is also identified as a project specific impact in the A.M. peak hour.

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impact at Māmalahoa Highway and Hina Lani Street in the P.M. peak hour (LOS E), however, cannot be fully mitigated.

- Holoholo Street and Kaiminani Drive – The intersection of Holoholo Street/Kaiminani Drive could be mitigated to LOS D or better by installing a traffic signal with the existing lane configuration. Signal warrant analysis was conducted based on the Peak Hour Warrant presented in *Manual on Uniform Traffic Control Devices* (MUTCD) (National Committee on Uniform Traffic Control Devices, 2003) and is included in Appendix E of the Traffic Study (Appendix M). It indicates that a traffic signal installation at the intersection of Holoholo Street/Kaiminani Drive would be warranted under future plus project conditions. With the installation of the traffic signal, the intersection of Holoholo Street/Kaiminani Drive would operate at LOS B. While the project-related portion of the total forecast traffic growth at this intersection is approximately 28% (in the A.M. peak hour), the project's fair-share contribution to the cost of this improvement is identified as 100% because the impact there is both project-specific (in the A.M. peak hour) and cumulative (in the P.M. peak hour).
- Māmalahoa Highway and Kaiminani Drive – The intersection of Māmalahoa Highway/Kaiminani Drive could be mitigated to LOS D or better by installing a traffic signal. As shown in Appendix E of the Traffic Study (Appendix M), the signal warrant analysis indicates that a traffic signal at the intersection of Māmalahoa Highway/Kaiminani Drive would be warranted under both existing and future plus project conditions. With the installation of the traffic signal, the intersection of Māmalahoa Highway/Kaiminani Drive would operate at LOS C. The project's fair-share contribution to the cost of this mitigation measure is identified as 5.8%.
- Māmalahoa Highway and Hina Lani Street – A mitigation measure was developed that contemplates widening the southbound departure of Māmalahoa Highway to accommodate two travel lanes between this intersection and the existing two-lane segment of Māmalahoa Highway/Hawai'i Belt Road (SR 190) approaching Māmalahoa Highway (SR 180), a distance of approximately 550 feet. The southbound approach would then provide one through lane and one shared through/right-turn lane. If this mitigation measure were determined to be feasible, the intersection of Māmalahoa Highway/Hina Lani Street would

operate at LOS C during the A.M. peak hour and at LOS E during the P.M. peak hour. Due to physical constraints on the *mauka* side of Māmalahoa Highway, additional mitigation measures at this location, such as adding a second northbound lane, do not appear feasible. The project's fair-share contribution to the cost of this mitigation measure is identified as 5.1%.

- Kealakaa Street/Holoholo Street and Hina Lani Street – The intersection of Kealakaa Street/Holoholo Street and Hina Lani Street does not currently exist, so one lane on each approach with stop signs on the minor (north-south direction) approaches was assumed as a default future intersection configuration. With this configuration, the intersection of Kealakaa Street/Holoholo Street and Hina Lani Street is predicted to operate at LOS F during both peak hours. In order to accommodate the projected increase in traffic at this intersection, a traffic signal should be installed and the east- and westbound approaches should be constructed with separate left-turn lanes, resulting in one left-turn lane and one shared through/right-turn lane. As shown in Appendix E of the Traffic Study (Appendix M), the signal warrant analysis indicates that a traffic signal installation at this intersection would be warranted under future plus project conditions. With these improvements, the intersection is projected to operate at LOS D during both peak hours. The project's fair-share contribution to the cost of this mitigation measure is identified as 8.9%.
- Queen Ka‘ahumanu Highway and Hina Lani Street – The intersection of Queen Ka‘ahumanu Highway and Hina Lani Street could be mitigated to acceptable conditions by implementing an overlapping protected northbound right-turn phase and prohibiting U-turns on the westbound approach. With this improvement, the intersection of Queen Ka‘ahumanu/Hina Lani Street would operate at LOS D or better under cumulative plus project conditions. The project's fair-share contribution to the cost of this mitigation measure is identified as 3.0%.

### **Street Segments**

As described in Section 4.3.7.1, 24-hour machine counts were conducted at the four analyzed street segments in September 2006. The daily traffic volumes on the four study street segments under existing conditions are shown in Table 4-14.

**Table 4-14: STREET SEGMENT IMPACT ANALYSIS**

Segment	Location	Peak Hour	Dir.	EXISTING (2006)			CUMULATIVE BASE (2020)			CUMULATIVE PLUS PROJECT (2020)				
				Volumes	V/C	LOS	Volumes	V/C	LOS	Volumes	V/C	LOS		
1. Kaiminani Drive	mauka of Queen Ka'ahumanu Highway	A.M.	EB	170	0.10	A	198	0.12	A	214	0.13	A		
			WB	765	0.45	A	824	0.48	A	872	0.51	A		
		P.M.	EB	627	0.37	A	694	0.41	A	748	0.44	A		
			WB	158	0.09	A	215	0.13	A	246	0.14	A		
2. Hina Lani Street	mauka of Queen Ka'ahumanu Highway	A.M.	EB	217	0.13	A	478	0.28	A	486	0.29	A		
			WB	402	0.24	A	849	0.50	A	872	0.51	A		
		P.M.	EB	380	0.22	A	963	0.58	A	1,009	0.59	A		
			WB	320	0.19	A	652	0.38	A	667	0.39	A		
3. Māmalahoa Highway	north of Kaalele Street	A.M.	NB	201	0.12	A	357	0.21	A	380	0.22	A		
			SB	301	0.18	A	484	0.28	A	492	0.29	A		
		P.M.	NB	267	0.16	A	374	0.22	A	389	0.23	A		
			SB	284	0.17	A	493	0.29	A	519	0.31	A		
4. Māmalahoa Highway	south of Hina Lani Street	A.M.	NB	706	0.42	A	982	0.58	A	990	0.58	A		
			SB	1,021	0.60	A	1,481	0.87	D	1,504	0.88	D		
		P.M.	With Mitigation (Second Southbound Lane)			1,504			0.47			A		
			NB	672	0.40	A	1,075	0.63	B	1,101	0.65	B		
			SB	2,041	1.20	F	2,773	1.63	F	2,788	1.64	F		
			With Mitigation (Second Southbound Lane)			2,788			0.87			D		

Note: Roadway Capacity of 1,700 passenger car per lane is based on *Highway Capacity Manual* (Transportation Research Board, 2000).

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Estimates of future peak hour traffic volumes for the four street segments under the cumulative base conditions (without project) were developed by adjusting the existing peak hour traffic volumes to reflect the ambient growth and related development projects on the street system in the study area. The future peak hour traffic volumes without the proposed project are shown in Table 4-14, as are future peak hour traffic volumes for the four street segments under cumulative plus project conditions.

Table 4-14 summarizes the street segment impact analysis using the methodology defined in the 2000 HCM. As shown, the southbound segment of Māmalahoa Highway located south of Hina Lani Street already experiences heavy traffic (LOS F), particularly during the P.M. peak hour, a condition that is projected to worsen in the future. The other analyzed street segments can adequately accommodate the projected increase in volumes during the peak hours.

The segment of Māmalahoa Highway south of Hina Lani Street can be mitigated to LOS D by widening the roadway to accommodate two southbound travel lanes. This potential mitigation measure, described in the preceding section of this report, was also identified to mitigate projected poor LOS at the intersection of Māmalahoa Highway and Hina Lani Street.

#### **4.3.7.7 Alternatives Analysis**

Three alternative future scenarios were developed and fully evaluated, each of which assumes the full buildout of the proposed Kula Nei residential project as described previously:

- Alternative Future Scenario I: This alternative assumes that the planned Stanford Carr project would not be built by the study horizon year (2020) and that Kealakaa Street/Holoholo Street would not be extended southward from the proposed project site to Hina Lani Street. Thus, traffic would only have access to and from the Kula Nei site ~~to and~~ from the north.
- Alternative Future Scenario II: This alternative assumes that the planned Stanford Carr project would be built by the study horizon year (2020) and that Kealakaa Street/Holoholo Street would be extended southward from the proposed project site to Hina Lani Street (the future intersection 5). However, it assumes that Holoholo Street/Kealakaa Street would not

be extended northward from the proposed project. Thus, traffic would only have access to the Kula Nei site through the planned Stanford Carr project to and from the south.

- HDOT Alternative Future Scenario: This alternative was evaluated at the request of the Hawai'i Department of Transportation (HDOT) and assumes that of the planned expansion of the roadway network in the project vicinity (including Main Street (Kamanu), Mid-Level (Local), University Drive, and Kealakaa Street), only Holoholo Street/Kealakaa Street would be constructed through the planned Stanford Carr project site. This roadway would provide access between the Kula Nei project site and Hina Lani Street. This alternative is considered improbable and unlikely to occur.

### **Alternative Future Scenario I**

Alternative Future Scenario I assumes that the planned Stanford Carr development, located just south of the proposed Kula Nei project, would not be completed by the project buildout year of 2020. Consequently, the Kealakaa Street/Holoholo Street extension between the proposed project and Hina Lani Street would not be constructed. Direct access to the project would be provided only northward to Kaiminani Drive. The previously discussed estimates of areawide traffic growth were assumed in this scenario, with the exception of traffic generated by the planned Stanford Carr project. The other assumptions made to estimate alternative future traffic projections, including the project trip generation, trip distribution and street system improvements, were the same as those described in Section 4.3.7.3.

Forecasts of Alternative Future Scenario I traffic volumes were developed for the following six intersections:

1. Kaiminani Drive and Queen Ka'ahumanu Highway (SR 19) (signalized)
2. Kaiminani Drive and Holoholo Street (stop-controlled)
3. Kaiminani Drive and Māmalahoa Highway (SR 190) (stop-controlled)
4. Hina Lani Street and Māmalahoa Highway (SR 190) (signalized)
5. (Study Intersection 5, Kealakaa Street/Holoholo Street and Hina Lani Street, would not exist in this scenario.)
6. Hina Lani Street and Queen Ka'ahumanu Highway (SR 19) (signalized)

The projected peak hour traffic volumes for Alternative Future Scenario I are illustrated in Figures 4-13, 4-14 and 4-15 for the cumulative base, project-related traffic, and cumulative plus project projections, respectively.

The first columns in Table 4-15 summarize the results of cumulative base traffic conditions for Alternative Future Scenario I. Three of five analyzed intersections are projected to operate at LOS E or F during one or both peak hours in 2020 under Alternative Future Scenario I conditions.

The cumulative plus project peak hour traffic volumes were analyzed to determine Alternative Future Scenario I operating conditions in 2020 with the addition of project-generated traffic. The results of the cumulative plus project analysis are also presented in Table 4-15. The proposed project would contribute to cumulative impacts (LOS E or F conditions) during one or both peak hours at four analyzed intersections. The impact at the intersection of Holoholo Street and Kaiminani Drive would be both cumulative and project-specific, as the addition of project-generated traffic would cause it to decline below LOS D in both the A.M. and the P.M. peak hours.

The proposed mitigation measures described in Section 4.3.7.6 were assessed for Alternative Future Scenario I and the results are presented in Table 4-15. All of the study intersections would operate at LOS D or better with mitigation, except for the intersection of Māmalahoa Highway and Hina Lani Street, which would operate at LOS F in the P.M. peak hour. As discussed previously, due to physical constraints at that intersection, it does not appear feasible to provide further mitigation (such as adding a second northbound lane).

For Alternative Future Scenario I, the project-related component of future traffic growth at the impacted intersections was calculated based on the proportion of project peak hour traffic relative to the total new peak hour 2020 traffic volumes. Fair-share calculations were made for both the A.M. and P.M. peak hours, and the maximum project contribution was identified to be between approximately 4% and 19%, as shown in Table 4-16. Because the cumulative impact at Holoholo Street and Kaiminani Drive is also identified as a project-specific impact (*i.e.*, the addition of project-generated traffic would cause it to decline below LOS D in both analyzed

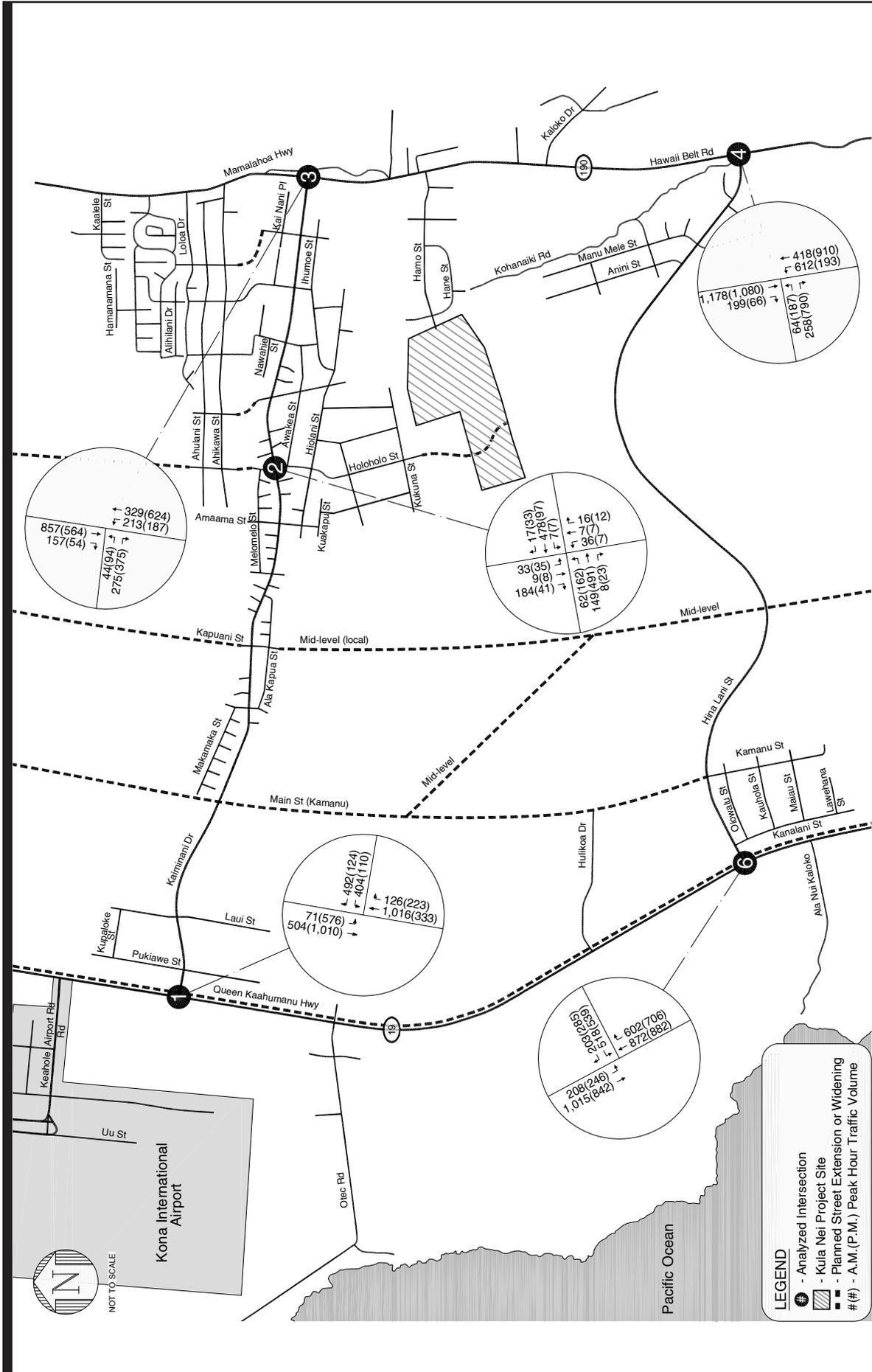
peak hours), the project's fair-share contribution to the mitigation measure there is identified as 100%.

Peak hour traffic volumes for Alternative Future Scenario I for the four street segments are shown in Table 4-17. While three of four street segments are expected to operate at desirable levels of service during both peak hours, the southbound segment of Māmalahoa Highway south of Hina Lani Street is projected to operate at LOS E and F during A.M. and P.M. peak hours, respectively.

The segment of Māmalahoa Highway south of Hina Lani Street can be mitigated to LOS B and D during the A.M. and P.M. peak hours, respectively, by widening the roadway to accommodate two southbound travel lanes.

### **Alternative Future Scenario II**

Alternative Future Scenario II assumes that the planned Stanford Carr development, located just south of the proposed Kula Nei project, would be completed by the project buildout year of 2020 and that the Kealakaa Street/Holoholo Street extension between the Kula Nei project site and Hina Lani Street would be constructed. This scenario assumes, however, that the segment of Holoholo Street immediately north of the project site would not be present. Thus, no direct connection would be available in the project vicinity between Hina Lani Street and Kaiminani Drive and all access from the project site to the surrounding street system would be to and from the south using Hina Lani Street. The assumptions made to estimate areawide traffic growth, alternative future traffic projections, including the project trip generation, trip distribution and street system improvements, were similar to those described in Section 4.3.7.3. The projected peak hour traffic volumes at the six study intersections for Alternative Future Scenario II are

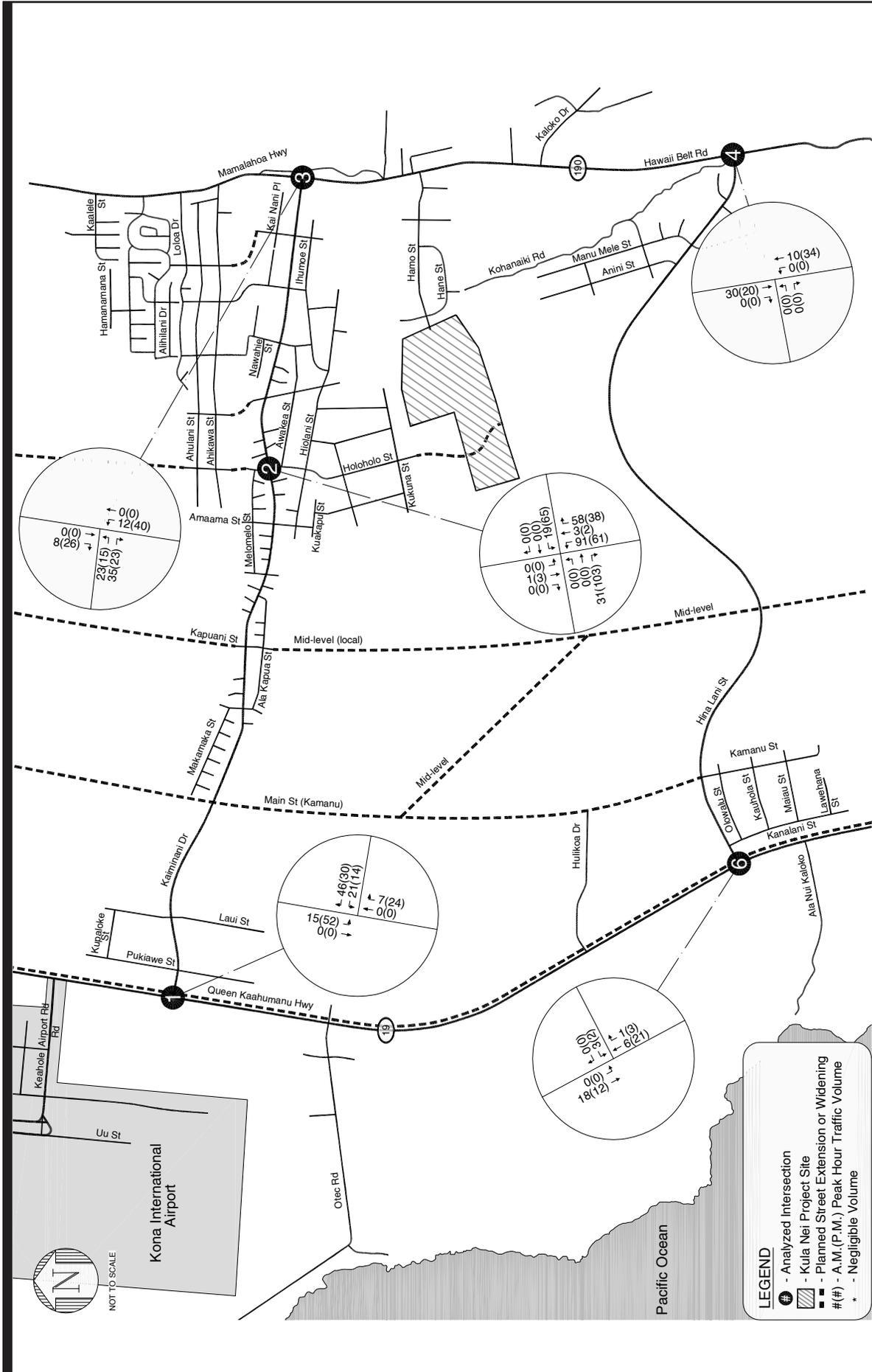


**Figure 4-13**  
**CUMULATIVE BASE PEAK HOUR TRAFFIC VOLUMES—ALTERNATIVE FUTURE SCENARIO I**  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

Source: Fehr & Peers/Kaku Associates, June 2007





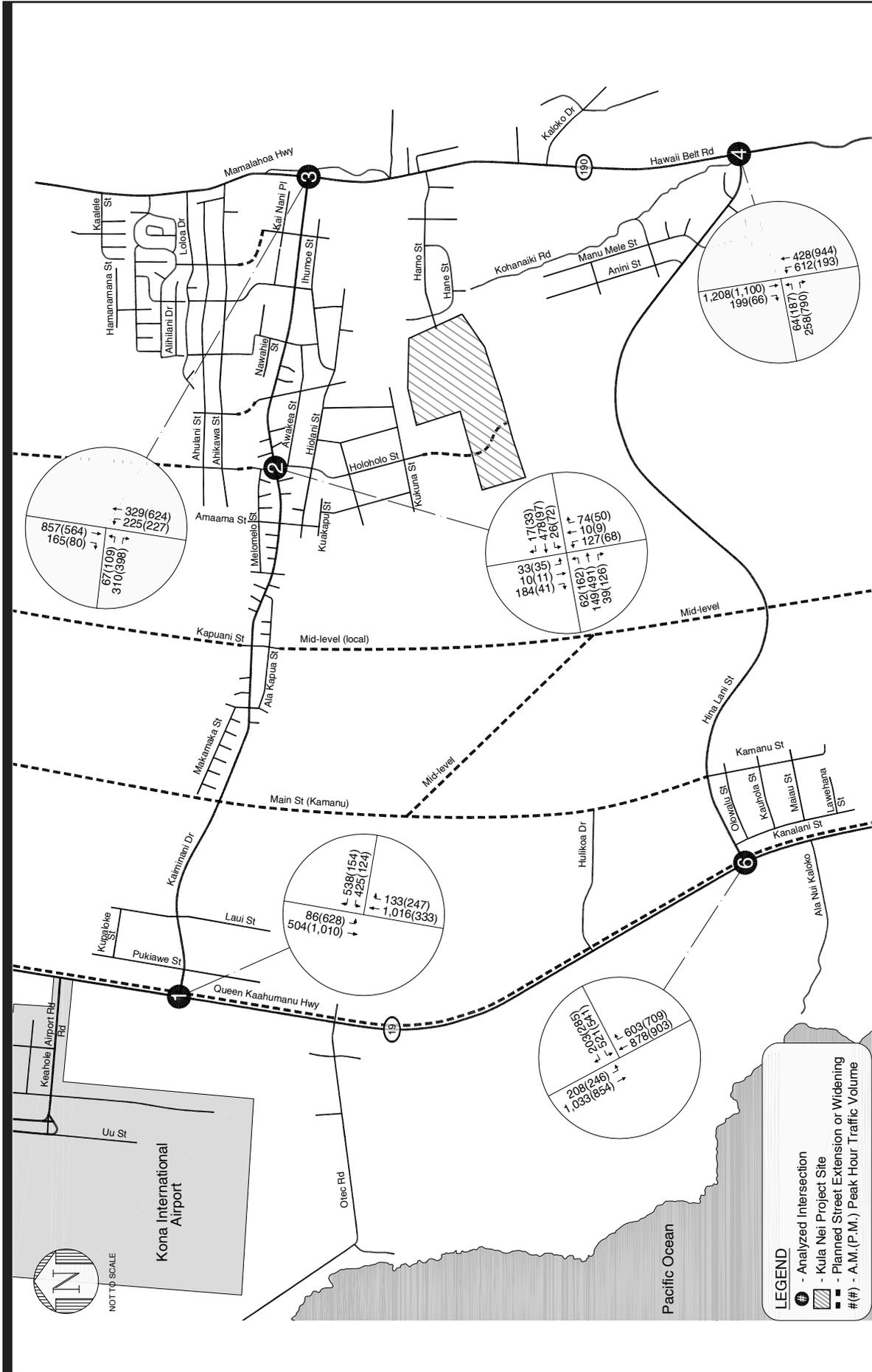


**Figure 4-14**  
 PROJECT ONLY PEAK HOUR TRAFFIC VOLUMES—ALTERNATIVE FUTURE SCENARIO I  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

Source: Fehr & Peers/Kaku Associates, June 2007







**Figure 4-15**  
 CUMULATIVE PLUS PROJECT PEAK HOUR TRAFFIC VOLUMES—ALTERNATIVE FUTURE SCENARIO I  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

Source: Fehr & Peers/Kaku Associates, June 2007





**Table 4-15: INTERSECTION LEVEL OF SERVICE ANALYSIS SUMMARY  
ALTERNATIVE FUTURE SCENARIO 1 (2020)**

Intersections	Peak Hour	CUMULATIVE BASE (2020)			CUMULATIVE PLUS PROJECT (2020)			CUMULATIVE PLUS PROJECT WITH MITIGATION (2020)			LOS D OR BETTER
		V/C	Del/Veh*	LOS	V/C	Del/Veh*	LOS	V/C	Del/Veh*	LOS	
1. Queen Ka'ahumanu Highway (SR 19) & Kaiminani Dr	A.M.	0.818	27	C	0.866	30	C	No mitigation necessary		YES	
	P.M.	0.696	17	B	0.779	20	B			YES	
2. Hoholo St & Kaiminani Dr [a]	A.M.	NC	29	D	NC	**	F	0.612	20	B	YES
	P.M.	NC	21	C	NC	**	F	0.745	16	B	YES
3. Māmalahoa Highway (SR 190) & Kaiminani Dr [a]	A.M.	NC	**	F	NC	**	F	0.841	21	C	YES
	P.M.	NC	**	F	NC	**	F	0.710	18	B	YES
4. Māmalahoa Highway (SR 190) & Hina Lani St	A.M.	1.404	**	F	1.456	**	F	1.023	50	D	YES
	P.M.	1.474	**	F	1.487	**	F	1.289	**	F	NO
6. Queen Ka'ahumanu Highway (SR 19) & Hina Lani St	A.M.	1.087	48	D	1.091	49	D	0.846	25	C	YES
	P.M.	1.198	68	E	1.202	69	E	0.897	28	C	YES

Note:

\* Delay indicates average stopped delay per vehicle in seconds for signalized intersections. The worst case vehicular delay is reported for stop-controlled intersections.

\*\* Indicates oversaturated conditions. Delay cannot be calculated.

NC = Not Calculated

[a] Intersection is controlled by stop signs on the minor approaches.

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**Table 4-16: PROJECT FAIR SHARE INTERSECTION TRAFFIC CONTRIBUTION  
ALTERNATIVE FUTURE SCENARIO 1 (2020)**

Int #	Intersection	A.M. Peak Hour					P.M. Peak Hour					Maximum Contribution
		Existing Traffic	2020 with Project Traffic	Project Traffic	Total New Traffic	Project % of New Traffic	Existing Traffic	2020 with Project Traffic	Project Traffic	Total New Traffic	Project % of New Traffic	
2	Holoholo St & Kaiminani Dr	787	1,209	203	422	48.1%	701	1,195	272	494	55.1%	100%*
3	Māmalahoa Highway & Kaiminani Dr	1,526	1,953	78	427	18.3%	1,454	2,002	104	548	19.0%	19.0%
4	Māmalahoa Highway & Hina Lani St	1,854	2,769	40	915	4.4%	2,133	3,280	54	1,147	4.7%	4.7%
6	Queen Ka'ahumanu Highway & Hina Lani St	2,418	3,446	28	1,028	2.7%	2,472	3,538	38	1,066	3.6%	3.6%

\* The cumulative impact at this location is also identified as a project specific impact in both A.M. and P.M. peak hours.

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**Table 4-17: STREET SEGMENT IMPACT ANALYSIS  
ALTERNATIVE FUTURE SCENARIO 1 (2020)**

Segment	Location	Peak Hour	Dir.	EXISTING (2006)			CUMULATIVE BASE (2020)			CUMULATIVE PLUS PROJECT (2020)				
				Volumes	V/C	LOS	Volumes	V/C	LOS	Volumes	V/C	LOS		
1. Kaiminani Drive	mauka of Queen Ka'ahumanu Highway	A.M.	EB	170	0.10	A	197	0.12	A	219	0.13	A		
			WB	765	0.45	A	896	0.53	A	963	0.57	A		
		P.M.	EB	627	0.37	A	799	0.47	A	875	0.51	A		
			WB	158	0.09	A	234	0.14	A	278	0.16	A		
2. Hina Lani Street	mauka of Queen Ka'ahumanu Highway	A.M.	EB	217	0.13	A	369	0.22	A	370	0.22	A		
			WB	402	0.24	A	511	0.30	A	514	0.30	A		
		P.M.	EB	380	0.22	A	646	0.38	A	646	0.38	A		
			WB	320	0.19	A	432	0.25	A	434	0.26	A		
3. Māmalahoa Highway	north of Kaalele Street	A.M.	NB	201	0.12	A	278	0.16	A	301	0.18	A		
			SB	301	0.18	A	397	0.23	A	405	0.24	A		
		P.M.	NB	267	0.16	A	390	0.23	A	405	0.24	A		
			SB	284	0.17	A	438	0.26	A	464	0.27	A		
4. Māmalahoa Highway	south of Hina Lani Street	A.M.	NB	706	0.42	A	1,030	0.61	B	1,040	0.61	B		
			SB	1,021	0.60	A	1,557	0.92	E	1,586	0.93	E		
		P.M.	With Mitigation (Second Southbound Lane)			1,586			1,586			0.50		
			NB	672	0.40	A	1,103	0.65	B	1,137	0.67	B		
			SB	2,041	1.20	F	2,766	1.63	F	2,785	1.64	F		
			With Mitigation (Second Southbound Lane)			2,785			2,785			0.87		

Note: Roadway Capacity of 1,700 passenger car per lane is based on *Highway Capacity Manual* (Transportation Research Board, 2000).

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illustrated in Figures 4-16, 4-17 and 4-18 for the cumulative base, project-only traffic, and cumulative plus project conditions, respectively.

The first columns in Table 4-18 summarize the results of cumulative base traffic conditions for the alternative future. Four of six analyzed intersections are projected to operate at LOS E or F during one or both peak hours in 2020 under this scenario.

The cumulative plus project peak hour traffic volumes were analyzed to determine the projected operating conditions in 2020 with the addition of project-generated traffic. The results of this analysis are presented in Table 4-18. The proposed project would contribute to cumulative impacts (LOS E or F conditions) during one or both peak hours at four analyzed intersections.

The proposed mitigation measures described in Section 4.3.7.6 were assessed for Alternative Future Scenario II. The improvements that were identified for three study intersections (Kaiminani Drive & Māmalahoa Highway, Hina Lani Street & Māmalahoa Highway, and Hina Lani Street & Kealakaa Street/Holoholo Street) were found to effectively mitigate the identified project and cumulative impacts under this scenario and the results are presented in Table 4-18. The improvements necessary to achieve LOS D or better at the intersection of Queen Ka‘ahumanu Highway and Hina Lani Street under this scenario are described below.

- Queen Ka‘ahumanu Highway and Hina Lani Street – Implement an overlapping protected northbound right-turn phase and prohibit U-turns on the westbound approach, and widen the southbound approach to provide a second left-turn lane as well as the corresponding departure lanes.

With mitigation, all of the study intersections would operate at LOS D or better, except for the intersection of Māmalahoa Highway and Hina Lani Street in the P.M. peak hour, which would operate at LOS F. As discussed previously, due to physical constraints at that intersection, it does not appear feasible to provide further mitigation (such as adding a second northbound lane).

For Alternative Future Scenario II, the project-related component of future traffic growth at the impacted intersections was calculated based on the proportion of project peak hour traffic relative to the total new peak hour 2020 traffic volumes. Fair-share calculations were made for

both the A.M. and P.M. peak hours, and the maximum project contribution was estimated to be between 8% and 12%, as shown in Table 4-19.

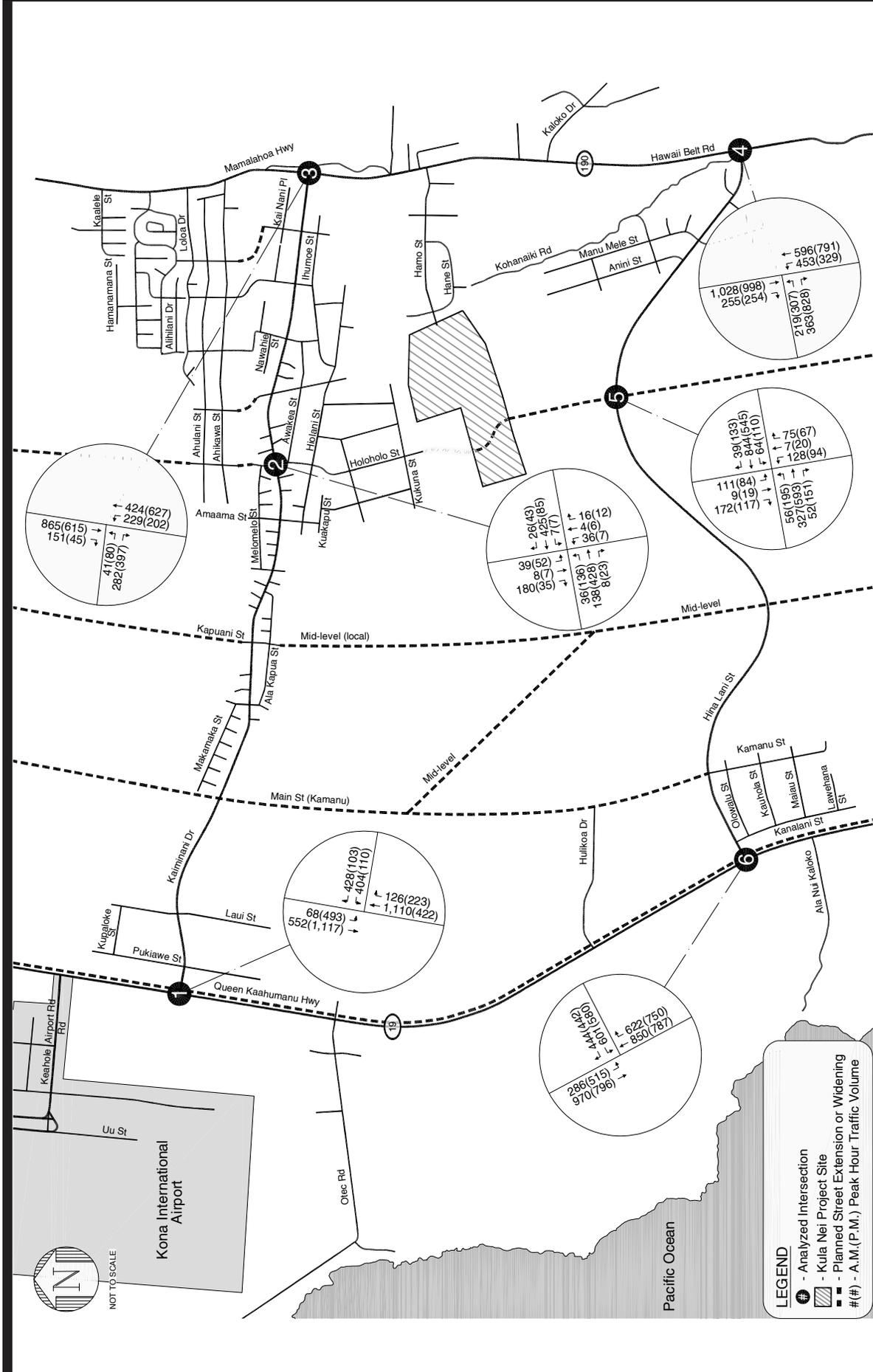
Peak hour traffic volumes for Alternative Future Scenario II for the four street segments are levels of service during both peak hours, the southbound segment of Māmalahoa Highway south of Hina Lani Street is projected to operate at LOS F during the P.M. peak hour (shown in Table 4-20). While three of the four street segments are expected to operate at desirable levels, the segment of Māmalahoa Highway south of Hina Lani Street can be mitigated to LOS D in the P.M. peak hour by widening the roadway to accommodate two southbound travel lanes.

### **HDOT Alternative Future Scenario**

The traffic impact analysis of the alternative future scenario requested by HDOT is discussed in this section. It is assumed that the expansion of the regional street system planned by County of Hawai‘i would not be implemented by the study horizon year (2020) but that the planned Stanford Carr project would be completed. Thus, Holoholo Street/Kealakaa Street would be constructed between the Kula Nei project site and Hina Lani Street. This scenario assumes that the following improvements would be completed by Year 2020:

- Queen Ka‘ahumanu Highway – It is currently being widened from two to four lanes (two in each direction).
- Intersection of Māmalahoa Highway and Kaiminani Drive – A new right-turn lane on Kaiminani Drive to Māmalahoa Highway would be installed by June 2007.

Kealakaa Street/Holoholo Street Extension – The proposed street would be extended from the project site to Hina Lani Street.

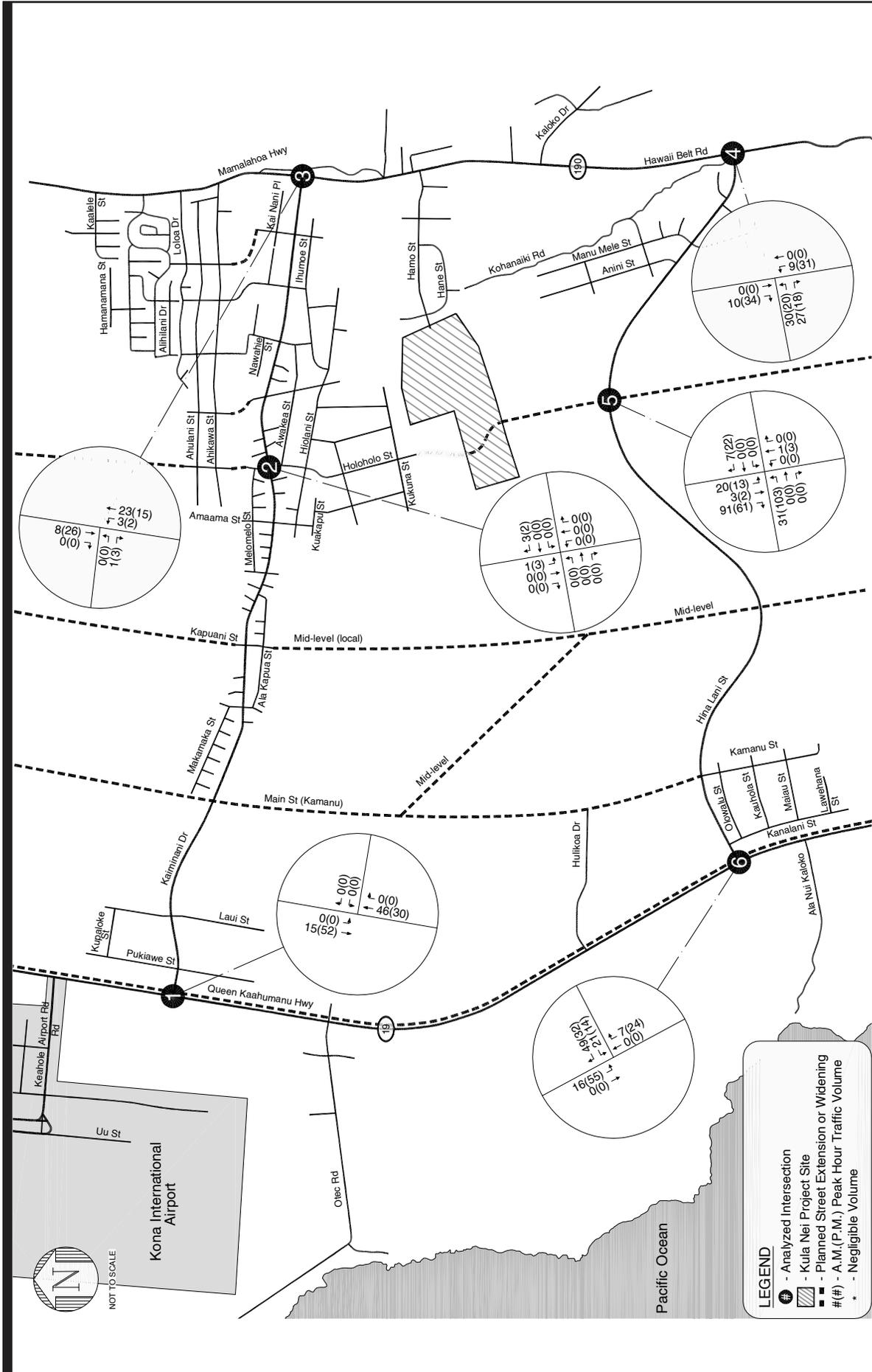


**Figure 4-16**  
**CUMULATIVE BASE PEAK HOUR TRAFFIC VOLUMES—ALTERNATIVE FUTURE SCENARIO II**  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

Source: Fehr & Peers/Kaku Associates, June 2007







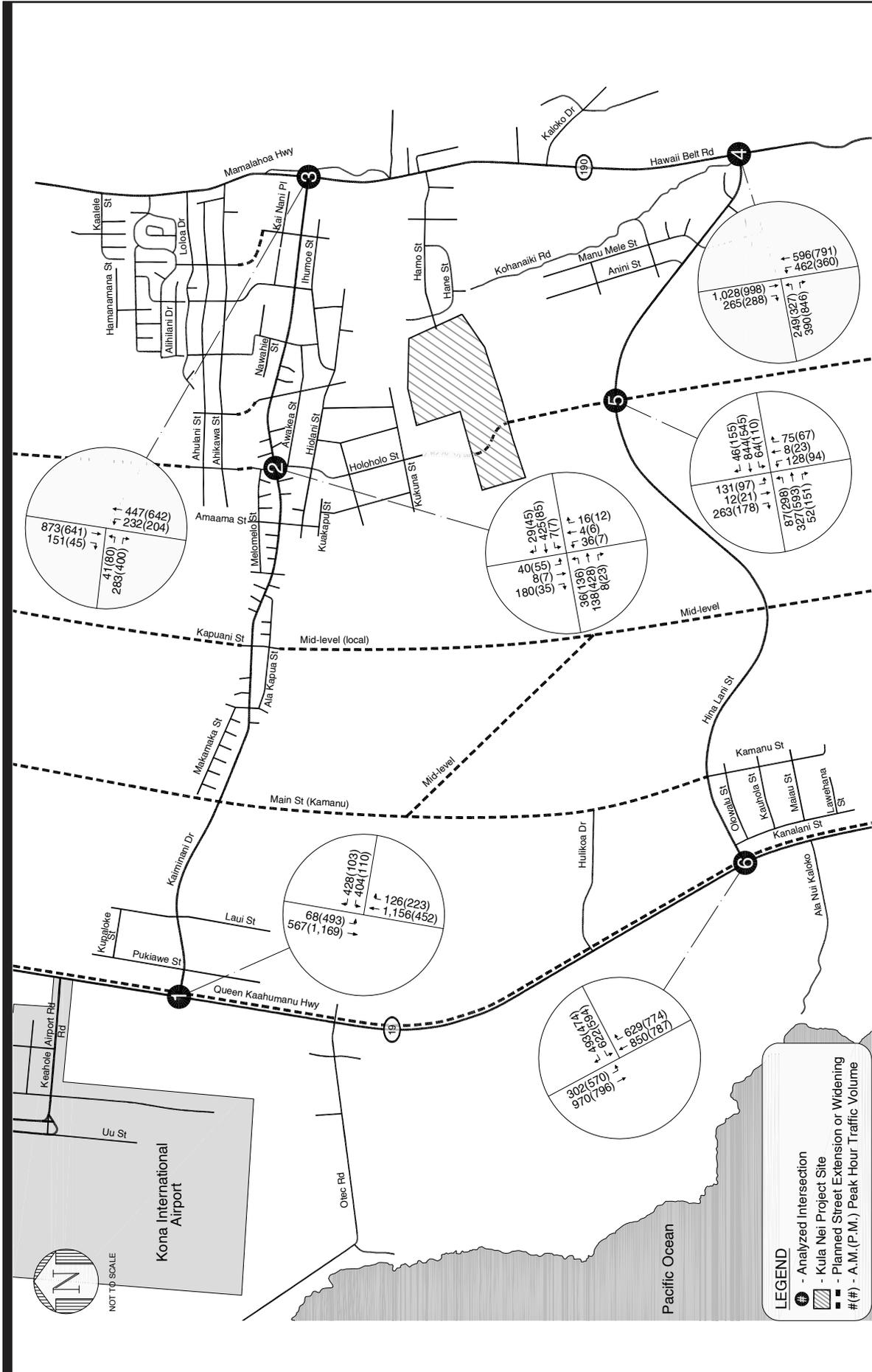
**Figure 4-17**  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

**PROJECT ONLY PEAK HOUR TRAFFIC VOLUMES—ALTERNATIVE FUTURE SCENARIO II**

Source: Fehr & Peers/Kaku Associates, June 2007







**Figure 4-18**  
**CUMULATIVE PLUS PROJECT PEAK HOUR TRAFFIC VOLUMES—ALTERNATIVE FUTURE SCENARIO II**  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

Source: Fehr & Peers/Kaku Associates, June 2007





**Table 4-18: INTERSECTION LEVEL OF SERVICE ANALYSIS SUMMARY  
ALTERNATIVE FUTURE SCENARIO II (2020)**

Intersections	Peak Hour	CUMULATIVE BASE (2020)			CUMULATIVE PLUS PROJECT (2020)			CUMULATIVE PLUS PROJECT WITH MITIGATION (2020)			LOS D OR BETTER
		V/C	Del/Veh*	LOS	V/C	Del/Veh*	LOS	V/C	Del/Veh*	LOS	
1. Queen Ka'ahumanu Highway (SR 19) & Kaiminani Dr	A.M.	0.864	22	C	0.882	23	C	0.882	23	C	YES
	P.M.	0.676	13.	B	0.676	13	B	0.676	13	B	YES
2. Holoholo St & Kaiminani Dr [a]	A.M.	NC	22.	C	NC	22	C	NC	22	C	YES
	P.M.	NC	21	C	NC	21	C	NC	21	C	YES
3. Māmalahoa Highway (SR 190) & Kaiminani Dr [a]	A.M.	NC	**	F	NC	**	F	NC	50	D	YES
	P.M.	NC	**	F	NC	**	F	NC	39	D	YES
4. Māmalahoa Highway (SR 190) & Hina Lani St	A.M.	1.611	**	F	1.706	**	F	1.706	42	D	YES
	P.M.	1.789	**	F	1.925	**	F	1.925	80	F	NO
5. Kealakaa St/Holoholo St & Hina Lani St [a]	A.M.	NC	**	F	NC	**	F	NC	49	D	YES
	P.M.	NC	**	F	NC	**	F	NC	36	D	YES
6. Queen Ka'ahumanu Highway (SR 19) & Hina Lani St	A.M.	1.181	74	E	1.209	**	F	1.209	24	C	YES
	P.M.	1.454	**	F	1.656	**	F	1.656	29	C	YES

Note:

\* Delay indicates average stopped delay per vehicle in seconds for signalized intersections. The worst case vehicular delay is reported for stop-controlled intersections.

\*\* Indicates oversaturated conditions. Delay cannot be calculated.

NC = Not Calculated

[a] Intersection is controlled by stop signs on the minor approaches.

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**Table 4-19: PROJECT FAIR SHARE INTERSECTION TRAFFIC CONTRIBUTION  
ALTERNATIVE FUTURE SCENARIO II (2020)**

Int #	Intersection	A.M. Peak Hour					P.M. Peak Hour					Maximum Contribution
		Existing Traffic	2020 with Project Traffic	Project Traffic	Total New Traffic	Project % of New Traffic	Existing Traffic	2020 with Project Traffic	Project Traffic	Total New Traffic	Project % of New Traffic	
3	Māmalahoa Highway & Kaiminani Dr	1,526	2,027	35	501	7.0%	1,454	2,012	46	558	8.2%	8.2%
4	Māmalahoa Highway & Hina Lani St	1,854	2,990	76	1,136	6.7%	2,133	3,610	103	1,477	7.0%	7.0%
5	Holoholo St & Hina Lani St	727	2,037	153	1,310	11.7%	601	2,332	204	1,731	11.8%	11.8%
6	Queen Ka'ahumanu Highway & Hina Lani St	2,418	3,866	93	1,448	6.4%	2,472	3,995	125	1,523	8.2%	8.2%

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**Table 4-20: STREET SEGMENT IMPACT ANALYSIS  
ALTERNATIVE FUTURE SCENARIO II (2020)**

Segment	Location	Peak Hour	Dir.	EXISTING (2006)			CUMULATIVE BASE (2020)			CUMULATIVE PLUS PROJECT (2020)		
				Volumes	V/C	LOS	Volumes	V/C	LOS	Volumes	V/C	LOS
1. Kaiminani Drive	mauka of Queen Ka'ahumanu Highway	A.M.	EB	170	0.10	A	194	0.11	A	194	0.11	A
			WB	765	0.45	A	832	0.49	A	832	0.49	A
		P.M.	EB	627	0.37	A	716	0.42	A	716	0.42	A
			WB	158	0.09	A	213	0.13	A	213	0.13	A
2. Hina Lani Street	mauka of Queen Ka'ahumanu Highway	A.M.	EB	217	0.13	A	482	0.28	A	505	0.30	A
			WB	402	0.24	A	858	0.50	A	928	0.55	A
		P.M.	EB	380	0.22	A	1,035	0.61	B	1,114	0.66	B
			WB	320	0.19	A	660	0.39	A	706	0.42	A
3. Māmalahoa Highway	north of Kaaale Street	A.M.	NB	201	0.12	A	376	0.22	A	399	0.23	A
			SB	301	0.18	A	426	0.25	A	434	0.26	A
		P.M.	NB	267	0.16	A	426	0.25	A	441	0.26	A
			SB	284	0.17	A	509	0.30	A	535	0.31	A

**Table 4-20** (continued)

Segment	Location	Peak Hour	Dir.	EXISTING (2006)			CUMULATIVE BASE (2020)			CUMULATIVE PLUS PROJECT (2020)		
				Volumes	V/C	LOS	Volumes	V/C	LOS	Volumes	V/C	LOS
4. Māmalahoa Highway	south of Hina Lani Street	A.M.	NB	706	0.42	A	1,049	0.62	B	1,058	0.62	B
			SB	1,021	0.60	A	1,482	0.87	D	1,509	0.89	D
			SB	With Mitigation (Second Southbound Lane)			1,509	0.47	A			
		P.M.	NB	672	0.40	A	1,120	0.66	B	1,151	0.68	B
			SB	2,041	1.20	F	2,702	1.59	F	2,720	1.60	F
			SB	With Mitigation (Second Southbound Lane)			2,720	0.85	D			

Note: Roadway Capacity of 1,700 passenger car per lane is based on *Highway Capacity Manual* (Transportation Research Board, 2000).

- Stanford Carr Development – The planned project, as described in Chapter III, would be constructed immediately south of the proposed Kula Nei project and will be considered part of the future traffic conditions (cumulative base conditions).

The other assumptions made to estimate future traffic conditions, including the project trip generation, trip distribution and areawide traffic growth, were the same as those described in Section 4.3.7.3.

Traffic forecasts were developed for the following six intersections:

1. Kaiminani Drive and Queen Ka‘ahumanu Highway (SR 19) (signalized)
2. Kaiminani Drive and Holoholo Street (stop-controlled)
3. Kaiminani Drive and Māmalahoa Highway (SR 190) (stop-controlled)
4. Hina Lani Street and Māmalahoa Highway (SR 190) (signalized)
5. Hina Lani Street and Kealakaa Street/Holoholo Street (future intersection)
6. Hina Lani Street and Queen Ka‘ahumanu Highway (SR 19) (signalized)

The resulting peak hour traffic volumes are illustrated in Figures 4-19, 4-20, and 4-21 for the cumulative base, project-related traffic, and cumulative plus project projections, respectively.

Table 4-21 summarizes the projected LOS in 2020 at each analyzed location without and with the recommended mitigations measures described below:

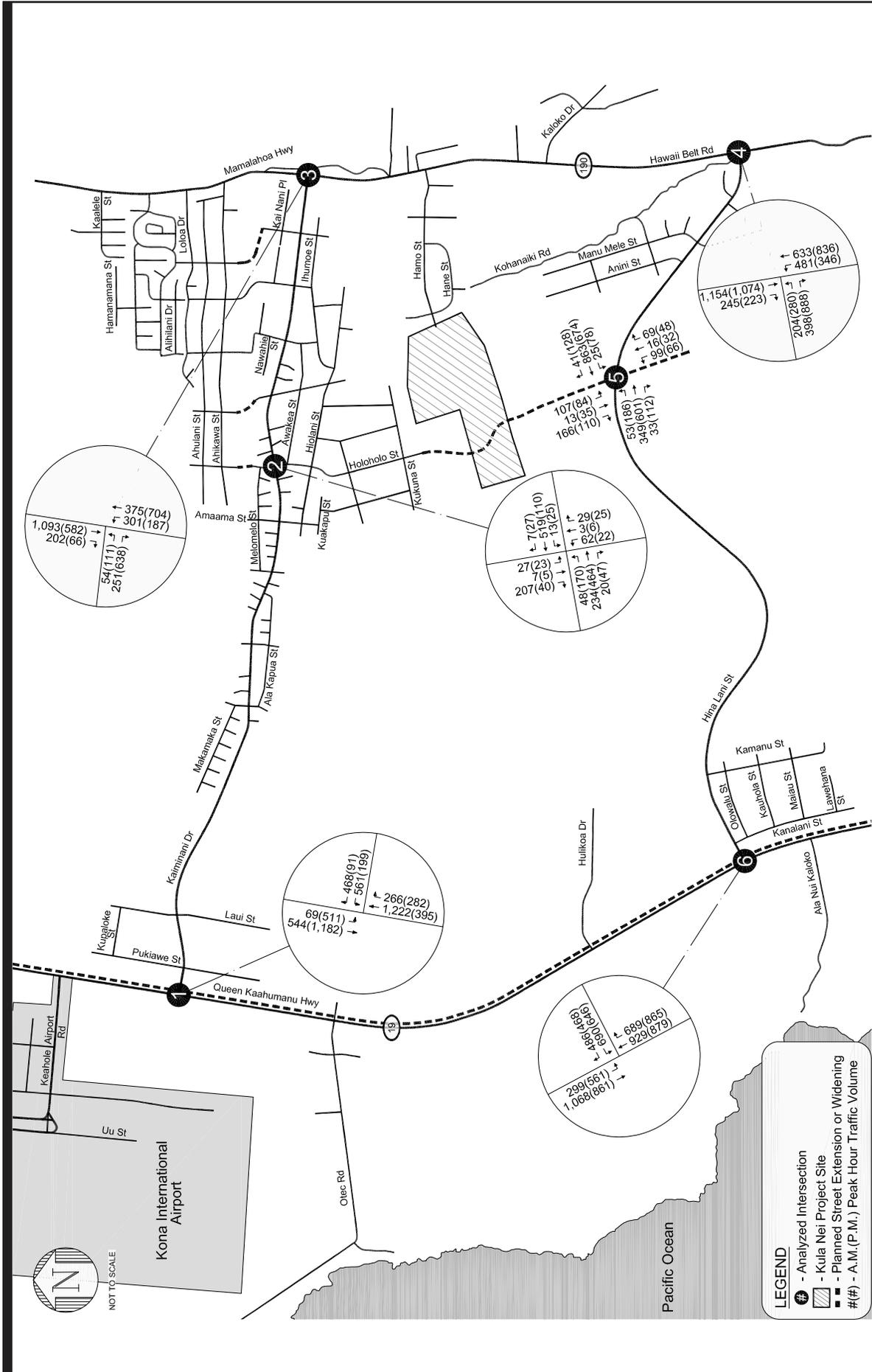
- Holoholo Street and Kaiminani Drive – Installation of a traffic signal.
- Māmalahoa Highway and Kaiminani Drive – Installation of a traffic signal.
- Māmalahoa Highway and Hina Lani Street – Widen the southbound departure from the intersection to provide an additional southbound through lane, resulting in one through/right and one through lane.
- Kealakaa Street/Holoholo Street and Hina Lani Street – Install a traffic signal and add separate left-turn lanes on the eastbound and westbound approaches.

- Queen Ka‘ahumanu Highway and Hina Lani Street – Implement an overlapping protected northbound right-turn phase and prohibit U-turns on the westbound approach, and add a second southbound left-turn lane as well as the corresponding departure lanes.

Implementation of these measures would fully mitigate the identified project-related impacts (i.e., the recommended improvements would result in better v/c ratios and levels of service than are projected under cumulative base conditions). The cumulative impact at Māmalahoa Highway and Hina Lani Street in the P.M. peak hour (LOS F), however, cannot be fully mitigated.

Peak hour traffic volumes for the HDOT Alternative Future Scenario for the four street segments are shown in Table 4-22. While three of four street segments are expected to operate at desirable levels of service during both peak hours, the southbound segment of Māmalahoa Highway south of Hina Lani Street is projected to operate at LOS E and F during A.M. and P.M. peak hours, respectively. The segment of Māmalahoa Highway south of Hina Lani Street can be mitigated to LOS D or better by widening the roadway to accommodate two southbound travel lanes.

For the HDOT Alternative Future Scenario, the project-related component of future traffic growth at the impacted intersections was calculated based on the proportion of project peak hour traffic relative to the total new peak hour 2020 traffic volumes. Fair-share calculations were made for both the A.M. and P.M. peak hours, and the maximum project contribution was identified to be between approximately 3% and 6%, as shown in Table 4-23. Because the cumulative impact at Holoholo Street and Kaiminani Drive is also identified as a project-specific impact, the project’s fair-share contribution to the mitigation measure identified there is identified as 100%.

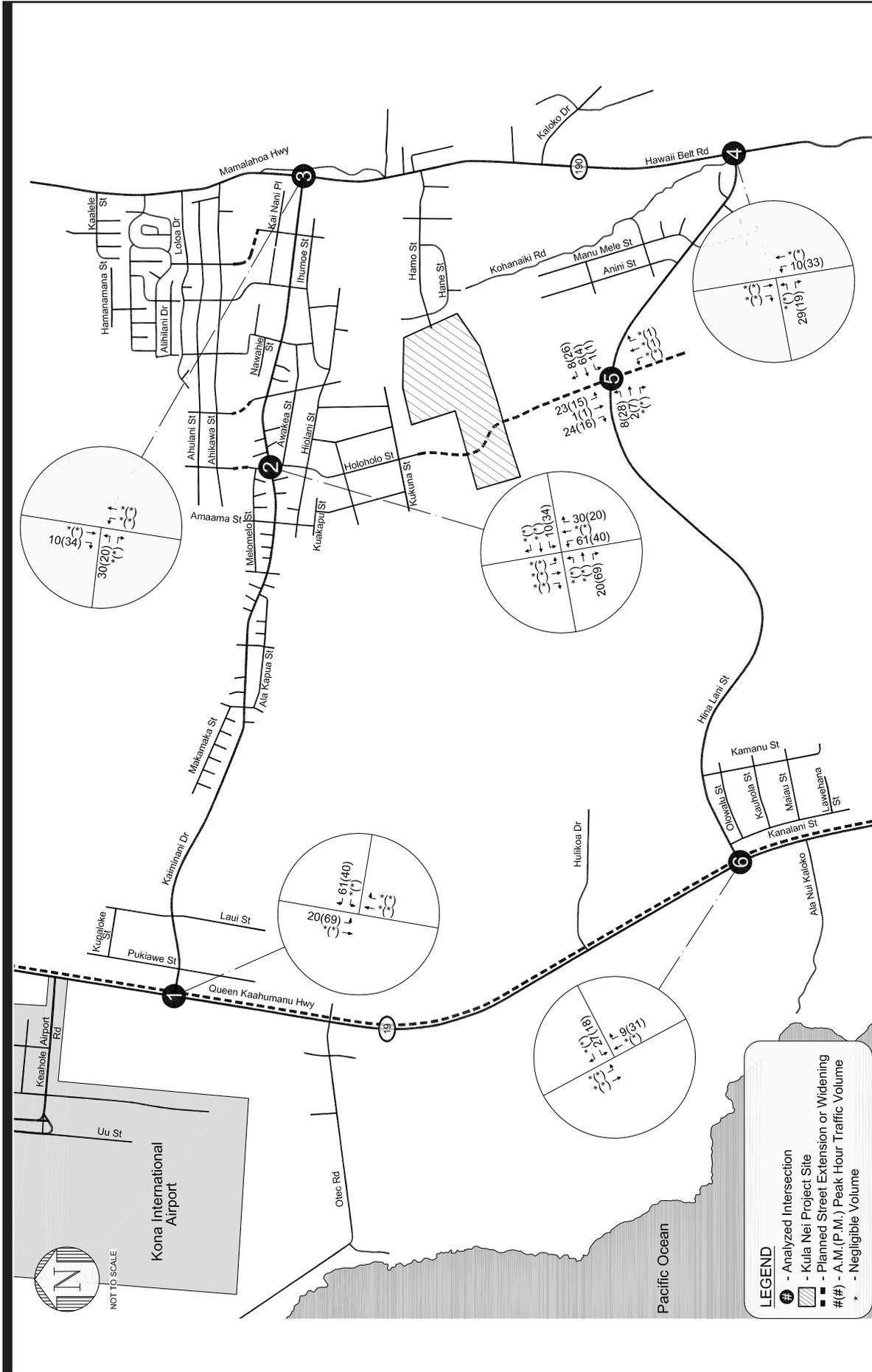


**Figure 4-19**  
 CUMULATIVE BASE PEAK HOUR TRAFFIC VOLUMES—HDOT ALTERNATIVE FUTURE SCENARIO  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

Source: Fehr & Peers/Kaku Associates, June 2007







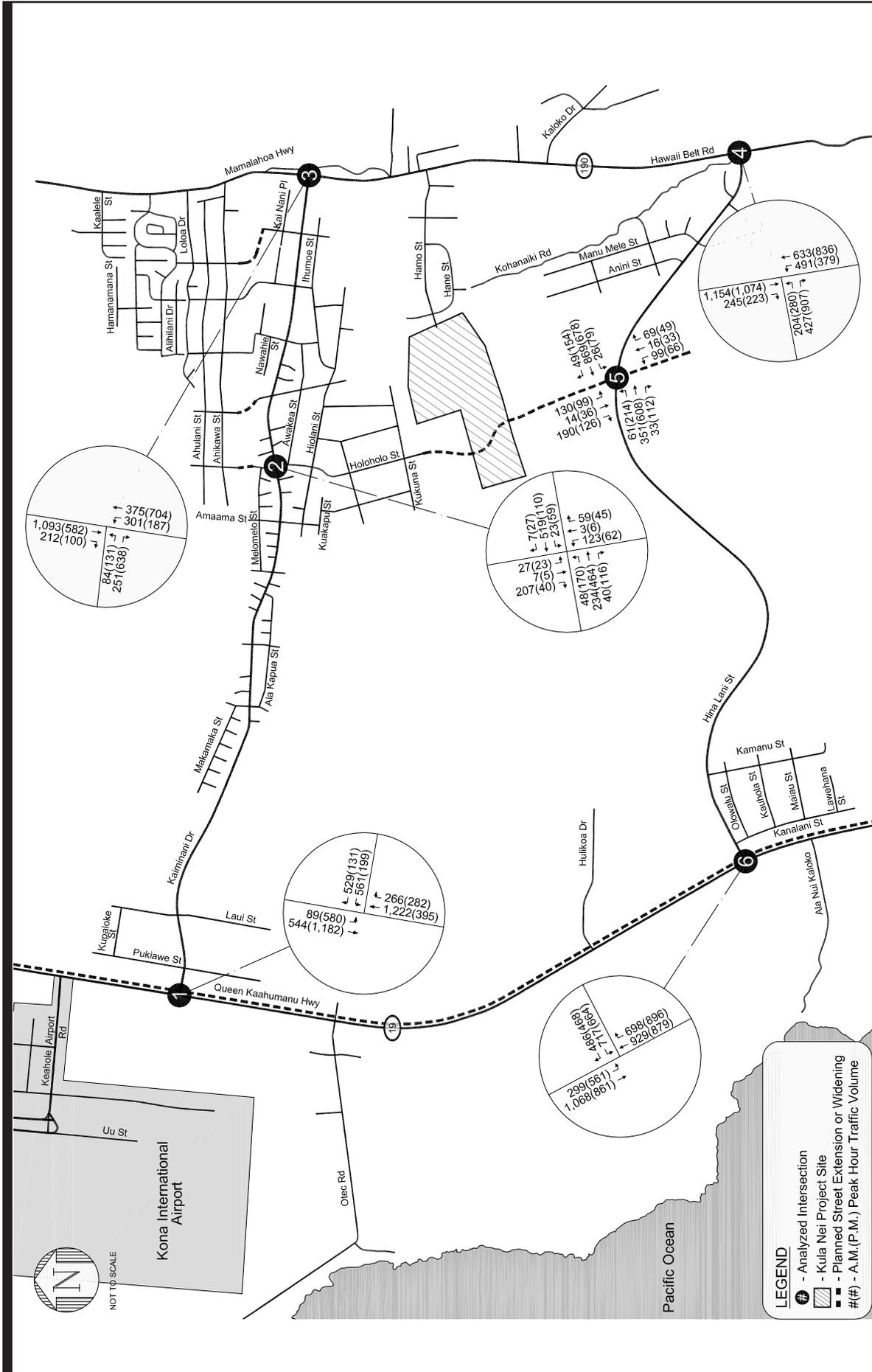
**Figure 4-20**  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

**PROJECT ONLY PEAK HOUR TRAFFIC VOLUMES—HDOT ALTERNATIVE FUTURE SCENARIO**

Source: Fehr & Peers/Kaku Associates, June 2007







**Figure 4-21**  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

Source: Fehr & Peers/Kaku Associates, June 2007





**Table 4-21: INTERSECTION LEVEL OF SERVICE ANALYSIS SUMMARY  
HDOT ALTERNATIVE FUTURE SCENARIO (2020)**

Intersections	Peak Hour	CUMULATIVE BASE (2020)			CUMULATIVE PLUS PROJECT (2020)			CUMULATIVE PLUS PROJECT WITH MITIGATION (2020)			LOS D OR BETTER
		V/C	Del/Veh*	LOS	V/C	Del/Veh*	LOS	V/C	Del/Veh*	LOS	
1. Queen Ka'ahumanu Highway (SR 19) & Kaiminani Dr	A.M.	0.994	42	D	1.008	45	D	No mitigation necessary			YES
	P.M.	0.776	20	B	0.826	22	C				YES
2. Hohoholo St & Kaiminani Dr [a]	A.M.	NC	**	F	NC	**	F	0.619	20	B	YES
	P.M.	NC	23	C	NC	**	F	0.711	14	B	YES
3. Māmalahoa Highway (SR 190) & Kaiminani Dr [a]	A.M.	NC	**	F	NC	**	F	1.024	42	D	YES
	P.M.	NC	**	F	NC	**	F	0.917	35	C	YES
4. Māmalahoa Highway (SR 190) & Hina Lani St	A.M.	1.840	**	F	1.920	**	F	1.015	44	D	YES
	P.M.	1.826	**	F	1.952	**	F	1.168	**	F	NO
5. Kealahaa St/Hohoholo St & Hina Lani St [a]	A.M.	NC	**	F	NC	**	F	0.954	36	D	YES
	P.M.	NC	**	F	NC	**	F	0.962	28	C	YES
6. Queen Ka'ahumanu Highway (SR 19) & Hina Lani St	A.M.	1.331	**	F	1.359	**	F	0.967	34	C	YES
	P.M.	2.155	**	F	2.173	**	F	1.007	39	D	YES

Notes:

\* Delay indicates average stopped delay per vehicle in seconds for signalized intersections. The worst case vehicular delay is reported for stop-controlled intersections.

\*\* Indicates oversaturated conditions. Delay cannot be calculated.

NC = Not Calculated

[a] Intersection is controlled by stop signs on the minor approaches.

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**Table 4-22: STREET SEGMENT IMPACT ANALYSIS –  
HDOT ALTERNATIVE FUTURE SCENARIO (2020)**

Segment	Location	Peak Hour	Dir.	EXISTING (2006)			CUMULATIVE BASE (2020)			CUMULATIVE PLUS PROJECT (2020)			
				Volumes	V/C	LOS	Volumes	V/C	LOS	Volumes	V/C	LOS	
1. Kaiminani Drive	mauka of Queen Ka'ahumanu Highway	A.M.	EB	170	0.10	A	195	0.11	A	215	0.13	A	
		P.M.	WB	765	0.45	A	872	0.51	A	933	0.55	A	
2. Hina Lani Street	mauka of Queen Ka'ahumanu Highway	A.M.	EB	627	0.37	A	734	0.43	A	803	0.47	A	
		P.M.	WB	158	0.09	A	201	0.12	A	241	0.14	A	
3. Māmalahoa Highway	north of Kaaeale Street	A.M.	EB	217	0.13	A	478	0.28	A	487	0.29	A	
		P.M.	WB	402	0.24	A	938	0.55	A	965	0.57	A	
4. Māmalahoa Highway	south of Hina Lani Street	A.M.	EB	380	0.22	A	1,123	0.66	B	1,154	0.68	B	
		P.M.	WB	320	0.19	A	710	0.42	A	728	0.43	A	
		A.M.	NB	201	0.12	A	341	0.20	A	371	0.22	A	
		P.M.	SB	301	0.18	A	525	0.31	A	535	0.31	A	
		A.M.	NB	267	0.16	A	471	0.28	A	491	0.29	A	
		P.M.	SB	284	0.17	A	488	0.29	A	522	0.31	A	
		A.M.	NB	706	0.42	A	1,114	0.66	B	1,124	0.66	B	
		P.M.	SB	1,021	0.60	A	1,643	0.97	E	1,672	0.98	E	
		With Mitigation (Second Southbound Lane)											
		SB											
		A.M.	NB	672	0.40	A	1,182	0.70	B	1,215	0.71	B	
		P.M.	SB	2,041	1.20	F	2,838	1.67	F	2,857	1.68	F	
			SB	With Mitigation (Second Southbound Lane)									
				With Mitigation (Second Southbound Lane)									
							2,857			0.89			
										D			

Note: Roadway Capacity of 1,700 passenger car per lane is based on *Highway Capacity Manual* (Transportation Research Board, 2000).

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**Table 4-23: 2020 PROJECT FAIR SHARE INTERSECTION TRAFFIC CONTRIBUTION –  
HDOT ALTERNATIVE FUTURE CONDITIONS**

Int #	Intersection	A.M. Peak Hour					P.M. Peak Hour					Maximum Contribution
		Existing Traffic	2020 with Project Traffic	Project Traffic	Total New Traffic	Project % of New Traffic	Existing Traffic	2020 with Project Traffic	Project Traffic	Total New Traffic	Project % of New Traffic	
2	Holoholo St & Kaiminani Dr	787	1,297	121	510	23.7%	701	1,127	163	426	38.3%	100%*
3	Māmalahoa Highway & Kaiminani Dr	1,526	2,316	40	790	5.1%	1,454	2,342	54	888	6.1%	6.1%
4	Māmalahoa Highway & Hina Lani St	1,854	3,154	39	1,300	3.0%	2,133	3,699	52	1,566	3.3%	3.3%
5	Holoholo St & Hina Lani St	727	1,907	73	1,180	6.2%	601	2,254	100	1,653	6.0%	6.2%
6	Queen Ka'ahumanu Highway & Hina Lani St	2,418	4,197	36	1,779	2.0%	2,472	4,329	49	1,857	2.6%	2.6%

\* The cumulative impact at this location is also identified as a project specific impact in the p.m. peak hour.

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#### **4.3.7.8 Summary and Conclusions**

This study was undertaken to analyze potential traffic impacts of the proposed Kula Nei residential development located in the Kalaoa area of North Kona on the island of Hawai‘i. The following summarizes the key findings of the study:

- The proposed Kula Nei project would construct 270 new residential dwelling units and 2.5 acres of open space with a completion year of 2017.
- Peak hour capacity analyses were conducted for six (five existing and one proposed) intersections on the street system in the vicinity of the project site. Four of five existing intersections currently operate at LOS D or better during the weekday peak hours.
- Street segment analysis was conducted for four street segments: Kaiminani Drive *mauka* of Queen Ka‘ahumanu Highway, Hina Lani Street *mauka* of Queen Ka‘ahumanu Highway, Māmalahoa Highway north of Kaalele Street, and Māmalahoa Highway south of Hina Lani Street.
- The project is expected to generate approximately 2,584 weekday daily trips, including 203 trips (51 inbound, 152 outbound) during the weekday morning peak hour, and 273 trips (172 inbound, 101 outbound) during the weekday afternoon peak hour.
- Analysis of projected year 2020 cumulative base conditions, representing future conditions without the proposed project, indicates that four of the six analyzed intersections would operate at LOS F during both peak hours and one of the six would operate at LOS D in the A.M. peak hour and LOS E in the P.M. peak hour.
- Analysis of projected year 2020 cumulative base plus project conditions indicates that five of the six analyzed intersections would operate at LOS F during both peak hours. Thus, the project would result in one project-specific traffic impact in the vicinity and would also contribute to four cumulative traffic impacts.

Mitigation strategies for future (2020) conditions with the project to address identified deficiencies at the five study intersections with projected poor levels of service (LOS E or F) were developed. Each of the identified project-related impacts would be fully mitigated (*i.e.*,

the recommended improvements would result in better V/C ratios and levels of service than are projected under cumulative base conditions). The cumulative impact at one study intersection (Māmalahoa Highway and Hina Lani Street in the P.M. peak hour), however, cannot be fully mitigated.

- Project fair-share contributions to the recommended cumulative mitigation measures were identified on the basis of the maximum proportion of project-related traffic in each of the analyzed peak hours, relative to the total projected traffic growth at each location. The identified contributions range from approximately 3% to 9%, except at the intersection of Holoholo Street and Kaiminani Drive, where a project-specific impact was identified and the project's fair-share contribution would be 100%.

Future increases in peak hour traffic volumes were evaluated for four street segments. Street segment analysis of projected year 2020 cumulative base plus project conditions indicates that three of four street segments would adequately accommodate the projected increase in volumes during the peak hours. A mitigation measure was developed to improve traffic flow where necessary (southbound Māmalahoa Highway south of Hina Lani Street).

- Alternative Future Scenario I assumed that the planned Stanford Carr project would not be built by the study horizon year. Thus, all of the planned improvements to the street system in the project vicinity were assumed to be in place, with the exception of Kealakaa Street/Holoholo Street extension between the project and Hina Lani Street. The number and location of cumulative and project-specific traffic impacts in this scenario was found to be similar to the assessment of the anticipated future scenario, except that no impact would occur at the intersection of Hina Lani Street and Kealakaa Street/Holoholo Street, as it would not exist. Implementation of the proposed mitigation measures would fully mitigate the project-related impacts and would result in LOS D or better at all but one study intersection. The cumulative impact at Māmalahoa Highway and Hina Lani Street (in the P.M. peak hour only), however, cannot be fully mitigated.
- Alternative Future Scenario II assumed that the planned extension of Holoholo Street immediately north of the project site would not be constructed, though the remainder of the planned roadway network extension and background traffic growth was assumed. In this

scenario, direct access to the project would be available only southward to Hina Lani Street. Four of six study intersections and one street segment would be impacted in this scenario. Implementation of the proposed mitigation measures would fully mitigate the project-related impacts and would result in LOS D or better at all but one study intersection. The cumulative impact at Māmalahoa Highway and Hina Lani Street (in the P.M. peak hour only), however, cannot be fully mitigated.

- A third alternative future scenario was evaluated at the request of HDOT, which assumed that the full expansion of the regional street system planned by County of Hawai‘i would not be implemented by the study horizon year (2020) but that the planned Stanford Carr project would be completed. The number and location of cumulative and project-specific traffic impacts in this scenario was found to be similar to the assessment of the anticipated future scenario. Additional mitigation measures were developed to achieve LOS D or better at all but one study intersection (Māmalahoa Highway and Hina Lani Street in the P.M. peak hour only).

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			Retaining the property in its vacant undeveloped state will require no transportation-related improvements. This will result in no extension of Holoholo Street and no improvements to the regional traffic circulation system.
2. Proposed Action			✓	Development of the project will have significant adverse impacts upon the regional traffic circulation system. To address those impacts, a series of mitigations are proposed, including the extension of Holoholo Street and fair-share contributions toward the signalization of key intersections.
3. Large-Lot Subdivision	✓			The development of approximately 20 five-acre residential lots would not likely result in significant adverse impacts to the regional traffic circulation system.
4. Small-Lot Subdivision			✓	Development of this alternative would result in a project density approximately twice that of the Preferred Alternative, with a corresponding increase in the traffic related impacts.

## 4.4 NOISE

### 4.4.1 Introduction

Title 11, Chapter 46, of the Hawai‘i Administrative Rules (HAR 11-46) defines maximum permissible sound levels. HAR 11-46 is intended to protect, control, and abate noise pollution from stationary sources and from construction, industrial, and agricultural equipment. It sets maximum permissible sound levels in various zoning districts for excessive noise sources during the day and at night at the property line where the activity occurs, as shown in the following table.

**Table 4-24: MAXIMUM PERMISSIBLE SOUND LEVELS IN dBA\***

Class	Zoning	Maximum Permissible Sound Level (dBA)	
		Daytime (7:00 AM to 10:00 PM)	Nighttime (10:00 PM to 7:00 AM)
A	Residential, conservation, preservation, public space, open space, or similar type	55	45
B	Multi-family dwellings, apartment, business, commercial, hotel, resort, or similar type	60	50
C	Agriculture, country, industrial, or similar type	70	70

\*dBA = A-weighted sound level in decibels

Source: HAR 11-46

Except in Class A-C zoning, the maximum permissible noise at night is 10 dBA less than during the day. For impulsive noise, the Hawaii State Department of Health defines the maximum permissible sound level as 10 dBA above the levels specified in the table. Maximum permissible sound levels are not to be exceeded more than 10 percent of the time in a 20-minute period without a permit or variance.

### 4.4.2 Existing Conditions

The project is situated in the vicinity of several residential subdivisions (Figure 4-22). Occupied subdivisions adjacent to the Kula Nei site include Kona Acres (O‘oma Homesteads) to the north and northwest and Kona Hills Estates to the east. Other adjacent subdivisions—not yet developed—include O‘oma Plantation to the north and northeast and Kaloko Heights to the



**Figure 4-22**  
**REGIONAL VIEW OF PROJECT AREA**

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south. Ambient noise in these neighborhoods is most likely attributed to vehicular traffic on local roads and periodic use of yard maintenance equipment by residents.

#### 4.4.3 Potential Impacts and Mitigation

Noise impacts would occur during construction. These impacts are not considered significant since they would be temporary, and construction work would be conducted in compliance with applicable DOH noise regulations. No significant noise impacts are expected during the operational phase of the project. Ambient noise may increase slightly due to additional vehicular traffic.

Construction activities will involve grubbing and grading of the site and construction of infrastructure and buildings. Noise levels associated with construction equipment typically range from 80 to 95 dBA at 50 feet from the source. Varying in location and duration, noise levels may be continuous (e.g., generator motors), fluctuating (e.g., crane operations), or impulsive (e.g., metal drill pipes banging together). Some of the potential noise sources and noise levels (in dBA at 50 feet) anticipated during construction at Kula Nei are listed below as examples.<sup>1</sup>

**Table 4-25: POTENTIAL NOISE SOURCES DURING CONSTRUCTION**

Equipment motors	88 dBA
Backup alarms	87 to 107 dBA
Diesel generators	81 to 84 dBA
Truck motors	88 dBA
Paving equipment	80 to 89 dBA
Cement mixer	85 dBA
Human voices	70 dBA

As stated above, construction work would be conducted in compliance with State noise control regulations. Measures to minimize noise impacts may include limiting work to daytime hours, reducing truck/equipment idling when not in use, using manually adjustable or self-adjusting backup alarms, and fitting generators and equipment with manufacturer-approved exhaust mufflers.

<sup>1</sup> U.S. Department of Transportation Federal Highway Administration. Effective Noise Control During Nighttime Construction. [http://ops.fhwa.dot.gov/wz/workshops/accessibile/Schexnayder\\_paper.htm](http://ops.fhwa.dot.gov/wz/workshops/accessibile/Schexnayder_paper.htm).

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			The No Action Alternative would have no impacts on noise quality.
2. Proposed Action		✓		Short-term temporary noise impacts will occur during construction. Construction work will be conducted in compliance with applicable State Department of Health noise regulations.
3. Large-Lot Subdivision		✓		Short-term temporary noise impacts would occur during construction. Construction work would be conducted in compliance with applicable State Department of Health noise regulations.
4. Small-Lot Subdivision		✓		Short-term temporary noise impacts would occur during construction. Construction work would be conducted in compliance with applicable State Department of Health noise regulations.

## 4.5 AIR QUALITY

B. D. Neal & Associates conducted an air quality study for the proposed Kula Nei project (see Appendix N). The study, summarized here, examined potential short- and long-term air quality impacts associated with construction and use of the Kula Nei proposed residential development and suggested mitigation measures to reduce impacts where possible and appropriate.

### 4.5.1 Existing Conditions

#### 4.5.1.1 Climate and Air Quality Standards

Regional and local climate together with the amount and type of human activity generally dictate the air quality of a given location. The following describes typical climate conditions and present air quality in the Kula Nei site vicinity. State and national ambient air quality standards (AAQS) are established to regulate ambient concentrations of particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, and lead. In addition, the state has set a standard for hydrogen sulfide. Hawai'i AAQS for nitrogen dioxide and carbon monoxide are more stringent than the national standards, while the AAQS for the other parameters are comparable. The air quality study consultant relied on these standards to assess potential project impacts and their significance.

Small-scale, random motions in the atmosphere, or turbulence, can cause air pollutants to be dispersed. Turbulence is often measured in terms of the Pasquill-Gifford stability class, with class 1 being the most turbulent and class 6 being the least turbulent. Thus, air pollution dissipates the most during class 1 conditions and the least when class 6 prevails. In the Kona area, stability classes 5 and 6 typically occur during nighttime or early morning hours due to temperature inversions. These inversions result from radiational cooling or from air flowing down from the mountainous interior of the island. Stability classes 1 through 4 occur in Kona during the day, depending mainly on cloud cover, solar radiation, and sea breezes.

Mixing height is another factor affecting air quality. It is defined as the height above the surface through which relatively vigorous vertical mixing occurs. Low mixing heights can result in high ground-level air pollution concentrations because contaminants emitted from or near the surface become trapped within the mixing layer. In Hawai'i, minimum mixing heights tend to be high due to trade winds and the ocean's temperature moderating effect. Mixing heights in Hawai'i are typically above 3,000 feet (1,000 meters).

Rainfall can have a beneficial effect on air quality, helping to suppress fugitive dust and "washing out" gaseous, water-soluble contaminants. The Kula Nei site is wetter than might be expected due to persistent onshore and upslope movement of marine air. Average annual rainfall at the Old Kona Airport is about 25 inches, with each month measuring about 2 inches. The project site probably experiences slightly higher rainfall due to its higher elevation.

#### **4.5.1.2 Existing Air Quality**

Except for periodic impacts from volcanic emissions (vog) and possibly from localized traffic congestion, air quality in the Kula Nei project vicinity is relatively good. Limited air quality data available from the Department of Health indicate that, despite the vog, concentrations are well within state and national air quality standards.

Air quality in the project vicinity is mostly affected by pollutants from vehicular, industrial, and natural sources. The Kula Nei site is situated between two arterial roadways, Queen

Ka‘ahumanu Highway and Māmalahoa Highway. At times, upslope and downslope winds tend to carry motor vehicle emissions toward the site.

HELCO’s Keāhole Power Plant, located four miles to the northwest of Kula Nei, is the primary industrial source of air pollution in the project area. Emissions from the plant consist mostly of sulfur dioxide and oxides of nitrogen.

Volcanic air pollution emissions consist primarily of sulfur dioxide. Prevailing wind patterns eventually carry some of the Kīlauea volcanic emissions into the Kona area, resulting in a persistent haze.

The State of Hawai‘i DOH operates a network of air quality monitoring stations, but very limited data are available for Hawai‘i Island, and even less for the Kona area. Monitoring at Kealakekua between ~~2000–2004~~2000 and 2004 showed consistently low concentrations of sulfur dioxide and particulates.

There are no reported measurements of motor vehicle related air pollutants in the project vicinity (i.e., lead, ozone, nitrogen dioxide, carbon monoxide). Lead, ozone, and nitrogen dioxide are typically regional-scale problems. Concentrations of lead and nitrogen dioxide have not been found to exceed AAQS elsewhere in the state. However, ozone concentrations at Sand Island on Oahu have been found at times to exceed state standards.

Carbon monoxide air pollution is a micro-scale problem caused by congested motor vehicle traffic. In urban Honolulu, carbon monoxide concentrations have been found to occasionally exceed the state AAQS. A computerized air quality monitoring study was undertaken to estimate current ambient concentrations of carbon monoxide at several roadway intersections in the project vicinity and to predict future levels both with and without the proposed project. During worst-case conditions, model results indicate that present 1-hour and 8-hour carbon monoxide concentrations are within both state and national AAQS. (Note: Information on the study methodology and findings is in Appendix N.)

#### 4.5.2 Potential Impacts and Mitigation

Short-term direct and indirect impacts on air quality could potentially occur during project construction. Direct impacts include (1) fugitive dust due to vehicle movement and soil excavation, and (2) exhaust emissions from onsite equipment. Indirect impacts could result from (1) slow-moving construction vehicles/equipment traveling to and from the site, (2) a temporary increase in local traffic caused by commuting construction workers, and (3) disruption of normal traffic flow due to roadway lane closures.

State of Hawai'i Air Pollution Control regulations prohibit visible emissions of fugitive dust from construction activities at the property line. A dust control program will be developed and followed to control dust from construction activities. Fugitive dust emissions can be controlled to a large extent by watering active work areas, using wind screens, keeping adjacent paved roads clean, and covering open-bodied trucks. Other measures include limiting the area to be disturbed at any given time, mulching or chemically stabilizing inactive areas, or paving and landscaping areas early in the construction schedule. Monitoring dust at the project boundary could be considered to evaluate the effectiveness of the dust control program.

The largest mobile and stationary construction equipment is usually diesel-powered, and nitrogen oxide emissions from diesel engines are relatively higher than those from gasoline-powered equipment. However, the standard for nitrogen dioxide is set on an annual basis and is unlikely to be exceeded by short-term construction activities. Carbon monoxide emissions from diesel engines, on the other hand, are low and should be insignificant when compared to vehicular emissions on nearby roadways.

Measures are available to minimize traffic obstructions associated with construction and the resulting temporary increase in exhaust emissions. The problem can be alleviated by attempting to keep roadways open during peak traffic hours and by moving construction equipment and workers to and from the project site during off-peak traffic hours. If lane closures are required, these could be limited to off-peak hours, with control measures implemented to ease traffic flow.

#### **4.5.2.1 Potential Roadway Traffic Impacts**

Computerized emission and atmospheric dispersion models were used to estimate ambient carbon monoxide concentrations at the following roadway intersections in the project vicinity and to predict future levels both with and without the proposed project. Intersections are generally where traffic becomes congested, with increases in vehicular emissions associated with queuing. The same intersections addressed in the traffic study were selected for the air quality analysis.

- Queen Ka‘ahumanu Highway at Kaiminani Drive
- Holoholo Street at Kaiminani Drive
- Māmalahoa Highway at Kaiminani Drive
- Māmalahoa Highway at Hina Lani Street
- Kealeka‘a Street at Hina Lani Street
- Queen Ka‘ahumanu Highway at Hina Lani Street

The EPA computer model MOBILE6 was used to calculate vehicular carbon monoxide emissions. Carbon monoxide was selected for modeling because it is the most stable and abundant of the pollutants generated by motor vehicles.<sup>2</sup> Furthermore, carbon monoxide air pollution is generally considered to be a micro-scale problem that can be addressed locally to some extent. Maximum carbon monoxide concentrations typically coincide with peak traffic periods, which were analyzed in the traffic study. These same periods - morning and afternoon - were covered in the air quality impact assessment.

Three scenarios were selected for the modeling study: (1) year 2006 with present conditions, (2) year 2020 without the project (no-action alternative), and (3) year 2020 with the project (proposed action). The objective was to estimate maximum 1-hour average carbon monoxide

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<sup>2</sup> Motor vehicles with gasoline-powered engines are significant sources of carbon monoxide; they also emit nitrogen oxides and other contaminants. With federal regulations requiring emission control devices, it is estimated that carbon monoxide emission will decrease an average of about 30 to 40 percent per vehicle during the next decade due to the replacement of older vehicles with newer models.

concentrations for each scenario and to evaluate the significance of the estimated concentrations by comparing them with each other and with the state and federal AAQS.

For providing input to MOBILE6, assumptions were made regarding vehicle mix and ambient temperatures. Unless very detailed information is available, national average values are typically assumed, and these values were used to represent the present vehicle mix, with slight adjustments made to the vehicle mix in the future scenarios. Ambient temperatures of 59 and 68 degrees Fahrenheit were used for the morning and afternoon peak-hour emission computation, respectively. These are conservative assumptions since temperatures are generally warmer, and emission estimates given by MOBILE6 have an inverse relationship to ambient temperature.

Vehicular carbon monoxide emission computations from MOBILE6 were then input to CAL3QHC, an atmospheric dispersion model developed for EPA. CAL3QHC simulates vehicular movement, vehicle queuing, and atmospheric dispersion of vehicular emissions near intersections. It is designed to predict 1-hour average pollutant concentrations based on input traffic and emission data, roadway/receptor geometry, and meteorological conditions. Input peak-hour traffic data were obtained from the traffic study cited above. Emission factors were obtained from MOBILE6 based on assumed free-flow vehicle speeds corresponding to posted speed limits. Model roadways were set up to reflect roadway geometry, physical dimensions, and operating characteristics. Input meteorological conditions were defined to provide “worst-case” results. For example, the most conservative atmospheric stability classes were assumed for the morning and afternoon peak periods. Another meteorological assumption - wind speed of 1 meter per second with a steady direction for one hour - is also conservative (and extremely unlikely).<sup>3</sup>

During worst-case conditions, model results indicate that present 1-hour and 8-hour carbon monoxide concentrations are within both state and national AAQS. In the year 2020 without the project (no-action alternative), carbon monoxide concentrations are predicted to remain about the same or decrease, even with larger volumes of traffic. This is the result of older vehicles being retired over time. In the year 2020 with the project (proposed action) and with traffic mitigation

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<sup>3</sup> Assuming 2 meters per second results in carbon monoxide concentrations of only about half the values concluded in this study.

measures implemented, as recommended in the traffic study, carbon monoxide concentrations are estimated to either remain about the same or decrease compared to the without-project/no-action scenario. Worst-case concentrations would remain within the state and national AAQS through the year 2020.

Table 4-26 shows the estimated worst-case 1-hour morning and afternoon ambient carbon monoxide concentrations for the three scenarios. All predicated 1-hour concentrations remain within the state and national AAQS.

**Table 4-26: ESTIMATED WORST-CASE 1-HOUR CARBON MONOXIDE CONCENTRATIONS ALONG ROADWAYS NEAR KULA NEI PROJECT (milligrams per cubic meter)**

Roadway Intersection	Year/Scenario					
	2006/Present		2020/Without Project		2020/With Project*	
	AM	PM	AM	PM	AM	PM
Queen Ka'ahumanu Highway at Kaimiani Drive	5.1	3.6	4.0	2.8	4.1	2.8
Holoholo Street at Kaimanani Drive	2.8	1.4	2.3	1.7	2.4	1.8
Māmalahoa Highway at Kaiminani Drive	5.1	3.1	5.3	3.3	4.3	2.5
Māmalahoa Highway at Hina Lani Street	4.6	3.2	5.0	2.9	4.4	3.1
Kealakaa Street at Hina Lani Street	-	-	3.4	2.4	3.3	2.2
Queen Ka'ahumanu Highway at Hina Lani Street	5.8	3.9	5.6	3.6	5.0	3.6

\* Includes mitigation measures given in project traffic report.

Hawai'i State AAQS: 10  
National AAQS: 40

Table 4-27 shows the estimated worst-case 8-hour carbon monoxide concentrations. These concentrations were estimated by multiplying the worst-case 1-hour values by a “persistence factor” of 0.5, which accounts for the fact that (1) traffic volumes averaged over 8 hours are lower than peak 1-hour values and (2) meteorological conditions are more variable (and hence more favorable for dispersion) over an 8-hour period than they are for a single hour. As with the predicted 1-hour concentrations, the 2020 with-project scenario, which assumes implementation of recommended traffic mitigation measures, shows worst-case concentrations remaining the same or decreasing when compared to the without-project/no-action scenario. Under all scenarios, carbon monoxide concentrations are within the state and national AAQS.

**Table 4-27: ESTIMATED WORST-CASE 8-HOUR CARBON MONOXIDE CONCENTRATIONS ALONG ROADWAYS NEAR KULA NEI PROJECT (milligrams per cubic meter)**

Roadway Intersection	Year/Scenario		
	2006/Present	2020/Without Project	2020/With Project*
Queen Ka'ahumanu Highway at Kaimiani Drive	2.6	2.0	2.0
Holoholo Street at Kaimanani Drive	1.4	4.2	1.2
Māmalahoa Highway at Kaiminani Drive	2.6	2.6	2.2
Māmalahoa Highway at Hina Lani Street	2.3	2.5	2.2
Kealakaa Street at Hina Lani Street	-	1.7	1.6
Queen Ka'ahumanu Highway at Hina Lani Street	2.9	2.8	2.5

\* Includes mitigation measures given in project traffic report.

Hawai'i State AAQS: 5  
National AAQS: 10

#### **4.5.2.2 Potential Electrical Power Plant Impacts**

The air quality study addressed long-term indirect impacts due to emissions associated with electrical power generation and solid waste disposal. The annual electrical demand of the project when fully developed is expected to reach approximately 8 million kilowatt-hours. The project will be served by HELCO. Most of the electrical power from HELCO would be provided by oil-fired generating facilities, with some of the power derived from geothermal energy, wind power, and other sources. Table 4-28 presents estimates of the indirect air pollution emissions that would result from the project's electrical demand, assuming that all power is provided by burning fuel oil at local power plants. (This is a conservative assumption, given current efforts to develop alternative energy facilities such as wind farms, as well as the fact that HELCO is required by state law to generate 20% of power with alternative energy sources by 2020.) The estimated indirect emissions amount to less than one percent of the present air pollution occurring on the island of Hawai'i, even if all power is assumed to be derived from oil. Indirect impacts would be minor based on the relatively low magnitude of emissions; hence, no mitigation is required.

**Table 4-28: ESTIMATED INDIRECT AIR POLLUTION EMISSION FROM KULA NEI PROJECT ELECTRICAL DEMAND\***

Air Pollutant	Emission Rate (tons/year)
Particulate	2
Sulfur Dioxide	21
Carbon Monoxide	2
Volatile Organics	<1
Nitrogen Oxides	9

\* Based on U.S. EPA emission factors for utility boilers [2]. Assumes demand of 8 million kw-hrs per year of electrical power use. Estimated emission rates assume low-sulfur oil used to generate power.

**4.5.2.3 Potential Solid Waste Disposal Impacts**

Solid waste generated by the project when fully developed and occupied is not expected to exceed 846 tons per year. This assumes that approximately 294 tons per year can be diverted into recycling. All solid waste on the island is currently buried at landfills. Assuming continuation of this practice, the only associated air pollution emissions associated with solid waste disposal would occur from the trucking of waste to the landfill and burying it. These emissions would be relatively minor and not require any mitigation.

**4.5.3 The Impacts of the Alternatives on Air Quality**

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			The No Action Alternative would have no impacts on air quality.
2. Proposed Action	✓			Short-term potential impacts during construction will be mitigated by following State of Hawai'i Air Pollution Control regulations. Long-term traffic related potential impacts indicate that worst-case conditions for 1-hour and 8-hour carbon monoxide concentrations would be within both state and national ambient air quality standards (AAQS). Long-term potential impacts associated with indirect air pollution emissions that would result from the project's electrical demand and solid waste disposal demand will be minor.
3. Large-Lot Subdivision	✓			Potential short-term and long-term impacts of the Large-Lot Subdivision Alternative should be no more, and likely less, than the Proposed Action. No mitigation measures would be warranted.

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
4. Small-Lot Subdivision	✓			Potential short-term and long-term impacts of the Small-Lot Subdivision Alternative should not exceed ambient air quality standards. No mitigation measures would be warranted.

## 4.6 VISUAL RESOURCES

The visual character of the Kula Nei project is defined by its setting on the west facing slope of Hualālai. The mountain rises to a height of 8,271 feet above sea level. The project area is situated on the lower mountain slope at elevations between 700 and 1,000 feet and is just over three miles upslope from the shoreline. It is over eight miles from the summit of Hualālai. Figure 4-23 presents the view of the coastline from the Primary Project Area.



**Figure 4-23 Views From the Project Site Looking towards Queen Ka'ahumanu Highway**

#### 4.6.1 Existing Conditions in the Primary Project Area

As described earlier in this chapter, the project area is presently undeveloped land overgrown with scrub forest that includes trees and dense Christmas berry undergrowth. Open areas that were bulldozed before the applicant purchased the property were rapidly overgrown with fountain grass. Figure 4-24 presents an oblique aerial view of the Primary Project Area from a point southeast. The Kona Acres subdivision is at the top of the photo and a small portion of roadway within the Kona Hills Estates is visible at the right side.

Views of the project area from neighboring properties are obscured by the existing vegetation. It is generally not possible to see beyond the perimeter of the property to the interior. Thus, the appearance of the project area is that of a densely vegetated area with no panoramic views.

The property is generally visible from viewpoints further down slope because of the slope of the mountainside. However, because the property abuts forested land on the south, west and northwest sides, when viewed from the shoreline or from Queen Ka'ahumanu Highway it is not easy to distinguish it from those surrounding properties.

The project area is not visible from Māmalahoa Highway due to the presence of homes and vegetation along the *makai* side of the highway.

#### 4.6.2 Existing Conditions in the Accessory Areas

The Accessory Areas are to be used mostly for the construction of roadways, and subterranean infrastructure, including underground water lines, sewer lines and utility lines. Parcel 8, north of the project, will be crossed by the Holoholo Street extension. Parcel 8 is forested in a manner similar to the Primary Project Area.

The Kaloko Heights property south of the Primary Project Area is presently forested in a manner similar to the Primary Project Area. However, the Kaloko Heights property is already approved for residential development and the character of its appearance will change once development begins.



**Figure 4-24**  
**AERIAL VIEW OF PROJECT AREA**

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The proposed potable water well and storage reservoir will be located on the southern side of an existing residential property upslope from Māmalahoa Highway. The property is occupied by a single-family dwelling and the surrounding yard has been cleared and landscaped with grass.

The offsite transmission line alignments correspond to existing paved roadways in the region.

#### **4.6.3 Primary Project Area: Potential Visual Impacts and Mitigation**

Development of the Primary Project Area will result in the replacement of vegetated land with homes and landscaped yards. It will become visible from the existing developments of O‘oma Plantation and Kona Hills Estates, which lie northeast and east of the project area, respectively. From these vantage points, the Primary Project Area will appear as a continuation of the low density residential development in the region. Figure 4-25 presents a view of Kona Hill Estates (looking north to south) just *mauka* of the Primary Project Area. The visual character of the Kula Nei project will be generally similar to that of the Kona Hills Estates.



**Figure 4-25 View of the Existing Kona Hills Estates Subdivision Adjacent to and East of the Primary Project Area**

From the shoreline and from Queen Ka‘ahumanu Highway, the Primary Project Area will become visible because it will be distinguishable from the forested areas surrounding it on the northwest, western, and southern sides. It will appear as a continuation of the low-density residential development abutting it upslope to the northeast and east.

The proposed development will not obstruct views from Queen Ka‘ahumanu Highway or from the shoreline to the summit of Hualālai because of its location on the lower slope of the mountain.

As the presence of the project is not anticipated to constitute significant adverse impact on views, no mitigation measures are proposed.

#### **4.6.4 Accessory Areas: Potential Visual Impacts and Mitigation**

The visual impact of development in the accessory areas is generally limited to two components: the extension of Holoholo Street across the State-owned forested land abutting the northwest side of the Primary Project Area; and the construction of the storage reservoir on portions of parcels 35, 36, and 37 *mauka* of Māmalahoa Highway. The remaining elements of infrastructure will be either located below the ground or constitute portions of roadways that are already approved for construction.

Within the immediate area, the visual impact of the Holoholo Street extension will be limited to the views from points where it will connect to the existing Holoholo Street. Drivers on the existing street will be able to see the extension extend out before them. The occupants of homes abutting the southern end of the existing street will also be able to see the new street extending south.

During the period of time that the Primary Project Area is graded, but prior to the construction of individual homesites, the Holoholo Street extension may be visible from Queen Ka‘ahumanu Highway and from the shoreline due to the slope of the mountain. During that time, it will appear as a strip of paved roadway extending laterally across a small section of mountain slope. However, once homes are built along its alignment, it will be obscured from views downslope.

Construction of the proposed storage reservoir *mauka* of Māmalahoa Highway will not be visible from the highway due to the presence of a 10-foot high embankment on the *mauka* side of the highway. The occupants of the existing single family dwelling on the property proposed for construction of the reservoir will likely be able to see the tank structure. The tank structure may be visible from properties abutting it on the south side, but those properties are presently undeveloped and unoccupied.

#### 4.6.5 The Visual Impacts of the Alternatives

Because the small lot and large lot alternatives are residential in character, their visual impact will be generally similar to the Preferred Alternative: they will appear as extensions of existing residential development in the area surrounding the subject property to the northeast, east, and eventually to the south. The large lot alternative will present an appearance of larger landscaped yards with fewer homes, while the small lot alternative will present an appearance of a denser residential community. However, when viewed from the immediate surrounding properties, the visual impact of these alternatives will be limited to the homes along the properties' perimeters. The character of the slope and the presence of homes on the perimeter will prevent views of the interior. When viewed from areas downslope, including Queen Ka'ahumanu Highway and the shoreline, the visual impact of the large lot and small lot alternatives is not anticipated to be materially different from the Preferred Alternative.

The No Action Alternative will have no impact upon views as it would result in no physical change to the visual character of the properties.

ALTERNATIVES		NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1.	No Action	✓			Retention of the project area as a vacant undeveloped area would result in no physical change to its visual character.
2.	Proposed Action	✓			Given the location of the property in relationship to the slope of the land and its distance from regional highways, development of the project will result in no significant adverse visual impacts. No mitigation measures are warranted.

ALTERNATIVES		NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
3.	Large-Lot Subdivision	✓			The visual character of this alternative will be similar to that of the Preferred Alternative, although there would be an increase in the amount of landscaped open space between home sites.
4.	Small-Lot Subdivision	✓			Although this alternative would result in a significantly higher density than the Preferred Alternative, when viewed from Queen Ka'ahumanu Highway, the project area would appear as a continuation of abutting residential development. Thus, it would not be altogether dissimilar from the Preferred Alternative.

## 4.7 INFRASTRUCTURE AND UTILITIES

Belt Collins Hawaii prepared a civil infrastructure report and related cost estimates for the Kula Nei project. The report is summarized in the following sections. The complete report is included in Appendix B.

This chapter discusses the infrastructure requirements for the Preferred Alternative, which proposes 270 residential units on approximately 92.5 acres of the approximately 130-acre Primary Project Area. Residential floor areas will range from 800 square feet to 3,000 square feet in size.

The land use elements of the master plan that have been assessed for this section include the residential units, a community park, roadways, and preservation of archaeological and cultural sites. Infrastructure facilities required to support this development include drainage facilities; a potable water system; and a wastewater collection, treatment and disposal or reuse system. The preliminary development plan for the residential units is summarized in Table 4-29.

**Table 4-29: PRELIMINARY DEVELOPMENT PLAN**

Land Use	Year							Total
	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	
Residential Units	39	40	40	39	40	38	34	270

The proposed civil infrastructure for the Kula Nei project will be built over an approximately 7-year period as the project site is gradually developed. Construction is anticipated to begin in mid-2010 and provide the required infrastructure for the initial stages of development. From 2011 until 2016, the infrastructure systems will be expanded to accommodate the entire project. Construction of the proposed development is anticipated to be completed by mid-2017.

#### **4.7.1 Roadway System**

##### **4.7.1.1 Existing Conditions**

There are no existing roadways within the project site. The parcel is bound by the existing subdivisions of Kona Hills Estates to the east, O‘oma Homesteads and O‘oma Plantation to the north and the proposed Kaloko Heights subdivision to the south. Also located north and west of the project site are undeveloped state lands.

##### **4.7.1.2 Potential Impacts and Mitigation**

###### Roadway System

Kula Nei’s internal roadways serving through-traffic will be generally designed as neighborhood streets with 50-foot rights-of-way. The County of Hawai‘i’s Planning Department has not yet determined at the time of this writing the design detail of Kula Nei’s neighborhood streets, but the applicant will comply with public road design standards. All streets will accommodate pedestrian use, either with sidewalks or grassed shoulders.

Holoholo Street, the main road through the project, will run in a north-south direction across parcel 7 and provide linkage to an on-site loop road that will serve parcels 38 and 39. The Holoholo Street extension and the loop road are proposed to be designed as neighborhood streets. They will each consist of a 50-foot right-of-way with two 10-foot paved lanes, 6-foot wide shoulders, and 9-foot grassed drainage swales.

The remaining roads within the Primary Project Area will be designed as minor streets and cul-de-sacs without sidewalks. They will consist of 50-foot rights-of-way with two 10-foot paved lanes, 6-foot shoulders, and 9-foot grassed drainage swales.

### Off-Site Access

Primary access to the site will be via an extension of Holoholo Street from Hina Lani Street through a currently undeveloped area identified as Kaloko Heights. Two secondary access routes will be provided. One will be from Hina Lani Street through Kaloko Heights, east of the primary access route. The other will be from Kaiminani Street through Kona Acres and through undeveloped State land to the north by way of a planned extension of Holoholo Street. (Figure 4-26).

### On-Site Main Roads

Holoholo Street, the main road through the project, will run in a north-south direction, providing access to the site as well as a pass-through route from Kona Acres to Kaloko Heights.

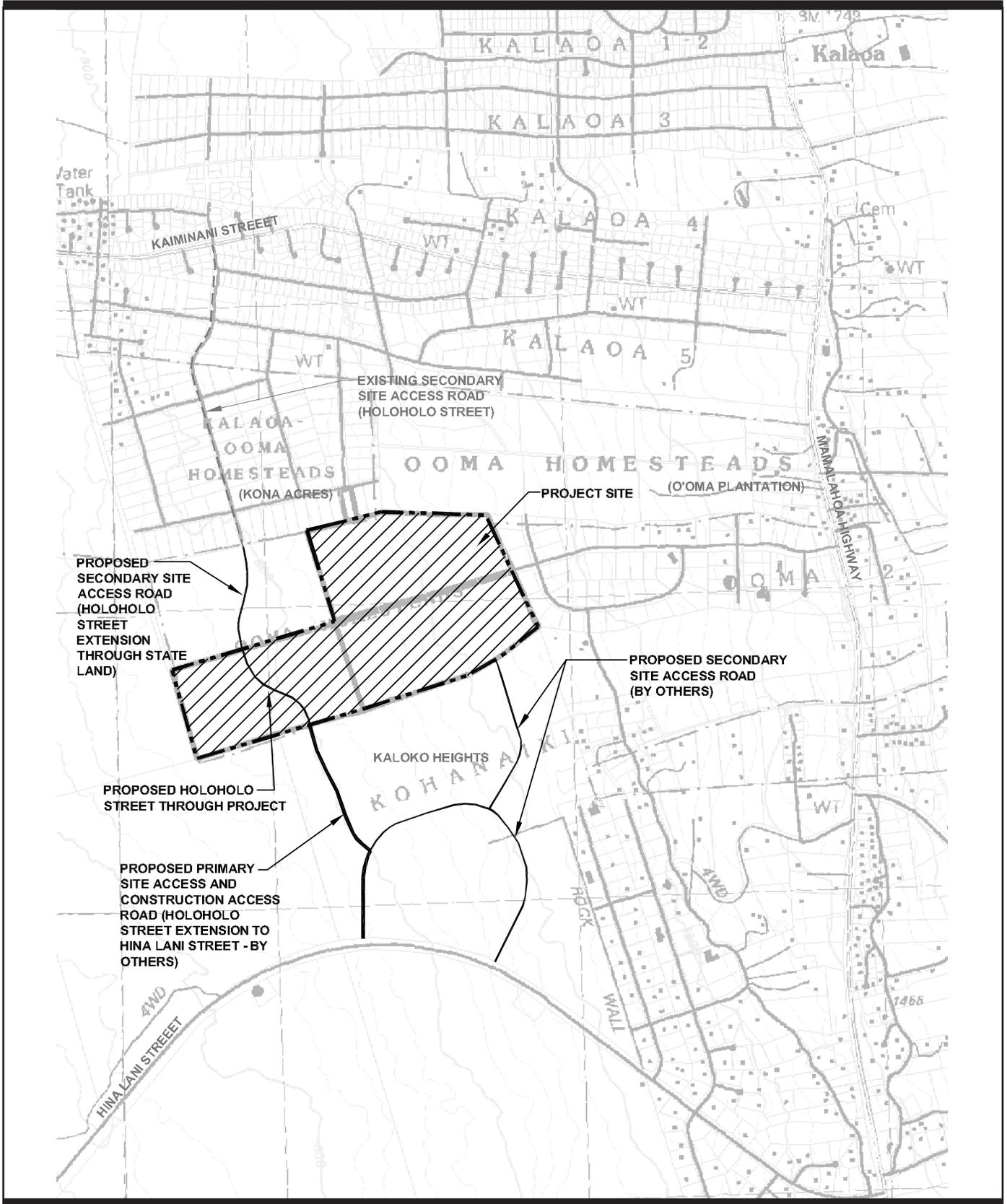
The project will include one internal main road, the “Loop Road” (Figure 4-27). Both Holoholo Street and the “Loop Road” will be dedicated to the County. It is anticipated that both Holoholo Street and the “Loop Road” will be designated as neighborhood streets by the County with a 50-foot right-of-way.

### On-Site Minor Roads

Minor roads within the development will provide access to most of the residential units within the project. These local roads will also be dedicated to the County and will, therefore, comply with all County standards. It is anticipated that these streets will be designated as minor streets and cul-de-sacs by the County. It is possible that the streets and drives within the affordable housing area will be private streets.

#### **4.7.1.3 Proposed Roadway System, Potential Impacts and Mitigation**

The proposed extension of Holoholo Street, which will run in a north-south direction, will be constructed in the early stages of development. It will provide access to the site from Kaiminani Drive, as well as provide a new through route between the existing Kona Acres to the north and the proposed Kaloko Heights residential development to the south.



**Figure 4-26**  
**PROPOSED OFF-SITE ACCESS**

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**Figure 4-27**  
**KULA NEI CONCEPT PLAN**  
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 Prepared for The Shopoff Group  
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Area take offs (acres)	Area take offs (acres)	Area take offs (acres)	Area take offs (acres)
Primary Market Residential	94.0 ac	Lava Tube Preserve	5.3 ac
Affordable Housing	6.0 ac	On-Site Reservoir	0.4 ac
Park (includes 1.3 acre leach field)	3.6 ac	Homestead Road	1.8 ac
WWTP	0.6 ac	Road Rights-of-Way	19.8 ac



- LEGEND**
- Primary Market Residential
  - Affordable Housing
  - Park
  - WWTP
  - Project Area
  - Homestead Road





No significant short-term environmental impacts are anticipated from the development of roadways associated with this project. The long-term impacts of the proposed roads would be similar to the short term impacts and would not be significant. The traffic impacts associated with the Kula Nei project are assessed in the Traffic Impact Analysis Report (TIAR) in Appendix M.

## **4.7.2 Drainage Facilities**

### **4.7.2.1 Existing Conditions**

There are currently no existing drainage facilities onsite. Storm water disposal to drywells and lava sumps is typical in the North Kona area.

### **4.7.2.2 Drainage System Design, Potential Impacts and Mitigation**

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 generally high 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 open spaces where practical. Drywells will be located within roadway rights-of-way as needed.

#### Short Term Impacts

The increase of impermeable surfaces resulting from site development will have the effect of increasing storm water runoff quantities on site. The runoff will be collected and discharged to on-site sumps and drywells for percolation into the ground. Thus, precipitation falling on the site will discharge into the ground as it does under pre-development conditions and off-site runoff will not increase as a result of the proposed development.

#### Long Term Impacts

Site drainage in the long term would continue to be discharged to the subsurface and to recharge the underlying groundwater aquifer. After the completion of project construction, ground

surfaces would be stable and the potential for erosion would be minimal. Long-term impacts of the project on drainage and erosion control are not anticipated to be significant.

After development, vegetated surfaces and underlying soils would help to remove contaminants and purify runoff that percolates to the ground water. Landscape management practices will be applied in public areas to minimize the use of fertilizers and pesticides that could potentially enter the ground water. Products sold for domestic application to yards and gardens are biodegradable and would not be expected to affect the groundwater quality. Individual lot-owners will be provided informational materials by the Home Owners' Association to help educate them about the prudent use of pesticides and fertilizers on their property and to encourage Integrated Pest Management strategies to help ensure that no significant adverse impacts upon ground water result from their individual and collective actions. The project site is hydraulically below any potable water wells, so water quality at such wells would not be subject to any potential effects from the project.

### **4.7.3 Water Supply Facilities**

#### **4.7.3.1 Existing Conditions**

There is no existing water system on site. There are currently 4-inch and 6-inch County water lines along Kukuna Street, located just north of the project site within the Kona Acres subdivision. There are also 12-inch and 6-inch County water lines within the O'oma Plantation subdivision. There is one 100,000 gallon County storage reservoir (Spillway Elevation = 950 feet) within Kona Acres, approximately 1,700 feet north of the project site (Figure 4-28).

#### **4.7.3.2 Water System Design, Potential Impacts and Mitigation**

The proposed water system was developed in accordance with the 2002 State of Hawaii Water System Standards. The design and construction of the proposed offsite water system and the onsite system within public rights-of-way will meet County Department of Water Supply Standards for future dedication.



**Figure 4-28**  
**PARTIAL NORTH KONA EXISTING WATER SYSTEM**  
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 Prepared for The Shopoff Group  
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The projected average water demand generated by the proposed development is approximately 120,000 gallons per day (gpd). All residences, as well as the park, will be served by the proposed water system. Water system calculations are provided in the Civil Infrastructure report in Appendix B.

### Proposed Off-Site Water System

Water source and storage for the project will be provided by a new well and reservoir to be located on the parcel identified as TMK 7-3-006: por. 036 and por. 37, approximately 0.86 miles east of the site (Figure 4-29).

A new 12-inch water line will connect the new reservoir to the existing 12-inch water line along Māmalahoa Highway. A second new 12-inch water line will extend westward from the 12-inch water line in Māmalahoa Highway, through parcels identified as TMK 7-3-007:042 and 043 to connect to the existing 12-inch water line in O'oma Plantation (TMK 7-3-007: 040 and 041). A 12-inch branch line through easements in O'oma Plantation will connect the project site to the existing 12-inch water line in O'oma Plantation.

The offsite water system improvements for the project will be provided by the owner for dedication to the County. Provision of water system capacity in excess of the water requirements for the Kula Nei project will be developed in the vicinity of Kula Nei.

### Proposed On-Site Water System

The water system will consist of water lines to provide potable water service to all parcels within the project site. The water system will connect to the existing 12-inch water line on Kauila Alanui Street. A 15-foot wide easement will be needed through lots in O'oma Homesteads. Stub outs will be provided at locations where onsite roads end at the property line and there is no existing water line.

The proposed development falls within the 950-foot, 1,150-foot, and 1,385-foot service zones. The majority of the site is located within the 1,150-foot service zone. A 0.1 mg reservoir will be required on-site to separate the 1,150-foot and 950-foot service zones (Figure 4-30). The water

distribution system will be looped in order to provide reliable flow and pressure. Distribution pipes consist primarily of 8-inch and 12-inch diameter pipes, based on County standards. Laterals sizes and locations to each lot will be determined during the design phase of the project.

#### Potential Impacts to Surface Water

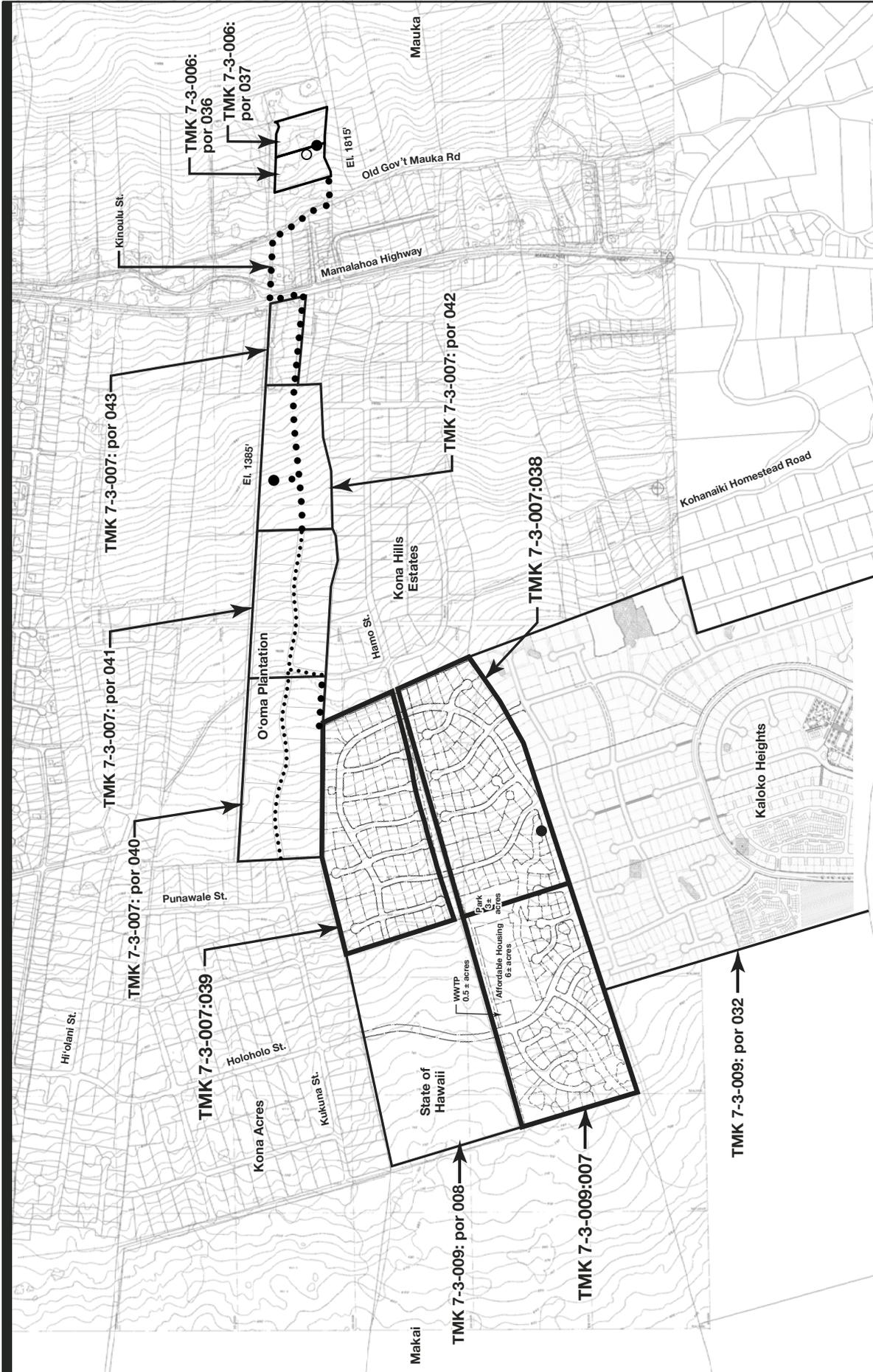
There are no surface water bodies on or near the project site. The implementation of a Best Management Plan Practices (BMP) plan during construction will prevent the discharge of sediment from the site. As areas of the site are developed, drainage systems will collect runoff and discharge it to the subsurface. The project will be designed such that peak runoff rates from the site will not increase as a result of site development. The project will have no significant short-term effects on surface waters.

#### Potential Impacts to Groundwater

Recent studies by Waimea Water Services Inc. (Groundwater Resources of North Hualalai-March 2003) and Glenn Bauer (A study of the Ground-Water Conditions in North and South Kona and South Kohala Districts, Island of Hawaii, 1991-2002, September 2003) represent the most ~~up-up-to-to~~-date information on the water resources of North Kona. A copy of Waimea Water Services' (WWS) report for the Kula Nei project is in Appendix O. WWS reviewed earlier work prepared by the USGS (Water-resources Investigation Report 99-4070, 1999), as well as searched files of the Commission on Water Resource Management (CWRM) well records.

The purpose of WWS' review was to estimate the quantity of groundwater resources available for development within or near the subject parcel and to recommend well locations for the long-term development.

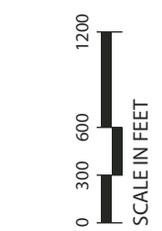
The file search documented only one potable well built within a 1/2 mile distance from TMK (3) 7-3-006: por. 036 (also referred to as the "DWS lot") and 3 freshwater wells~~-total~~ within a 2-mile distance along the Māmalahoa Highway from the parcel. Numerous wells have been permitted or proposed; however, no plans have been made to construct any of the other wells. Robert Lee received a permit in 1993 for a well below the west boundary of TMK (3) 7-3-006:



**Figure 4-29**  
**PROPOSED OFF-SITE WATER SYSTEM**  
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**LEGEND**

- Proposed Water Line
- ..... Existing Water Line
- Well Site
- Reservoir Site
- ▭ Project Area









por. 036, which was not built. The permit was renewed in 2005 (well # 4258-04) and lapsed as of January 2007. Other proposed well permits have since lapsed, as have a number of the previously proposed wells. The County Department of Water Supply is also proposing a well on TMK (3) 7-3-006: por. 036 to be incorporated as part of a well field.

The CWRM estimates the sustainable yield of the Keauhou Aquifer unit at 38 million gallons per day (mgd). ~~According to Bauer, he has estimated that~~ the total pumpage through 2003 at 10 mgd for potable use and 3 mgd for various brackish uses.

WWS estimated the recharge to the groundwater of North Hualalai in a March 2003 report. Figure 2 on page 2 of WWS's report in Appendix O summarizes the total estimated recharge from rainfall and fog drip. The units of interest are 14 (basal lens), 15 and 16 (high-level) where the basal lens consists primarily of brackish water (recharge = 7.0 mgd) and the high-level units (recharge = 11.5 mgd).

In addition to the natural recharge in the basal lens, at least 2.0 mgd treated sewage effluent is imported from south of Kailua Village, most of which is disposed of in a shallow pit near the Kealakehe landfill. Most of the household wastewater is discharged into cesspools in the vicinity of Māmalahoa Highway.

If it is assumed that the sustainable yield is 60% of the recharge, the estimated developable resources of the units 14, 15 and 16 would be about 4.2 mgd (brackish) and 6.9 mgd (fresh). These seem to be reasonable estimates for planning purposes. The present pumpage of the fresh (high-level) water is from three active wells used by the DWS and totals about 3 mgd.

There has been no accurate determination of the geologic structure(s) causing the high-level groundwater occurrence. However, indirect evidence indicates that it is most likely a result of major faulting on the western slopes of Hualalai. These faults are known to exist based on the side view ultrasound studies of the 1980s and early 1990s and the detection of major off-shore avalanches.

The CWRM sustainable yield estimates were created before the discovery of the high-level groundwater in the Kona Districts. As of this date the most likely cause for the occurrence of the high-level aquifers is associated with the evidence of both major faulting systems and thick dense trachyte or hawaiite lava flows or both in association.

In the North Kona Water Master Plan Report R-104 of DLNR 1995, it is estimated that the long-term recharge to the high-level aquifer for the area north of the Queen Liliuokalani Trust Land at Māmalahoa Highway is 13.4 mgd. This is an area approximately equal to study area 16 and is significantly higher than the 7.4 mgd (2,753 mgy) in the WWS study.

Precipitation on the site currently percolates to the underlying groundwater. This will continue to be the case during and after site development. The construction activities best management practices (BMP) will require the contractors to manage materials to prevent the discharge of pollutants to the ground. After development, landscape management practices will be applied in public areas to minimize the use of fertilizers and pesticides that could potentially enter the groundwater. Individual lot owners will be provided informational materials by the homeowners association Home Owners' Association to help educate them about the prudent use of pesticides and fertilizers on their property and to encourage Integrated Pest Management strategies to help ensure that no significant adverse impacts upon ground water result from their individual and collective actions. Based on the mitigative measures of conformance to a BMP plan during construction, it is anticipated that short-term impacts upon the local groundwater quality will not be significant.

## Potential Impacts to Water Supply System

Water supply infrastructure, including distribution lines and storage reservoirs will be constructed as approved by the County of Hawaii Department of Water Supply (DWS) and as needed for site development. No short-term detrimental impacts on the existing water supply system are anticipated as a result of the proposed project.

The long-term impacts of the project on the DWS water production and transmission system would be to increase capacity of the existing system. No long-term detrimental impacts on the existing water supply system are anticipated as a result of the proposed project.

### **4.7.4 Wastewater Collection, Treatment, and Disposal Facilities**

#### **4.7.4.1 Existing Conditions**

There is currently no existing wastewater system within the project site. The nearest existing wastewater system is approximately 2.6 miles south of the project site, near the intersection of Kealakehe Parkway and the proposed Maiiau Street. The existing County Wastewater Treatment Plant (WWTP) is located near Honokohau Marina and Small Boat Harbor.

#### **4.7.4.2 Wastewater System Design, Potential Impacts and Mitigation**

The projected average wastewater flow generated by the project is approximately 81,000 gpd. Two wastewater collection and treatment alternatives are under consideration for the proposed development.

The proposed wastewater collection systems for the two alternatives identified below were configured to maximize the use of gravity flow and minimize pumping requirements for wastewater conveyance. Gravity flow is preferable to pumped flow for the following reasons:

- Gravity flow is more reliable than pumped flow.
- The maintenance and energy costs of operating sewage pump stations are significant.
- Standby power is required for sewage pump stations.

- A potential undesirable consequence of a pumping system failure is a sewage spill.

#### Alternative 1: Extension to the County System

This alternative consists of connecting the onsite wastewater collection system to the County system at Kealakehe Parkway and Maiiau Street (Figures 4-31 and 4-32). The County collection system discharges to the County WWTP at Kealakehe.

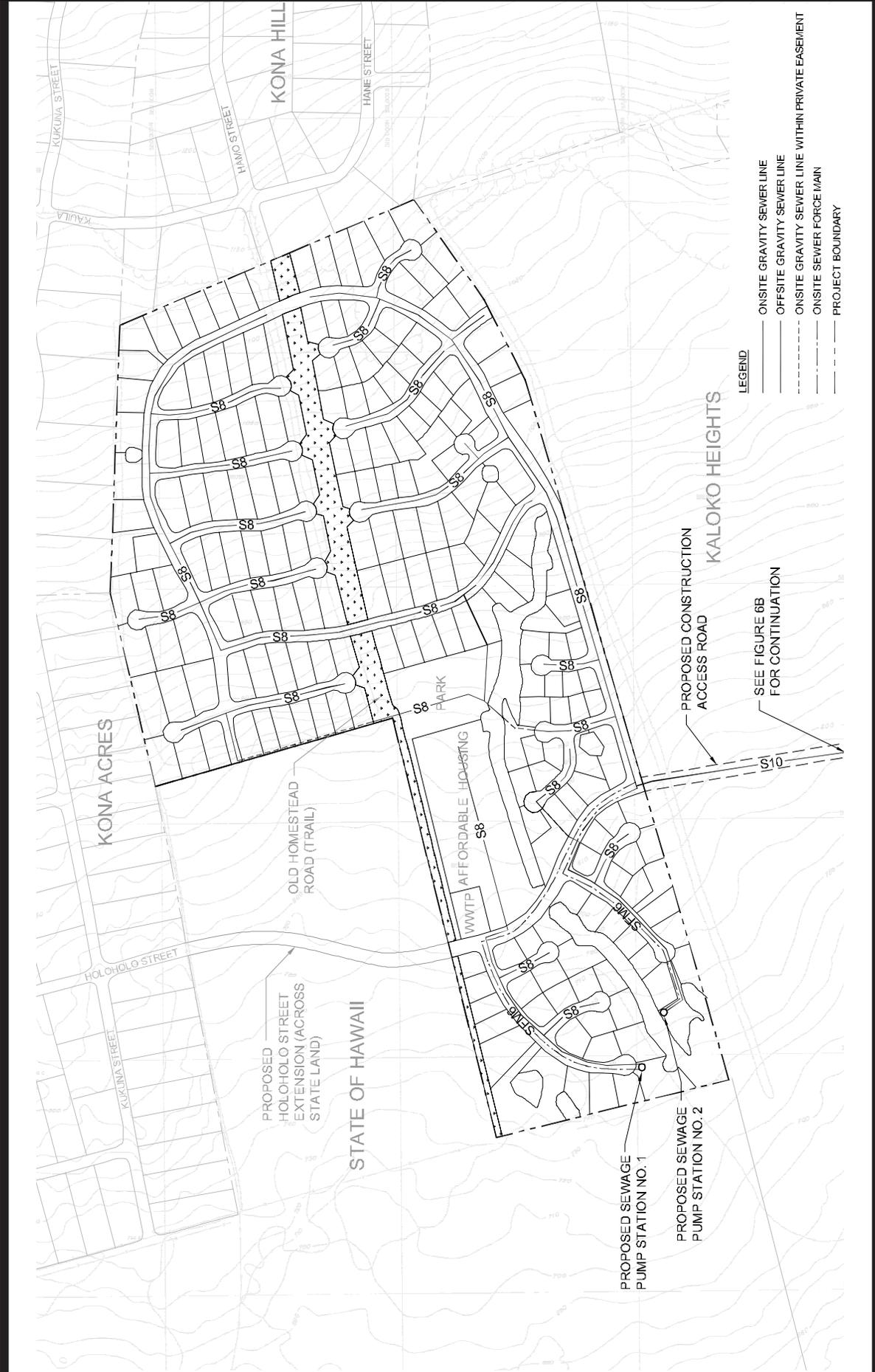
The on-site collection system would include two wastewater pump stations to pump sewage from areas that can not be served by gravity to the proposed gravity sewer line near the southern project boundary at Holoholo Street. Two pump stations are required because the areas served are divided by a lava tube preserve that precludes a sewer line crossing.

Off-site gravity sewer lines would be constructed south from the project site along the proposed Holoholo Street alignment, west along Hina Lani Street, and south along the proposed Maiiau Street alignment to an existing 18-inch County line at Kealakehe Parkway. The off-site sewer lines would be funded jointly with other developments that would be served by the new sewer lines.

#### Preferred Alternative: Individual Wastewater Systems (IWSs) and OnSite Wastewater Treatment and Disposal

This alternative consists of using IWSs for lots 10,000 square feet and larger. All remaining lots will be serviced by a private onsite collection system and WWTP to be operated by the ~~homeowners association~~ Home Owners' Association. See Figure 4-33 for a proposed layout of the wastewater system.

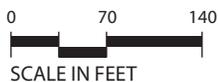
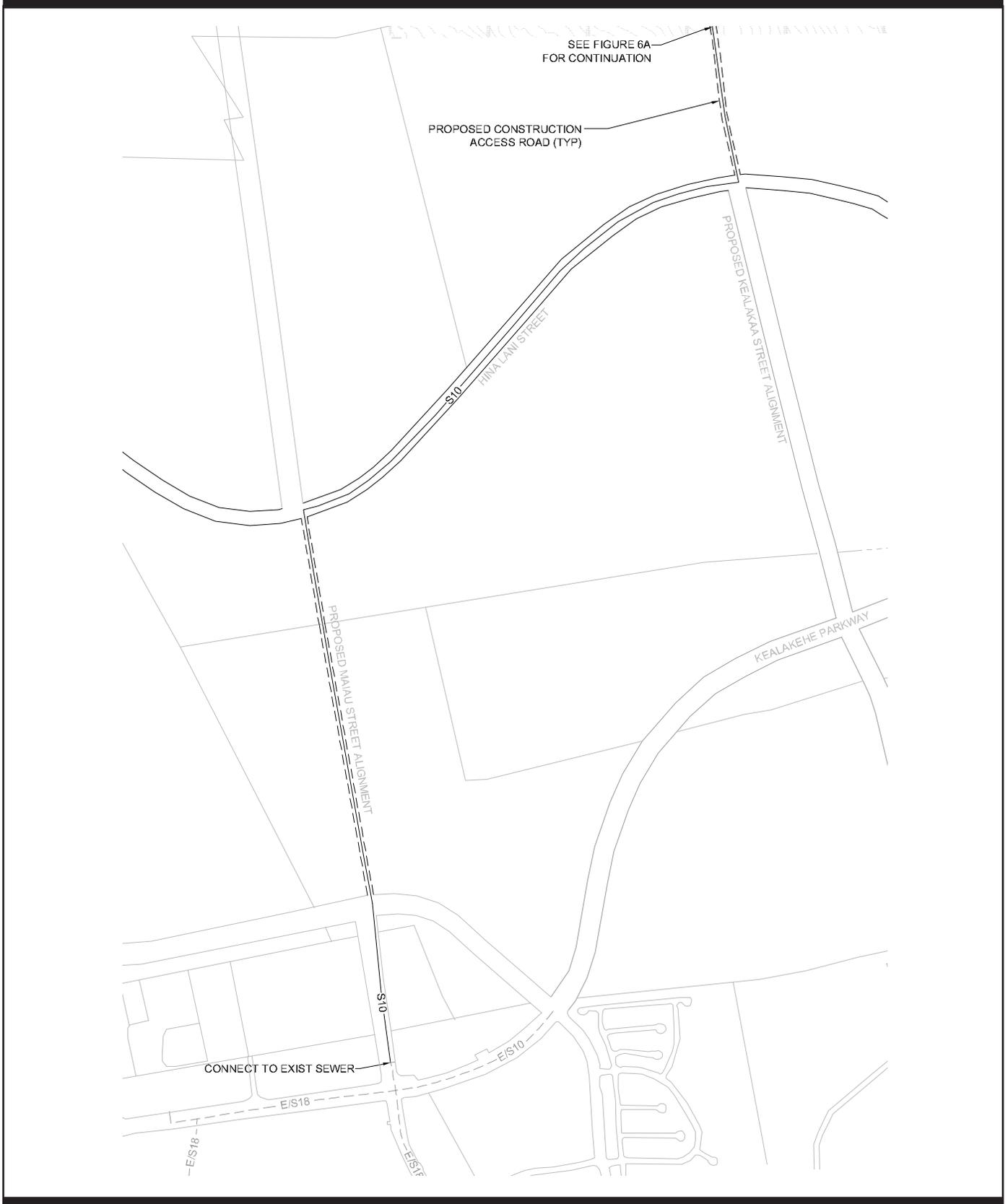
In this alternative, a private WWTP located onsite would provide service to approximately 80 residential units. The average flow to the WWTP would be approximately 25,200 gpd. The proposed wastewater treatment plant site would occupy approximately 0.5 acre, and a minimum of 2 acres would be reserved for an onsite leaching field for effluent disposal. A portion of the proposed park will be used for effluent disposal, which is allowable when done in compliance with State DOH and County standards.



**Figure 4-31**  
**SEWER PLAN — OPTION 1: OFF-SITE SEWER CONNECTION**  
 Kula Nei  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007



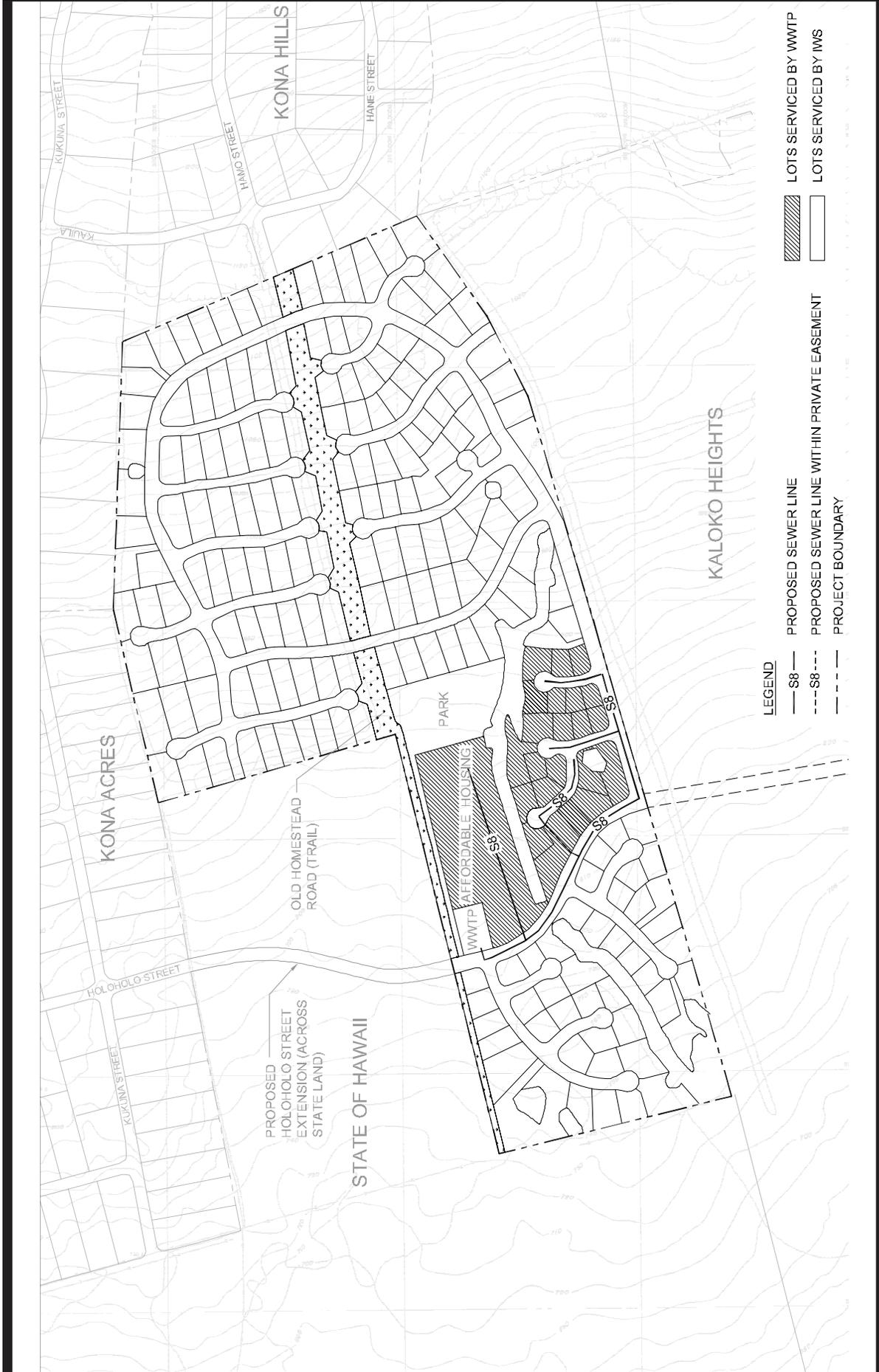




**Figure 4-32**  
**SEWER ALTERNATIVE 1: CONNECTION TO COUNTY WWTP**

Kula Nei  
North Kona, Hawaii  
Environmental Impact Statement  
Prepared for The Shopoff Group  
September 2007





**Figure 4-33**  
**SEWER PLAN—OPTION 2: ON-SITE WWTP/IWS**

North Kona, Hawaii  
Kula Nei  
Environmental Impact Statement  
Prepared for The Shopoff Group  
September 2007





The 10,000 SF and larger lots would each be served by an IWS. The typical IWS consists of a septic tank and leaching field on the lot that it serves. All IWSs will comply with the applicable State DOH regulations.

Wastewater solids in the form of sludge from the WWTP and septage from septic tanks will be removed periodically by pumper trucks for disposal at the County WWTP, located approximately 4.25 miles southwest of the project site along roads anticipated to be in service prior to project completion (2017). The maximum anticipated frequency of sludge removal would be weekly from the proposed WWTP and annually from individual septic tanks.

After processing by the County plant, dewatered biosolids would ultimately be disposed of by the County. The current practice is to dispose of the solids at the County sanitary landfill approximately 3.5 miles south of the Queen Ka‘ahumanu Highway/Waikoloa Road junction. The maximum rate of dewatered solids resulting from the proposed onsite WWTP is anticipated to be approximately 170 pounds per week. The maximum rate of dewatered solids resulting from the septic tank pumping at the project site is anticipated to be approximately 290 pounds per week.

The development of IWSs and a private onsite WWTP is the preferred wastewater management alternative based on the following factors:

- IWSs and Onsite Wastewater Treatment and Disposal is the lowest cost alternative. Alternative 1, Connection to the County System is expected to be the most expensive.
- IWSs and Onsite Wastewater Treatment and Disposal will have the most aesthetic appearance as it will not require the construction of multiple pump stations.
- IWSs and Onsite Wastewater Treatment and Disposal will have the least impact on neighboring properties.
- The ability to address future system needs will be easier since all wastewater will be disposed of and treated onsite.

## Potential Short Term Impacts

### Alternative 1: Extension to the County System

Extension of the County collection system to serve the proposed development would not have significant short-term impacts on the environment. Construction activities would conform to the applicable environmental requirements for storm water protection and mitigation of potential noise and dust impacts. County fees associated with permission to connect would be applied by the County to upgrade existing collection, treatment, and disposal facilities on an as-needed basis.

### Preferred Alternative: IWSs and a Private WWTP

The use of a combination of IWSs and onsite collection, treatment, and disposal will not impact any existing wastewater systems. Both IWSs and the proposed onsite wastewater treatment and disposal systems would conform to DOH requirements. Effluent that is discharged to the ground would conform to the applicable regulations and would not significantly affect the water quality of the underlying aquifer or regional coastal waters. The treated wastewater would be returned to the groundwater from which it was extracted for use.

The anticipated volume of treated wastewater will not likely be sufficient to warrant the construction of a separate non-potable transmission system for its reuse for irrigation.

## Potential Long-Term Impacts

The long-term impacts of each of the two wastewater system alternatives would not be significant because implementation of each alternative, including the treatment and disposal of wastewater, would be in conformance to the applicable regulations. Long-term impacts would be expected to be similar to the short-term impacts identified above, except that construction activities would be greatly reduced and would only be implemented on an as-needed basis to meet infrequent repair and replacement needs.

## 4.7.5 Electrical Service, Cable TV, and Telephone

### 4.7.5.1 Existing Conditions

#### Electrical Power

The Kula Nei subdivision project consists of 270 residential units, a park site, a deep well, reservoirs, and the use of sewer pump stations for Alternative 1 and the use of a 25,200 gpd wastewater treatment plant for Alternative 2. The anticipated demand for this project is 1,528 ~~Kw~~ kilowatt (kW) for Alternative 1, which utilizes connection to the existing County sewer system and the use of two pump stations within the project site. The anticipated demand for Alternative 2, which consists of a 25,200 gpd wastewater treatment plant and the use of septic tanks for a portion of homesites, is 1,603 ~~kilowatt~~ kW.

#### HELCO

The power capacity for the island of Hawaii is 220 ~~megawatt Mw~~ (MW), with a present maximum demand of 200 MW. Service for this project is anticipated to be from the existing HELCO's Huehue Substation which has a capacity of 7.5 ~~megawatt~~ MW. This project will require an upgrade of capacity from 7.5 ~~megawatt~~ MW to possibly 10.0 ~~megawatt~~ MW at the Huehue Substation.

HELCO has overhead facilities serving nearby subdivisions. HELCO anticipates extending their 12 kilovolt (kV) circuits for the Kula Nei subdivision site from Kukuna Street to the subdivision via the new access roadway. Step down transformers will convert 12 ~~kilovolt~~ kV circuits to user voltages of 120/240 volt single phase.

The upgrade of Huehue substation and the extension of existing electrical distribution systems will not create adverse conditions for HELCO. These improvements, when planned, are part of HELCO's normal expansion responsibilities.

### Cable Television

The Kula Nei project will be served by Oceanic Time Warner Cable. ~~Oceanic time Warner Cable~~, which has existing facilities in the Kona Acres area that could be extended to the Kula Nei project and WWTP via the Holoholo Street extension. Oceanic Time Warner Cable has sufficient capacity to provide ~~CATV~~ cable television to this project and will extend their fiber trunking to serve the Kula Nei area at their expense. Oceanic Time Warner Cable presently offers television, broadband internet service, and residential telephone service in this project area.

### Telephone

Hawaiian Telcom's existing system has the capacity to serve the project along Kukuna Street. Hawaiian Telcom proposes to extend their systems from Pole 10 on Kukuna Street via new support structures located along the Holoholo Street Extension to the Kula Nei subdivision.

## **4.7.6 Potential Impacts and Mitigation**

The proposed project will require upgrades of the existing electrical transmission system serving the region, as well as the installation of telecommunication facilities. All electrical and telecommunication system lines will be placed underground.

### **4.7.7 Solid Waste**

#### **4.7.7.1 Existing Conditions**

No solid waste service is currently required as the site is vacant.

#### **4.7.7.2 Potential Impacts and Mitigation**

The County of Hawai'i requires all solid waste (also known as rubbish), to be removed from all buildings and premises and disposed of at an approved solid waste disposal facility. All solid waste generated from the project will be taken to the West Hawai'i Landfill or County transfer station or recycled.

Over the approximately 7-year build out period, the average amount of solid waste generated by construction and operational activities is anticipated to range from 112 tons per year to 229 tons per year, and 493 tons per year, respectively.

No significant short-term or long term impacts on the existing solid waste collection and disposal systems or on the environment are anticipated as a result of the proposed development.

A preliminary solid waste management plan is provided in Appendix B.

## **4.8 SOCIAL AND ECONOMIC CHARACTERISTICS**

The Kula Nei project is located in a zone of West Hawai‘i where subdivisions of single-family homes have been developed since the 1970s. Housing development has responded to the growth of a tourism-based economy. In this section, socio-economic conditions and trends in Hawai‘i County and in the North Kona district are identified. Next, existing conditions in the immediate area near the project site – between Māmalahoa Highway and Queen Ka‘ahumanu Highway, and between Hina Lani Street to the south and the subdivisions with access to Kaiminani Street to the north – are discussed. Community issues and concerns are documented as well.

### **4.8.1 Existing Conditions, North Kona**

#### **Economy**

For much of the twentieth century, West Hawai‘i was an agricultural area, with coffee (from South Kona), sugar (from North Kohala) and cattle (from the uplands of South Kohala) its major products. Major public facilities for West Hawai‘i – the hospital and the area’s first high school – were located in Kealahou, in the South Kona district.

The visitor industry in North Kona grew after statehood, and the district had the majority of the island’s visitor units (as shown for 1980, in Table 4-30). By 1990, however, the South Kohala coast resorts had become popular destinations. With the expansion of the coastal resorts, West Hawai‘i became more dependent on tourism. Kailua-Kona is now the regional center, with commercial, industrial and resort facilities. The North Kona district has seen continuing increases in population, visitor numbers, and commercial space. As of 2002, Kailua-Kona had

165 retail establishments, with annual gross sales of \$410 million, 24 percent of the island total. The retail workforce in Kailua amounted to 2,174 persons.

**Table 4-30: HAWAII COUNTY SOCIO-ECONOMIC INDICATORS**

	1980	1990	2000	2005
Hawaii County				
Resident population	92,053	120,317	148,677	167,293
Jobcount	37,150	49,000	56,000	64,500
Unemployment rate	6.3%	3.5%	4.8%	3.3%
Average visitor census				
Island	7,195	16,698	21,891	27,579
West Hawaii		13,502	17,784	21,940
Visitor units	6,299	8,952	9,774	11,351
Hotel occupancy rate	51.0%	61.7%	72.8%	72.2%
North Kona district				
Resident population	13,748	22,284	28,543	NA
Share of county	14.9%	18.5%	19.2%	NA
Visitor units	3,774	4,096	4,295	5,053
Share of county	59.9%	45.8%	43.9%	44.5%
Hotel occupancy rate	59.0%	66.8%	72.6%	NA

**SOURCES:** Hawaii State Data Book, 1985 and 2005; historical and current statistics posted by Hawaii State Department of Labor and Industrial Relations, available at [www.hiwi.org](http://www.hiwi.org); Visitor Plant Inventory conducted by Hawaii Visitors Bureau, and later by DBEDT.

Islandwide, the ratio of visitors to residents is about 1 to 6. In West Hawai‘i, the ratio is about 1 to 3. (In 2000, West Hawai‘i had 56,301 residents and an average visitor census of 17,784.)

In 2000, approximately 10,000 persons worked in Kailua-Kona. Of these, 70% commuted from other places on the island.<sup>4</sup>

In all the districts of West Hawai‘i, incomes tended to be above the County average in 1999. South Kohala had the highest average income. The share of the population with incomes below poverty level was low in both North Kona and South Kohala, as shown in Table 4-31.

<sup>4</sup> This Census calculation is for the Kailua-Kona Census Designated Place (CDP). The project site is located in the Kalaoa CDP, i.e., residents of the project site and nearby subdivisions would count as “commuters” to Kailua-Kona (US Census data calculated by DBEDT, available at <http://www.hawaii.gov/dbedt/info/census/Folder.2005-10-13.2927/DaytimePop>).

**Table 4-31: INCOME AND POVERTY CHARACTERISTICS FROM 2000 CENSUS, HAWAI'I COUNTY AND WEST HAWAI'I DISTRICTS**

	Hawaii County	South Kona	North Kona	South Kohala	North Kohala
<b>INCOME AND POVERTY</b>					
Household income in 1999					
Under \$25,000	30.9%	29.3%	22.2%	17.5%	25.3%
\$25,000 to \$49,999	29.8%	28.3%	30.8%	30.7%	26.9%
\$50,000 to \$74,999	18.4%	18.2%	20.0%	22.7%	24.1%
\$75,000 to \$99,999	10.4%	12.8%	11.6%	15.1%	11.8%
\$100,000 to \$199,999	8.7%	9.2%	12.2%	10.8%	10.2%
\$200,000 and above	1.8%	2.2%	3.3%	3.2%	2.2%
Median Household income	\$39,805	\$42,058	\$47,610	\$51,379	\$47,733
Poverty Status					
Persons below poverty line	22,821	1,084	2,756	1,100	641
Share of total population below poverty line	15.7%	12.7%	9.7%	8.5%	12.1%
Age distribution, persons below poverty line					
0 to 17 years	35.9%	31.8%	32.7%	41.9%	27.3%
18 to 64 years	58.0%	62.4%	60.9%	53.5%	61.9%
65 to 74 years	3.2%	3.0%	3.6%	3.1%	3.0%
75 years and over	2.9%	2.9%	2.9%	1.5%	7.8%

SOURCE: 2000 US Census, SF3: data from a sample of households

The next Census table (Table 4-32) shows that many households in West Hawai'i pay a large part of their income for housing costs. It also indicates that as much as a quarter of the North Kona housing stock is vacant. While a few units will simply be vacant for sale or rent, most of those listed as vacant are reserved for use by non-residents. Both rents and owners' housing costs are higher in North Kona and South Kohala than elsewhere in West Hawai'i.

**Table 4-32: HOUSING UNITS AND COST FROM 2000 CENSUS, HAWAI‘I COUNTY AND WEST HAWAI‘I DISTRICTS**

	Hawaii County	South Kona	North Kona	South Kohala	North Kohala
<b>HOUSING</b>					
Housing Units (1)					
Occupied	52,985	3,113	10,522	4,648	1,751
Vacant	9,689	401	3,438	1,146	171
Vacant for seasonal use	5,101	218	2,753	847	58
Vacant share of all units	15.5%	11.4%	24.6%	19.8%	8.9%
Tenure of occupied housing units					
Owner occupied	64.5%	62.2%	58.5%	58.9%	70.4%
Renter occupied	35.5%	37.8%	41.5%	41.1%	29.6%
Average household size					
	2.75	2.76	2.70	2.81	2.97
Housing Costs (2)					
Median contract rent	\$553	\$506	\$683	\$724	\$639
Median gross rent	\$645	\$572	\$745	\$811	\$739
Owner-occupant housing costs					
Median, for owners with a mortgage	\$1,133	\$1,323	\$1,423	\$1,385	\$1,245
Renters, paying 30% to 39% of income					
	2.9%	3.1%	3.6%	2.2%	2.4%
Renters, paying > 40% of income					
	4.6%	6.6%	2.3%	4.0%	4.0%
Owners, with mortgage, paying 30% to 39% of income					
	10.1%	9.2%	13.3%	12.8%	11.2%
Owners, with mortgage, paying 40% + of income					
	13.6%	14.9%	19.1%	21.3%	12.1%

**NOTES:** (1) 2000 US Census, SF 1, from all households.  
(2) 2000 Census, SF 3, from a sample of households.

### Population and Housing

The population of the island of Hawai‘i has been growing for decades, but the rate of growth has been slowing. North Kona has seen a faster rate of increase than the island as a whole, although Puna’s and South Kohala’s populations have increased at a faster rate. (See Table 4-33 for both historical and projected population by district.)

If historical trends continue, the North Kona population will exceed 43,700 in 2020.

**Table 4-33: HISTORICAL AND PROJECTED POPULATION, HAWAI'I COUNTY AND DISTRICTS, TO 2030**

	<i>Historical</i>			<i>Projected</i>		
	1980	1990	2000	2010	2020	2030
Puna	11,751	20,781	31,335	40,873	50,665	60,457
South Hilo	42,278	44,639	47,386	49,876	52,430	54,984
North Hilo	1,679	1,541	1,720	1,688	1,708	1,729
Hamakua	5,128	5,545	6,108	6,574	7,064	7,554
North Kohala	3,249	4,291	6,038	7,315	8,710	10,104
South Kohala	4,607	9,140	13,131	17,483	21,745	26,007
North Kona	13,748	22,284	28,543	36,320	43,718	51,115
South Kona	5,914	7,658	8,589	10,062	11,400	12,737
Ka'u	3,699	4,438	5,827	6,783	7,847	8,911
Hawaii County	92,053	120,317	148,677	176,973	205,285	233,597
<b>Average Annual Rate of Change</b>		<b>1980s</b>	<b>1990s</b>	<b>2000s</b>	<b>2010s</b>	<b>2020s</b>
Puna		5.9%	4.2%	2.7%	2.2%	1.8%
South Hilo		0.5%	0.6%	0.5%	0.5%	0.5%
North Hilo		-0.9%	1.1%	-0.2%	0.1%	0.1%
Hamakua		0.8%	1.0%	0.7%	0.7%	0.7%
North Kohala		2.8%	3.5%	1.9%	1.8%	1.5%
South Kohala		7.1%	3.7%	2.9%	2.2%	1.8%
North Kona		4.9%	2.5%	2.4%	1.9%	1.6%
South Kona		2.6%	1.2%	1.6%	1.3%	1.1%
Ka'u		1.8%	2.8%	1.5%	1.5%	1.3%
Hawaii County		2.7%	2.1%	1.8%	1.5%	1.3%

NOTES: District projections were obtained by extending linear trends from historical (1980-2000) ones. The result was a total slightly larger than the official population projection. All district population estimates were then adjusted downward so that the total population for the districts equals the County total.

SOURCE: DBEDT, 2004, adapted by Belt Collins Hawaii.

The populations of North Kona and South Kohala include a larger share of recent U.S. mainland in-migrants than the island population. The ethnic distribution reported from these districts includes a larger share of ~~Whites~~ caucasians than islandwide and in the other West Hawai'i districts.

**Table 4-34: RESIDENTIAL STABILITY AND IN-MIGRATION, HAWAII COUNTY AND WEST HAWAII DISTRICTS, FROM 2000 CENSUS**

	Hawaii County	South Kona	North Kona	South Kohala	North Kohala
Residence in 1995 for Persons 5 and Older					
Same house	80,654	5,224	13,341	5,638	3,493
Different house, same county	37,019	1,768	7,705	3,802	1,094
Different county in HI	6,687	283	941	946	202
Different state	11,923	693	3,874	1,344	702
Outside the US	3,510	117	879	492	210
Percentages					
Same house	57.7%	64.6%	49.9%	46.1%	61.3%
Different house, same county	26.5%	21.9%	28.8%	31.1%	19.2%
Different county in HI	4.8%	3.5%	3.5%	7.7%	3.5%
Different state	8.5%	8.6%	14.5%	11.0%	12.3%
Outside the US	2.5%	1.4%	3.3%	4.0%	3.7%

SOURCE: 2000 US Census, SF3: data required from a sample of households

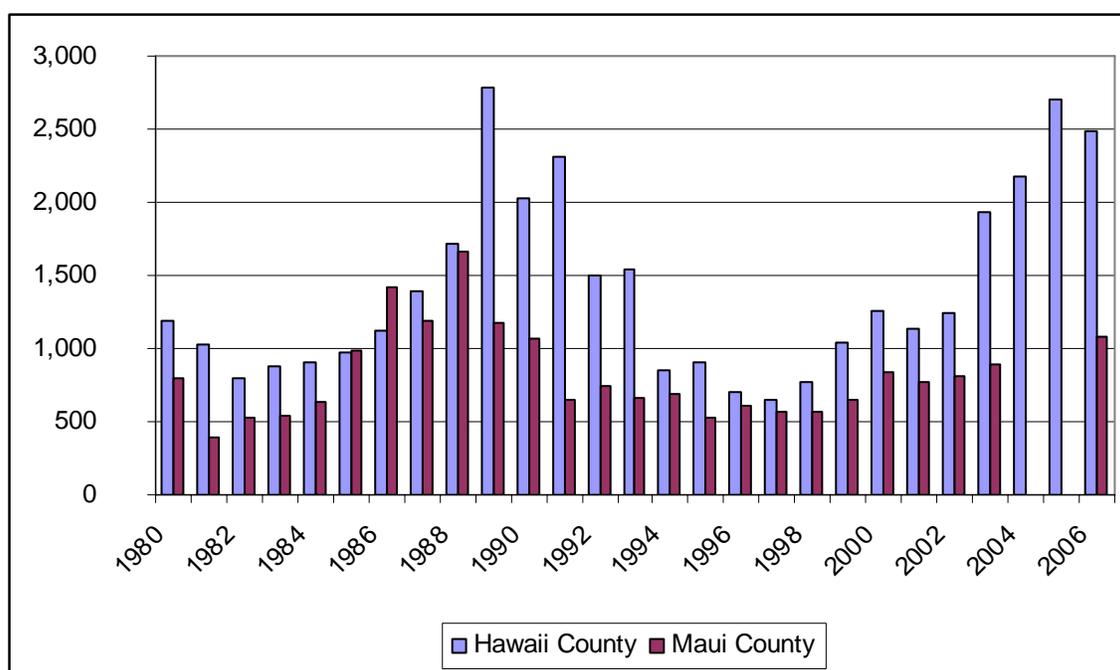
**Table 4-35: DEMOGRAPHIC CHARACTERISTICS, HAWAII COUNTY AND WEST HAWAII DISTRICTS, FROM 2000 CENSUS**

	Hawaii County	South Kona	North Kona	South Kohala	North Kohala
<b>POPULATION</b>					
Total Population	148,677	8,589	28,543	13,131	6,038
Male	74,499	4,327	14,349	6,545	3,039
Female	74,178	4,262	14,194	6,586	2,999
Age Groups					
Under 5 years	9,130	482	1,830	891	349
5 to 14 years	22,601	1,291	3,932	2,303	846
15 to 19 years	11,089	640	1,835	909	461
20 to 64 years	85,738	5,039	17,581	7,842	3,574
65 to 74 years	10,923	652	1,916	717	456
75 and over	9,196	485	1,449	469	352
Median Age	38.6	41.2	39.4	36.2	38.2
Race (Federal classification)					
White alone	31.5%	34.1%	47.1%	38.8%	32.8%
Black or African American alone	0.5%	0.4%	0.4%	0.4%	0.6%
American Indian and Alaska Native alone	0.4%	0.5%	0.5%	0.2%	0.4%
Asian alone	26.7%	24.1%	16.3%	18.1%	24.6%
Native Hawaiian and Other Pacific Islander alone	11.2%	12.1%	10.7%	12.8%	9.5%
Some other race alone	1.1%	1.5%	1.4%	1.0%	1.2%
Two or more races	28.4%	27.4%	23.5%	28.8%	31.1%

SOURCE: 2000 US Census, SF1: data required from all households.

Since 1980, about 38,000 permits were issued for new single-family homes in Hawai‘i County. Figure 4-34 shows that construction has gone through cycles, with much new housing built in economic booms. Compared to Maui, Hawai‘i County’s volume of new construction during boom times has been much larger, even though similar cycles are evident in both cases. Hawai‘i County has amassed a larger housing inventory over time. (As of mid-2005, Hawai‘i County had an estimated total of 71,984 single-family and multifamily units.)

**Figure 4-34: New Single Family Residential Permits, 1980 - 2006**



SOURCE: Time series data from the Hawai‘i State Data Book, available at [http://www.hawaii.gov/dbedt/info/economic/databook/Data\\_Book\\_time\\_series/](http://www.hawaii.gov/dbedt/info/economic/databook/Data_Book_time_series/).

The housing stock is not used only by residents. In Hawai‘i County in 2006, 9.9 percent of single family properties and 16 percent of residential condominiums had out-of-state owners (SMS 2007). In addition, some units were locally owned but placed in visitor rental pools.

Non-residents are disproportionately involved in the real estate market. From 2001 to 2005, about 35 percent of Hawai‘i County single-family home sales and 75 percent of condominium sales had out-of-state buyers (Peterson 2005). Consequently, market prices reflect both local and

non-local buying power, and the median home price is much higher than the average household can afford. In 2006, the ratio of the price affordable to a family with the median income to the median sales price was 0.69 in Hawai'i County (SMS 2007).

Evidence of resident demand for new housing units is abundant. The housing market continues to be active, even though prices have reached levels that many families cannot afford. Based on a 2006 survey of 1,102 respondents in Hawai'i County, SMS estimates that 25,769 households in Hawai'i County (42.1% of existing households) expect to move in the future. Of those, about 70% would prefer to own their next home.

About a third of Hawai'i County respondents expecting to move named North Kona as their preferred destination. Total demand for housing in North Kona from Hawai'i residents statewide is estimated as about 7,200 households (as of 2006, including all those expecting to move at some time in the future).

#### **4.8.2 Existing Conditions, Immediate Area**

The subdivisions nearest the project site fall within Block Group 2 of Census Tract 215.01, as shown in Figure 4-35.

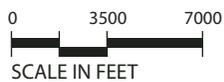
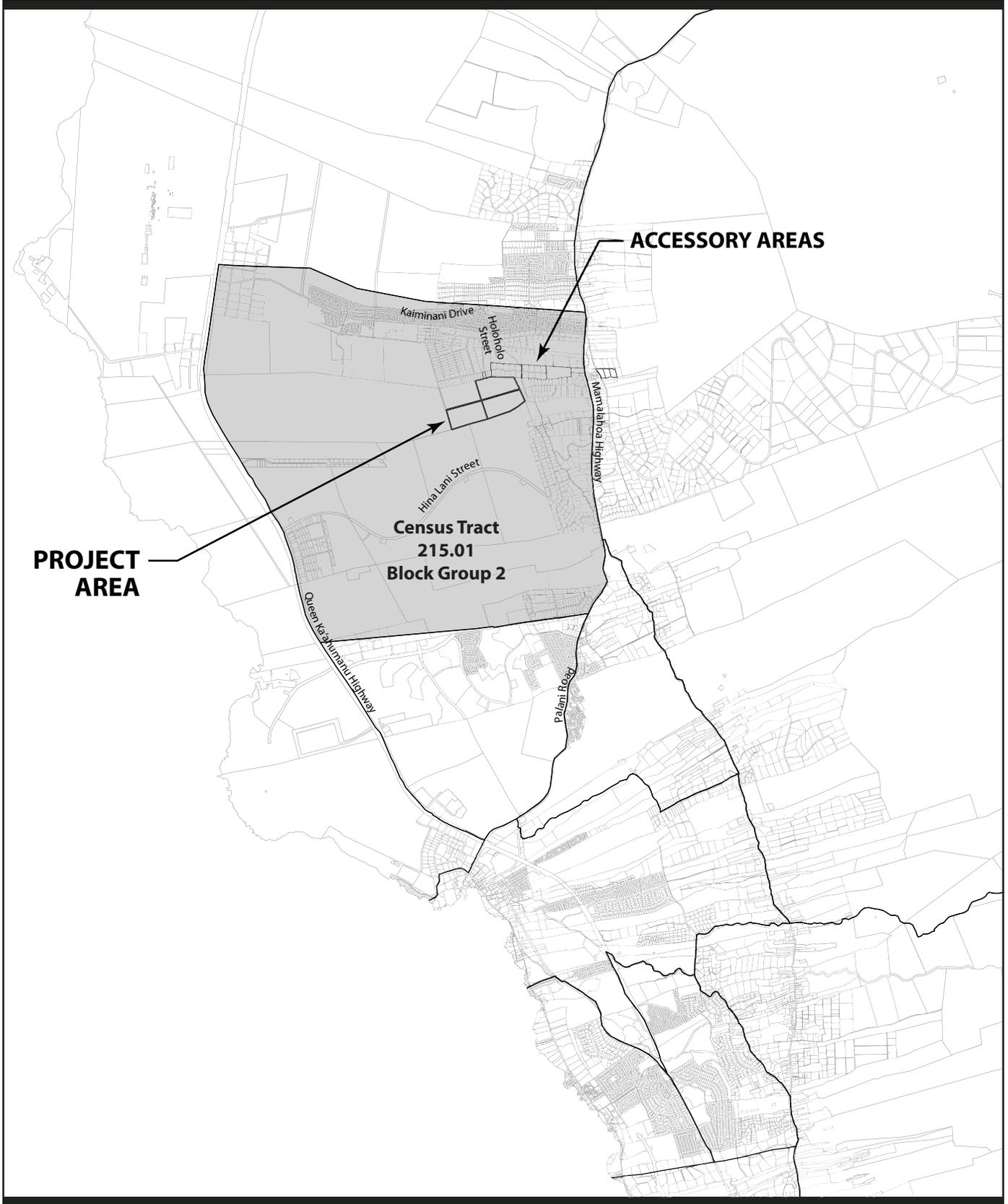
##### **Economy**

The region's visitor plant extends along the coast, and retail activity is centered on the intersection of Queen Ka'ahumanu Highway with Palani Road. The immediate area near the project site is occupied by single-family homes. A new grocery store on Palani Road stands out as a commercial venue. Further away, the Kaloko industrial area includes the nearest "big box" store as well as a range of services. It can be reached by Hina Lani Street as well as the Queen Ka'ahumanu Highway.

In the immediate area, public facilities are limited to churches, also on Palani Road. Schools are located closer to Kailua, in the Kealakaa Street complex (reached by Palani Road) and on Kealakehe Parkway, about two miles from the project site.<sup>5</sup> Local community facilities are

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<sup>5</sup> The Kealakehe complex schools are in close proximity. New roads that will link the schools are planned.



**Figure 4-35  
IMMEDIATE AREA**

Kula Nei  
North Kona, Hawaii  
Environmental Impact Statement  
Prepared for The Shopoff Group  
September 2007



limited to a fire station at *makai* end of the Kona Palisades and a small park in the Lokahi Makai development.

Residents of Block Group 2 of Census Tract 215.01, the area surrounding the project site, have higher incomes than households in other tracts of North Kona or in the other block groups of tract 215.01. The incidence of poverty is also low in the immediate project area.<sup>6</sup>

**Table 4-36: INCOME AND PROVERTY CHARACTERISTICS, NORTH KONA DISTRICT AND SUBAREAS FROM 2000 CENSUS**

	North Kona District	Kalaoa CT 215.01	Kalaoa 215.01 BG 1	Kalaoa 215.01 BG 2	Kalaoa 215.01 BG 3	Hualalai CT 215.02	Kailua-Kona CT 216.01	Holualoa CT 216.02	Kahaluu-Keauhou CT 215.03
<b>INCOME AND POVERTY</b>									
Household income in 1999									
Under \$25,000	22.2%	18.6%	16.9%	11.9%	28.2%	25.4%	24.7%	18.1%	28.2%
\$25,000 to \$49,999	30.8%	31.8%	36.6%	26.3%	33.4%	27.9%	36.2%	29.0%	25.4%
\$50,000 to \$74,999	20.0%	21.4%	18.1%	24.3%	21.5%	16.9%	20.6%	19.1%	20.0%
\$75,000 to \$99,999	11.6%	13.8%	12.8%	17.3%	10.9%	9.8%	9.3%	13.1%	10.4%
\$100,000 to \$199,999	12.2%	11.0%	11.7%	17.3%	2.4%	16.2%	7.4%	17.7%	10.7%
\$200,000 and above	3.3%	3.3%	3.8%	3.0%	3.0%	3.9%	1.8%	3.0%	5.3%
Median Household income	\$47,610	\$49,772	\$48,415	\$61,181	\$41,086	\$46,100	\$40,765	\$51,590	\$45,076
Share of total population below poverty line	9.7%	8.5%	7.8%	3.6%	14.4%	9.5%	8.7%	7.5%	17.1%
Age distribution, persons below poverty line									
0 to 17 years	32.7%	34.9%	37.5%	18.5%	37.9%	33.3%	27.7%	17.7%	42.0%
18 to 64 years	60.9%	60.3%	53.0%	81.5%	58.5%	56.6%	67.8%	69.4%	53.7%
65 to 74 years	3.6%	2.0%	4.7%	0.0%	1.1%	8.9%	0.0%	6.1%	3.9%
75 years and over	2.9%	2.8%	4.7%	0.0%	2.5%	1.1%	4.4%	6.8%	0.4%

Block Group 3, to the south, includes public housing areas. Its residents have lower incomes, on average, than the people of the other subareas shown above. Block Group 3 residents are also much more likely to report themselves as Native Hawaiian (22.6% of respondents) or of two or more races (37.6%) than residents of the other subareas.

In 2000, residents of the immediate area were more likely than the residents of other subareas to work in construction (17.3% of workers, compared to 8.7% for the district as a whole), retail trade (20.0%, compared to 13.3%), administrative services (7.9% compared to 5.7%) and professional services (7.2% compared to 5.4%). The industry with the largest representation in the immediate area was accommodations and food services (20.7%) – as in ~~the all~~ other subareas of the district except Keauhou.

<sup>6</sup> Block Group 2 is shown as the “Immediate Area” in Figure \*4-35. Block Group 3 is concentrated on the Queen Liliuokalani Village area around Kealakaa Street. Block Group 1 covers a larger area, the remainder of the Census Tract.

## Population and Housing

In 2000, some 3,300 people lived in the immediate area. The median age was 42 years, higher than for the district and the other subareas studied. In 2000, fewer than 50 housing units were vacant, held for seasonal use, in the immediate area (of a total of 1,243 units). Homeownership was more prevalent than in other subareas. The residents of 73.8 percent of occupied housing units were homeowners (as compared to 58.5% for the district as a whole).

Both rents and owners' housing costs were high in the immediate area. Over half of the renters in the area paid 30% or more of their income for housing. More than a third of homeowners paid 30% or more of their income for housing as well. These figures are high, but are also found in other subareas of North Kona, as shown in Table 4-37.

**Table 4-37: HOUSING COSTS NORTH KONA DISTRICT AND SUBAREAS FROM 2000 CENSUS**

	North Kona District	Kalaoa CT 215.01	Kalaoa 215.01 BG 1	Kalaoa 215.01 BG 2	Kalaoa 215.01 BG 3	Hualalai CT 215.02	Kailua-Kona CT 216.01	Holualoa CT 216.02	Kahaluu-Keauhou CT 215.03
<b>Households (1)</b>									
Number	10,522	3,142	1,063	1,159	920	1,419	2,331	2,040	1,590
Persons in households	28,410	9,488	3,087	3,301	3,100	3,688	5,974	5,268	3,992
Average household size	2.70	3.02	2.90	2.85	3.37	2.60	2.56	2.58	2.51
<b>Housing Costs (2)</b>									
Median Contract rent	\$683	\$740	\$920	\$998	\$509	\$577	\$0	\$745	\$694
Median Gross rent	\$745	\$822	\$959	\$1,158	\$583	\$638	\$727	\$828	\$746
<b>Owner-occupant housing costs</b>									
Median, for owners with a mortgage	\$1,423	\$1,392	\$1,285	\$1,630	\$1,223	\$1,602	\$1,301	\$1,532	\$1,493
<b>Share of households with high housing costs</b>									
Renters paying 30% to 39% of income	13.9%	19.3%	13.1%	16.2%	26.9%	9.8%	16.8%	8.0%	8.7%
Renters paying > 40% of income	34.5%	35.0%	41.8%	37.8%	27.6%	40.2%	35.4%	22.6%	41.7%
Owners paying 30% to 39% of income	13.5%	10.4%	13.2%	10.6%	6.9%	5.2%	16.6%	25.6%	6.1%
Owners paying > 40% of income	24.9%	25.0%	23.9%	27.9%	22.2%	27.6%	21.2%	28.2%	22.3%

**NOTES:**

- (1) 2000 US Census, SF 1, from all households.
- (2) 2000 Census, SF 3, from a sample of households.

Of 15,500 residential properties in the North Kona District, 2,900 are located in TMK zone 3-7-3 that runs from Keahole Airport through the Kaloko area along the coast, and extends inland, including Kaiminani Drive and Kaloko Drive. Few homes were built in the zone until 1970. Home construction has been steady since the 1970s, with about a quarter of the housing stock

built in each decade (including 21% built from 2000 through 2006).<sup>7</sup> Assessed values of newer properties are considerably higher than those of ones built earlier:

**Table 4-38: 2006 ASSESSED VALUE  
HOMES IN ZONE 3-7-3**

<b>Decade home built:</b>	<b>Number of units</b>	<b>Average building value</b>
1970s	794	\$116,773
1980s	819	\$166,463
1990s	629	\$218,307
2000-2006	606	\$269,591

NOTE: Home values are set by County of Hawai'i assessors, and include both building value (shown above) and land value. The information used here was downloaded from Hawai'i Information Service, Inc. files and analyzed by Belt Collins Hawaii in April 2007.

With many homes built since 2000, the immediate area has changed since ~~2000~~then. (The large number of residents paying a great deal for housing has likely not changed, since residents of new subdivisions are especially likely to strain their financial resources to be in new homes.)

In Kona Palisades, the Lokahi Makai project of nearly 200 units has stood out in recent years. First, it is a single development in an area in which custom homes and smaller projects are the norm. The homes are designed to be energy-efficient. Next, the developer ~~has~~ also built a 108-unit affordable condominium project, Seascape, in 2006, using modular home construction. These projects are located near Kaiminani Street, about 1.5 miles *makai* of the project site.

As of 2006, approximately 61.7% of homes in the TMK 3-7-3 zone were registered as occupied by the owners.

South of the project site is a large area zoned for residential development known as Kaloko Heights. Stanford Carr Development is planning a mixed-income residential subdivision with as many as 1,500 housing units on 402 acres. Although infrastructure work remains to be done, plans call for delivery of the first housing units in 2007 (personal communication, Paul Kay,

<sup>7</sup> Analysis by Belt Collins Hawaii of data from real property tax records, compiled by Hawai'i Information Services, Inc.

August 2006). Just north of Kula Nei is ~~a~~the subdivision O‘oma Plantation, consisting of 19 two-acre lots. Initial lot sales are currently being advertised.

### 4.8.3 Community Issues and Concerns

Information about North Kona residents’ view of their community and concerns about the area’s future is available from outreach efforts by Hawai‘i County, conducted as part of the Community Plan process from debates about proposed new development, from survey data, and from interviews by Belt Collins Hawaii staff. Table 4-39 lists participants in the interview process. They were asked to shed light on community viewpoints, not to take a stand for or against the project.

**Table 4-39: PERSONS INTERVIEWED ABOUT COMMUNITY ISSUES AND CONCERNS**

Interviewees were selected to learn of a variety of viewpoints in the North Kona community and especially the neighborhoods closest to Kula Nei. Their affiliations are listed so readers can judge whether an appropriate range of stakeholder groups was contacted. Mention of persons or organizations in this list does not imply that they take any position with regard to the project.		
Bimo Ron	Akiona Aronson	Fire Rescue Specialist, Kailua Fire Station, long-time Kona resident Makalei Heights resident, President, Kona-Kohala Chamber of Commerce, President/Owner Kona Coast Realty
Joel	Gimpel	Kona Traffic Safety Committee, 10-year Big Island resident
Laurel	Gregory	Librarian at University of Hawaii, West Hawaii
Dale	Landrum	Kona Acres resident, builder
Vivian	Landrum	Executive Director, Kona-Kohala Chamber of Commerce, Kona Acres resident
Wally	Lau	Executive Director, Neighborhood Place of Kona, Kona Palisades resident
Gretchen	Lawson	President/CEO Arc of Kona, Kona Community Plan Steering Committee
Jim	Lightner	Professor, University of Hawaii, West Hawaii
Burke	Matsuyama	Kona business owner, developer
Wil	Murakami	Principal, Kealakehe High School
Greg	Ogin	Vice President, Commercial Division - Clark Realty Corporation, Chairman of the Kona YMCA Board of Directors
Larry	Peckham	Real Estate Appraiser, Kona resident
J. Curtis	Tyler III	Kona Community Plan Steering Committee; past member, Hawaii County Council Kona Hills Estates resident
Elaine	Watai	Vice President, Kealakehe Neighborhood Watch

### Issues Independent of Project

West Hawai‘i residents have repeatedly pointed to traffic congestion as a problem affecting their quality of life. The problem is exacerbated by the high cost of housing near Kailua-Kona. Many workforce families are living in such areas as Hawai‘i Ocean View Estates, far from jobs, and commuting daily to work. The idea that development is eroding residents’ quality of life has motivated protests over new development proposals along Queen Ka‘ahumanu Highway and led to demands that the State and County move quickly to improve major roadways.

Residents’ urgent demands for road improvements have been heard in roadside demonstrations, meetings with County authorities, and hearings on development proposals.

A small survey of registered voters in West Hawai‘i suggests that concerns about education and housing are also prominent:

**Table 4-40: SURVEY RESPONSES, 2006,  
HAWAI‘I AND WEST HAWAI‘I SENATE DISTRICT**

	State	County Average	District 3
Most important issue facing the State:			
Traffic	31%	15%	30%
Public education	29%	27%	35%
Housing	29%	24%	32%
Economy	24%	25%	25%
Crime, drugs	15%	17%	10%
Resource management	11%	11%	23%
Political reform	9%	11%	13%
Gas	8%	13%	7%

**NOTE:** State results are for 1,500 voters called in August 2006, with results weighted by island. "County Average" simply averages results for the three Hawaii County Senatorial districts. District 3 includes West Hawaii and part of Ka'u district. Sample size per Senatorial district is only 60 respondents.

**SOURCE:** "The People's Pulse," Summer-Fall 2006, posted at [www.omnitrakgroup.com](http://www.omnitrakgroup.com)

A separate survey, dealing with issues that might be seen as tourism-related, showed the cost of housing to be crucial to residents throughout Hawai‘i. Perhaps the most striking finding in Table 4-40 is that crime is much less of a perceived problem for West Hawai‘i residents than for people in other areas.

**Table 4-41: ISSUES OF CONCERN TO RESIDENTS, WEST HAWAI‘I, COUNTY AND STATE, 2006**

	State	Hawaii County	West Hawaii
<i>% of respondents identifying issue as "Big problem"</i>			
Cost of housing	73%	67%	66%
Average income for residents	40%	38%	39%
Crime	52%	46%	42%
Preservation of Native Hawaiian culture	30%	26%	25%
Air or water pollution	31%	22%	23%
Number and quality of parks	18%	18%	22%
Sample size	1,609	413	204

SOURCE: Market Trends Pacific, Inc. and John M. Knox, Inc., 2006.

One question in that survey probes residents’ sense that they have little control over their region’s and island’s future. When asked whether “This island is being run for tourists at the expense of local people,” 39 percent of West Hawai‘i respondent strongly agreed, as opposed to 26 percent of East Hawai‘i respondents. (Residents of Maui and Kauai counties were even more likely to strongly agree with this claim.) The difference between East and West Hawai‘i is likely due in part to the size of the tourism economy in West Hawai‘i, and in part to West Hawai‘i residents’ sense that decision-makers in both Hilo and Honolulu fail to understand and give due priority to West Hawai‘i community needs.

Several interviewees reflected the general view that development has occurred too quickly. Many in the community want to see concurrency, i.e., future development should occur at the same time as infrastructure development. Their concerns usually focus on roads, but other public facilities, notably schools and recreation space, were mentioned as being in short supply. Some also are concerned to preserve or re-create a local sense of place.

Some interviewees mentioned recreation and community facilities as needed in North Kona. While they commented that regional facilities at Old Airport Park are inadequate, they were

more interested in seeing new recreation sites dispersed through the urban area than in expanding the regional park.

### **Project-specific Concerns**

West Hawai'i residents interviewed in the course of this study agree that housing is badly needed in North Kona. They saw the provision of additional housing in North Kona as needed for residents. Some commented that the project made sense as an infill development, filling out an area already being dedicated. Some of the interviewees viewed the project as inevitable, given the pressure for new housing in the area. Others emphasized congestion and limited infrastructure, and saw the project as adding to the region's problems.

All interviewees raised questions about traffic associated with the Kula Nei project. Most were concerned about additional traffic on Kaiminani Drive and Hina Lani Street. Several recognized that the project would affect existing sections of Holoholo Street, changing it from a quiet side street to a major connector road. When the road links Kaiminani Drive and Hina Lani Street, it will become, they thought, an important connection linking residents of the immediate area subdivisions to retail and other facilities in Kaloko Industrial Area and central Kailua-Kona.

Some interviewees questioned whether Kula Nei would provide affordable housing to those who need it most in North Kona. Housing is needed for people at many income levels, but "affordable housing," as defined by County regulations, is too expensive for many households, e.g., ones supported by a single service industry worker.

#### **4.8.4 Socio-Economic Impacts**

The Kula Nei project will have limited impacts on the housing market and the regional economy. It will add to revenues collected by the State and County. Its impacts on community organization and the quality of life in the immediate area around the project site are mixed. On the one hand, Kula Nei will come to enhance connectivity in the immediate area below Palani Road. On the other hand, it will add to the number of residents using Kaiminani Drive. Residents will likely need to adjust to the presence of a traffic signal on Kaiminani Drive at Holoholo Street – but that signal will help to assure an orderly flow of traffic and improve traffic safety on both streets. The

open space, community park, and homestead trail included in Kula Nei will offer residents recreational opportunities.

### **The Housing Market**

Demand for homes in North Kona is strong, as discussed in the market study included as Appendix A to this Environmental Impact Statement. Kula Nei will come to market along with such competitors as the Kaloko Heights project along Hina Lani Street, but demand for lots and affordable units can accommodate these and other projects considered in the market study.

It will be possible to sell at least ~~about~~ 40 market homes per year in the Kula Nei project, taking into account both strong market demand and competition from other developments. Affordable units are expected to sell as soon as they become available for occupancy. Production and absorption of housing units are forecast in the development schedule shown in Table 2-4 in Chapter 2.

### **Economic Impacts**

#### *Employment and Wages*

Development of the Kula Nei project is expected to involve construction over a period of ~~eight~~ seven years, as shown in Table 4-42. Project construction work will include off-site infrastructure development, on-site development of lots and infrastructure, and housing construction. The table shows construction spending and direct construction labor, estimated in full-time equivalent jobs.<sup>8</sup>

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<sup>8</sup> Many specialized construction jobs are short-term. For example, an electrician may spend a week or less on a project where others work throughout the year. The number of workers hired is likely to be larger than the estimated number of full-time equivalent jobs. Also, the direct construction workforce includes workers in the offices and baseyards of firms involved in a project, as well as ones actually on-site.

**Table 4-42: CONSTRUCTION SPENDING, EMPLOYMENT, AND WAGES**

	2010	2011	2012	2013	2014	2015	2016	2017
Construction cost (Millions 2007 \$s)								
Infrastructure	\$16.3	\$6.5	\$4.9	\$4.9	\$0.0	\$0.0	\$0.0	\$0.0
Single family	\$0.0	\$9.0	\$9.1	\$0.0	\$5.2	\$8.9	\$8.4	\$7.6
Multifamily	\$0.0	\$1.9	\$3.8	\$2.4	\$0.0	\$0.0	\$0.0	\$0.0
<b>Total</b>	<b>\$16.3</b>	<b>\$17.4</b>	<b>\$17.8</b>	<b>\$7.3</b>	<b>\$5.2</b>	<b>\$8.9</b>	<b>\$8.4</b>	<b>\$7.6</b>
Employment								
Direct jobs	98	109	111	44	34	58	55	50
Indirect jobs	54	60	61	24	18	32	30	27
Induced jobs	74	83	85	33	25	44	42	38
<b>Total</b>	<b>226</b>	<b>252</b>	<b>257</b>	<b>102</b>	<b>77</b>	<b>133</b>	<b>126</b>	<b>115</b>
Wages (in Million 2007\$s)								
Direct jobs	\$5.2	\$5.8	\$5.9	\$2.3	\$1.8	\$3.1	\$2.9	\$2.6
Indirect jobs	\$2.2	\$2.4	\$2.5	\$1.0	\$0.7	\$1.3	\$1.2	\$1.1
Induced jobs	\$3.0	\$3.3	\$3.4	\$1.3	\$1.0	\$1.8	\$1.7	\$1.5

**NOTES:** Construction employment estimated from the ratio of construction jobs to construction spending (using the Department of Labor and Industrial Relations' 2005 data and the 2002 Economic Census data for the relative job/cost ratio for different types of construction. Direct jobs are involved in the construction activity; indirect and induced jobs are supported by the circulation of capital through the local economy. These jobs are estimated from the State's Input-Output Model. Wages are estimated from 2005 wages per industry, and inflated to estimate current wages (in 2007 \$s) in line with increases in the Consumer Price Index for Honolulu.

On average, some 70 full-time construction jobs will be involved in work at Kula Nei during the construction period.

Direct jobs are within firms and subcontractors engaged in building the project. When these in turn buy materials and equipment in the local economy, they contribute to the creation of indirect jobs (in, for example, home supply stores or concrete manufacturing firms.) When in turn direct and indirect workers spend their wages, they create induced jobs, supported by the movement of capital from those wages through the local economy. (Induced jobs largely consist of retail, service and government jobs.) The total workforce in direct, indirect and induced construction jobs amounts nearly to 1,300 person-years of employment, for an average of 161 jobs per year.

Wages can be estimated from records of average wages in the construction industry in Hawai'i County. The indirect and induced jobs are spread throughout the economy, so they are estimated from average wages of all workers statewide. Wages for construction and construction-related workers on Kula Nei would total about \$59 million (2007 dollars) over the construction period.

As a housing development for the primary market, Kula Nei will not result in the creation of many permanent jobs. A resident manager and a few landscape, maintenance and security workers could be employed.

These jobs would exist wherever families find it possible to live: they would still exist if the project had not been built. Consequently, they are not treated as a new impact of the project.

### *Labor Force Impacts*

The Kula Nei project will affect the regional labor force less by creating jobs than by providing housing for service, retail, managerial and professional workers. As such housing increases, fewer workers will face unacceptable housing choices and/or difficult daily commutes. The cumulative impact of new housing development is an improvement in general quality of life and a reduction of turnover in the local workforce.

### **Population and Housing**

The project responds to the demand of a growing population for homes. It is unlikely to attract any new residents or visitors to Hawai'i, ~~who would not come if the project were not built.~~

In Hawai'i housing markets, non-residents purchase homes both within resort areas and nearby.

One report identified non-resident sales as accounting for 10% to 80% of recent sales in local markets on O'ahu and Kaua'i (SMS 2004). In West Hawai'i, non-residents can be expected to purchase a share of available market housing. Buyers may seek homes for investment, for part-time use, for eventual retirement or for other reasons. The primary market hence is largely, but not entirely, a resident market. (For this study, all affordable home buyers, 90% of buyers of homes on smaller lots, and 75% to 80% of buyers of homes on larger lots are expected to be residents, based on current ownership data from the immediate area.)

Table 4-43 shows calculations for on-site population. When fully built, Kula Nei will house approximately 651 residents. On average, some 30 non-residents are expected to be staying in the project as well.

**Table 4-43: ANNUAL OCCUPANCY AND POPULATION, KULA NEI**

	2010	2011	2012	2013	2014	2015	2016	2017
Available units								
Single Family	-	39	79	79	101	141	179	213
Multifamily	-	-	-	40	57	57	57	57
Occupancy (units)								
Single Family	-	38	77	77	98	137	175	208
Multifamily	-	-	-	39	56	56	56	56
Population								
Single Family								
Resident owners	-	92	185	185	234	326	414	493
Non-resident owners	-	5	10	10	14	20	25	30
Multifamily	-	-	-	111	158	158	158	158
Total resident population	-	92	185	296	393	485	572	651
Total de facto population	-	97	195	307	407	504	597	681

**NOTES:** Unit count is taken from the project development plan. Occupancy estimated at 97.5%, given the strong demand for homes in West Hawaii. Buyers of market units are expected to be largely Hawaii County residents. Based on ownership of comparable properties in TMK 3-7-3, 90% of buyers of homes on lots up to 15,000 square feet are expected to be residents; 80% of buyers of lots of 15,001 to 20,000 square feet are expected to be residents, and 75% of buyers of larger lots are expected to be residents. All occupants of multifamily housing are residents. For all unit types, an average household size of 2.85 (based on 2000 Census average for households in Census Tract 215.01, Block Group 2, the "immediate area." Units bought by non-residents are expected to be occupied 30% of the time.

The project's impact on housing can be estimated in relation to demand indicators. The 2006 *Hawaii Housing Policy Study* (SMS 2007) suggests that there is demand from about 7,200 resident households for units in North Kona. The 270 units proposed in Kula Nei could account for less than 4% of that demand. The project contributes to addressing the shortage of housing in West Hawai'i.

### Fiscal Impacts

Development of Kula Nei will result in revenues for the State of Hawai'i associated with construction and sale of property. The County of Hawai'i will gain revenues from taxes on homes and residential land.

The State is expected to gain from conveyance taxes on the sale of lots and of finished homes, from excise taxes on construction and from spending by construction-related workers in the local economy, from corporate income taxes on firms building the project, and from income taxes on construction-related workers' wages. These revenues are ~~derived~~ described in Table 4-44. The

cumulative increase in State revenues is estimated as \$8.7 million by the end of the construction period.

**Table 4-44: STATE OF HAWAI‘I TAX REVENUES ASSOCIATED WITH CONSTRUCTION OF KULA NEI**

	2010	2011	2012	2013	2014	2015	2016	2017
<b>Revenue flows (Million \$s)</b>								
<i>Lot sales</i>	\$0.0	\$28.7	\$7.6	\$13.4	\$8.6	\$9.6	\$0.0	\$0.0
<i>MF home sales</i>	\$0.0	\$0.0	\$0.0	\$11.9	\$5.0	\$0.0	\$0.0	\$0.0
<i>SF Home sales</i>	\$0.0	\$27.3	\$28.3	\$0.0	\$16.3	\$29.2	\$27.8	\$24.6
<i>Construction costs</i>	\$16.3	\$17.4	\$17.8	\$7.3	\$5.2	\$8.9	\$8.4	\$7.6
<i>Construction-related wages</i>	\$10.3	\$11.5	\$11.8	\$4.7	\$3.5	\$6.1	\$5.8	\$5.3
<b>State Revenues (\$1,000s)</b>								
Conveyance Tax on lot and MF sales	\$0.0	\$83.8	\$65.0	\$25.2	\$47.2	\$70.5	\$59.1	\$52.2
Excise Tax on construction	\$652.0	\$696.6	\$712.5	\$293.5	\$206.2	\$355.4	\$336.7	\$305.7
on spending by workers	\$259.1	\$288.7	\$295.2	\$116.6	\$88.8	\$153.0	\$144.9	\$131.6
Corporate Income Tax	\$27.7	\$29.6	\$30.3	\$12.5	\$8.8	\$15.1	\$14.3	\$13.0
Personal Income Tax (Workers)	\$540.5	\$602.3	\$615.8	\$243.3	\$185.2	\$319.2	\$302.4	\$274.5
Totals								
Annual	\$1,479.4	\$1,701.0	\$1,718.8	\$691.2	\$536.2	\$913.3	\$857.5	\$777.0
Cumulative	\$1,479.4	\$3,180.4	\$4,899.2	\$5,590.4	\$6,126.6	\$7,039.8	\$7,897.4	\$8,674.4

**NOTES:** Annual estimates depend on the timing of lot and home sales, projected here by Belt Collins Hawaii.

- 1 Lot sales taxed at \$0.10 per \$100 value for Hawaii residents; home sales to owner-occupants taxed at same rate for transactions up to \$600,000, and at \$0.20/\$100 for sales of \$600,001 to \$1,000,000. Home sales to others taxed at \$0.15/\$100 for sales up to \$600,000 and \$0.25/\$100 for sales from \$600,001 to \$1,000,000.
- 2 Excise tax at 4% of construction costs and of workforce disposable income. Share of spending subject to excise tax estimated from 2002 expenditure data.
- 3 Corporate income tax historically 0.17% of revenues (data from 2000).
- 4 Personal income tax historically 5.22% of resident incomes (average, 1998-2002).

**SOURCES:** Hawaii State Department of Business, Economic Development and Tourism, 2005; Hawaii State Department of Taxation, 2001, 2005

For the County of Hawai‘i, the increased real property taxes associated with development of Kula Nei are estimated to exceed \$1 million (2006 dollars) annually by 2011, and to reach a cumulative total of \$10.1 million through 2020.

**Table 4-45: INCREASE IN REAL PROPERTY TAX REVENUES, COUNTY OF HAWAI'I, FROM DEVELOPMENT AT KULA NEI**

	2006	2010	2011	2012	2013	2014	2015	2016	2017
Taxable Land (ac.)									
Agricultural	127.93								
Unimproved Residential		127.9	113.5	98.6	92.6	84.5	69.7	55.6	43.0
Improved Residential		-	14.5	29.3	29.3	37.4	52.3	66.4	79.0
Apartment		-	-	-	6.0	6.0	6.0	6.0	6.0
Taxable Value (millions of 2006 \$s)									
Land (Agricultural)	\$3.7								
Land (Unimproved Res.)		\$55.5	\$46.1	\$36.4	\$32.5	\$27.1	\$17.4	\$8.2	\$0.0
Land (Improved Res.)		\$0.0	\$14.5	\$29.3	\$29.3	\$37.4	\$52.3	\$66.4	\$79.0
Buildings (Imp. Res.)		\$0.0	\$17.4	\$35.1	\$35.1	\$44.9	\$62.7	\$79.6	\$94.8
Buildings (Apartment)		\$0.0	\$0.0	\$0.0	\$52.3	\$74.5	\$74.5	\$74.5	\$74.5
Adjustment for Owner-Occupant Exemptions									
Owner-occupant homes									
Single Family		0	24	49	49	62	86	109	130
Multifamily		0	0	0	39	56	56	56	56
Exemptions <sup>1</sup>									
Single Family		\$0.0	\$1.2	\$2.4	\$2.4	\$3.1	\$4.3	\$5.4	\$6.5
Multifamily		\$0.0	\$0.0	\$0.0	\$2.0	\$2.8	\$2.8	\$2.8	\$2.8
Adjusted Value, (Land and Improved)									
Improved Residential		\$0.0	\$12.1	\$24.7	\$24.7	\$32.1	\$45.0	\$57.2	\$68.0
Apartment		\$0.0	\$0.0	\$0.0	\$0.3	\$0.4	\$0.4	\$0.4	\$0.4
Homeowners		\$0.0	\$19.7	\$39.7	\$45.1	\$58.0	\$77.7	\$96.4	\$113.4
Annual Real Property Tax (In \$1,000s, 2006-2007 Rates) <sup>2</sup>									
Agricultural	\$31.2								
Unimproved Residential		\$546.8	\$453.8	\$358.3	\$319.7	\$267.2	\$171.8	\$81.1	\$0.0
Improved Residential		\$0.0	\$98.2	\$200.2	\$200.2	\$259.8	\$364.3	\$463.5	\$550.9
Apartment		\$0.0	\$0.0	\$0.0	\$2.4	\$3.4	\$3.4	\$3.4	\$3.4
Homeowner		\$0.0	\$109.2	\$220.4	\$250.2	\$321.6	\$431.0	\$535.1	\$629.1
Annual Increase over 2006		\$515.6	\$630.1	\$747.8	\$741.3	\$820.9	\$939.4	\$1,052.0	\$1,152.3
Cumulative Increase over 2006 <sup>3</sup>		\$515.6	\$1,145.7	\$1,893.5	\$2,634.8	\$3,455.7	\$4,395.1	\$5,447.0	\$6,599.3

NOTES: Hawaii County owner-occupants qualify for an exemption and for inclusion in a category taxed at a different rate from that used for Improved Residential or Apartment categories. Annual estimates herein depend on projections of lot and home sale timing, made here by Belt Collins Hawaii.

1 Basic homeowner exemptions are \$40,000. Higher exemptions are offered for homeowners over 60 years of age. For this study, the average exemption was taken to be \$50,000, i.e., one homeowner in four was assumed to be over 60 years old.

2 Taxes for 2006 taken from Hawaii County Real Property Tax site. Future taxes use the 2006 tax rates, and the values identified above (in constant dollars).

3 The major impact of development on County revenues is the increase in real property taxes. This row measures the total difference in annual revenues between revenues with development and revenues that would occur if the property remained Agricultural.

To the limited extent that the project increases demand for public facilities and services, Kula Nei will result in costs to the State and County. (Public service impacts are assessed below.) The developer will reduce County costs by paying for road connections through the project site that are needed to implement County plans.

### Social Impacts

As an infill housing development, Kula Nei's social impact will be modest and largely positive. It will help to increase the housing stock, enabling residents to live in a neighborhood convenient to West Hawai'i's major job center. With shorter commuting times, residents will be increasingly able to participate in community affairs and volunteer activities in their home areas.

By meeting, and hence reducing, demand, new housing developments such as Kula Nei help to restrain the growth in housing prices experienced throughout Hawai‘i. This cumulative impact affects all of West Hawai‘i.

Kula Nei’s road connections will affect nearby areas. When Holoholo Street extends north and south of the project, the new roadway will provide residents of the immediate area with a new way to reach major highways. Residents of Kona Palisades and Kona Acres will be able to reach Kaloko Industrial Park, including Costco, without venturing onto Queen Ka‘ahumanu Highway.

Current residents of Holoholo Street will experience a change in nearby traffic, and on their perceived quality of life. Their roadway is now little used. When Holoholo Street is extended south to Kula Nei, traffic on that street will increase appreciably. It will increase again when the road extends to Hina Lani Street.<sup>9</sup>

The volume of traffic on Holoholo Street will increase as County plans for connectivity are realized, affecting local residents. The speed of traffic will likely also increase, unless traffic-calming measures are used. If the aim is to lower traffic in Kona Acres, such measures would need to be taken in that area, not just in the project area.

## **4.9 PUBLIC SERVICES**

### **4.9.1 Police**

#### *Existing Conditions*

The Kona station of the Hawai‘i County Police Department is located at Kealakehe, just above Queen Ka‘ahumanu Highway, about 2.5 miles from the project site. It serves as the local station and main office for West Hawai‘i bureaus. Some 78 positions were authorized for the Kona district as of 2005 (Hawai‘i County Police Department 2006).

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<sup>9</sup> It is not now certain which connection would be made first.

### *Impacts*

While population and housing growth will lead to increased demand for police services, the impact of the Kula Nei project is likely to be small.

The Kula Nei project will provide new homes in response to existing housing demand in North Kona. It will accordingly not create significant additional demand for police services. When it has its first road connection, Kula Nei will be very similar to nearby ungated subdivisions, in terms of accessibility and demand for police services. Eventually, the extension of Holoholo Street to Hina Lani will allow increased connectivity and access throughout the area. This should help police respond to calls throughout the area.

#### **4.9.2 Fire Prevention**

##### *Existing Conditions*

The County's North Kona fire station is located in Kailua-Kona, about 4.5 miles from the project. The Keāhole Airport station is some three miles from the project. In addition, Kalaoa Volunteer Fire Company 7 Bravo is located on Kaimimani Drive, at the *makai* end of the Kona Palisades area. Its fifteen volunteers are trained in firefighting and work in support of the regular Fire Department personnel.

Funds for a new Kalaoa Fire Station are in the current budget before the Hawai'i County Council.

The Public Facilities and Programs working group of the Kona Community Plan process issued a "Final Actions" report in 2006. It urged improvements in fire and police protection, accomplished by increased citizen patrols and higher wages for police officers. (The report is posted at [http://www.herc.info/cdp-documents/kona/working-groups/working-group-reports/FinalActions\\_FacilitiesPrograms\\_061212.doc/view](http://www.herc.info/cdp-documents/kona/working-groups/working-group-reports/FinalActions_FacilitiesPrograms_061212.doc/view).)

### *Impacts*

The Kula Nei project will be built according to the Hawai'i County Fire Code. All project roadways will be wide enough to permit access by fire trucks. With development comes an

increase in the Fire Department's responsibility for structures, and a decrease in the acreage on which brushfires could occur. The net impact is likely to be minimal.

### **4.9.3 Education**

#### *Existing Conditions*

The Kula Nei site is within the Kealakehe school catchment area. It is served by:

- Kealakehe Elementary School. Located on Kealaka'a Street, this school serves nearly 1,000 students from kindergarten through grade five. It has 60 full-time equivalent teaching positions, including regular education, special education, and supplemental instructors;
- Kealakehe Intermediate School. Also located on Kealaka'a Street, this school has approximately 1,000 students in grades six through eight, and a teaching staff of 58 positions; and
- Kealakehe High School. Opened in 1997 in the Villages of La'i'opua, this school serves students from Hualālai to Waikoloa Village. In the 2006-2007 school year, 1,567 students were enrolled. A total of 76.5 teaching positions are allocated to the school.

Private schools in North Kona include:

- Hualālai Academy, with approximately 160 students in grades K through 12, located on Kealaka'a Street;
- Makua Lani Christian School in Holululoa, and the Kona Christian Academy; and
- The Kona campus of the Hawai'i Montessori School (serving grades K through six).

In addition, Hawai'i Preparatory School, located in Waimea, South Kohala, is a K-12 school with approximately 600 students. It regularly enrolls students from North Kona, as well as ones from South Kohala and boarders.

### *Impacts*

As a development planned for the primary residential market in North Kona, Kula Nei will house children attending both public and private schools. The Hawai'i State Department of Education (DOE) has estimated ~~that the impact of Kula Nei on the Kealakehe complex as a total of 160 students. will house approximately 89 elementary school students 46 middle school students, and 25 high school students (response to EIS Preparation Notice by P. Hamamoto, January 4, 2007, contained in Chapter 7).~~ The Department further notes that, while Kealakehe High School is currently enrolling more students than its capacity, its enrollment will be lower by 2011. Enrollments at Kealakehe Elementary, on the other hand, are expected to increase to the point that the school will have 135 more students than its current capacity of 983 students.

At least 3,000 additional housing units are planned for the Kalaoa area, apart from Kula Nei.<sup>10</sup> With a total of 270 units, Kula Nei could account for about eight percent of likely new housing development. The planned increase in the housing stock will make creation of at least one additional elementary school a high priority.

~~Assuming that the Kula Nei population will closely resemble that of the immediate area in the 2000 Census, the total number of Hawai'i Department of Education students living in the development would be smaller than estimated by the Department. Table 4-46 provides an alternate estimate of the student numbers involved. The total estimated public school population is 126 students, as compared to the DOE estimate of 160 students (79% of the DOE estimate).~~

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<sup>10</sup> This count excludes oceanfront resort development proposals, as they are unlikely to house public school students.

**Table 4-46 ESTIMATE OF KULA NEI SCHOOL POPULATION, BASED ON 2000 CENSUS DATA FOR IMMEDIATE AREA**

	Immediate area CT 215.01, BG 2		Kula Nei	
	Number	Ratio/unit	Number	
Occupied housing units, 2000	1,159	1.00		
Persons in households	3,301	2.85		
Children age 5 to 14	432	0.37		
Youths age 15 to 19	203	0.18		
School enrollment				
K through 8	457		101	(1)
Public school share	95.4%		96	(2)
9 through 12	180		38	(3)
Public school share	78.3%		30	(2)

**NOTES:** All data for the immediate area are from the 2000 Census, SF3.

- (1) Kula Nei population estimated for 270 households, using historical ratio for children age 5 to 14.
- (2) Public school population calculated using 2000 share for immediate area.
- (3) Kula Nei population estimated for 270 households, using 80% of historical ratio for youths age 15-19.

~~The impact of a housing project like Kula Nei on schools is smaller than the total student population:~~

- ~~• The great majority of resident families already live in the Hawai'i District, and some already live in the Kealahou catchment area. They are not new in migrants but already users of the school system. Their children are not new users of the DOE, and hence not a new impact on the school system.~~
- ~~• Some units will be occupied by families sending students to private schools, as shown in Table 4-46. Also, other units will be vacant or occupied only part time—factors not included in Table 4-46—and hence will not house public school students.~~

The DOE has requested a school “fair share” contribution. The Shopoff Group, L.P., 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 DOE. The Shopoff Group, L.P., is engaged in discussions with the DOE, and an agreement to do so will be executed in the near future.

#### **4.9.4 Recreation**

##### *Existing Conditions*

Major recreation facilities in North Kona include:

- Kailua Park Complex, known as Old Airport Park. This site includes a gym, swimming pool and fields for active recreation as well as an extensive beach area.
- Hale Halawai. This recreation center, located on Alii Drive on the south side of Kailua-Kona, offers sports and crafts programs.

Honokohau Boat Harbor, approximately 2.5 miles from Kula Nei, provides ocean access and services to boaters.

Newer subdivisions such as Pualani Estates and Lokahi Makai include a park or sports field for resident use.

The Public Facilities and Programs working group of the Kona Community Plan process identified two major objectives involving recreation: (a) develop an impact fee to pay for new recreation and sports facilities, and (b) provide community centers to meet the needs of residents of all ages.

##### *Impacts*

Kula Nei will include approximately 3 acres of park space for use by residents. In addition, the developer proposes, if the ~~County-owner~~ agrees, to preserve and maintain the “Old Homestead Road” as a scenic feature and pedestrian trail.

With increased population in the Kalaoa area, demand for active recreation space will increase. Kula Nei will contribute to that increase. However, some residents of Kula Nei may move to North Kona from South Kona, Ka’u or South Kohala, areas with fewer resources (such as sports fields and gymnasias) for active recreation than North Kona.

#### **4.9.5 Health Care**

##### *Existing Conditions*

The primary medical facility for the Kona region is Kona Community Hospital in Kealahue, South Kona. This 94-bed hospital is part of the Hawai'i Health Care System supported by the State of Hawai'i. It has 24-hour emergency services, an intensive care unit, maternity, oncology, and other units. It is located about 15 miles from Kula Nei.

In Waimea, the North Hawai'i Community Hospital is a privately owned non-profit facility, with 40 beds, a 24-hour emergency room, and acute care services. It is located about 30 miles from Kula Nei.

##### *Impacts*

With increased population in North Kona, demand for medical services will grow. Kula Nei's population will contribute to that growth in proportion to its size. (Its 651 residents account for 4.3% of anticipated population growth from 2000 to 2020 in the district.)

Kula Nei will eventually contribute to the completion of a mid-level road, improving access to the subdivisions around Kaiminani Drive for ambulances and other emergency vehicles.

#### **4.9.6 Summary: Impacts of the Alternatives on Socio-Economic Conditions and Public Services**

Kula Nei is expected to have modest socio-economic impacts. It will result in increased revenues for the State and County which will offset any increased costs associated with new development at the project site. Completion of the planned Holoholo Street mid-level road link between Kaiminani Drive and Hina Lani Street will improve traffic flow in the area, but will increase traffic volumes on the existing section of Holoholo Street south of Kaiminani Drive.

The No Action Alternative would fail to contribute to meeting the regional demand for housing, and would not provide funds to help the County achieve its road connectivity goals. It would not have any significant socio-economic impacts.

The Large-Lot Alternative would provide less housing to meet demand than the proposed project. Since it would not involve rezoning, it would not need to include any affordable housing. It is likely that a smaller share of housing in the project would be bought by residents.

The Small-Lot Alternative would go further towards meeting local demand for housing. However, it would concentrate demand for public services in an infill area. It would help to make a new public school necessary for Kalaoa subdivisions, and it would intensify demand for recreational space. These impacts could be mitigated should the State be willing to provide a school, and the County provide playing fields, on public land nearby.

ALTERNATIVES	NO IMPACTS	POTENTIAL IMPACTS	ADVERSE IMPACTS	COMMENTS/MITIGATION MEASURES
1. No Action	✓			No substantial socio-economic impacts are anticipated under this alternative.
2. Proposed Action		✓		No mitigation measures are warranted.
3. Large-Lot Subdivision		✓		No mitigation measures are warranted.
4. Small-Lot Subdivision		✓	✓	The Small-Lot Alternative would increase demand for schools and recreational space in the immediate area significantly. Mitigation measures are warranted.



# **CHAPTER FIVE: RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS, POLICIES, AND CONTROLS FOR THE AFFECTED AREA**

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## **5.1 HAWAI'I STATE PLANS AND CONTROLS**

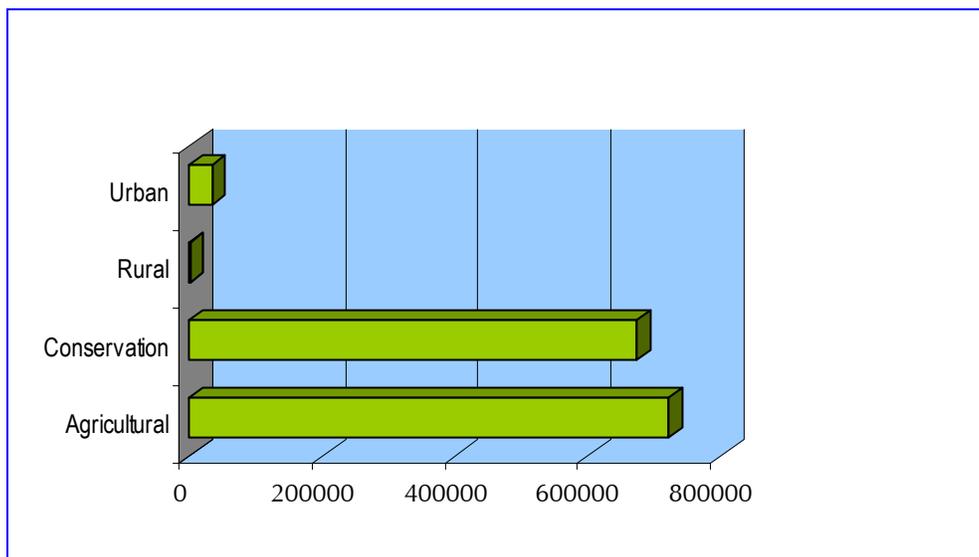
## **5.2 THE LAND-USE LAW**

The Legislature for the State determined in 1961 that a state-wide zoning system was needed to protect Hawai'i's valuable land from development that provided a short-term gain for a few and resulted in a long-term loss to the income and growth potential of the State's economy. Accordingly, the Legislature established an overall framework of land-use management and adopted the Land Use Law under Chapter 205 of the HRS. The law placed all lands in the State in one of four land-use districts: *Urban, Agricultural, Conservation, or Rural* (the Rural District was added in 1963), and established the LUC under HRS Section 205-1.

### **5.2.1 Land Use District Boundaries**

The LUC identified land areas suitable for inclusion in one of the four districts and set the standards for determining the boundaries. There are approximately 2.5 million acres of land in the County of Hawai'i (Big Island); 1.4 million acres are in West Hawai'i (North Kohala, South Kohala, North Kona, South Kona, and Ka'u). A large portion of the land is in the Agricultural and Conservation Districts.

**Figure 5-1: Proportion of Land in District Boundaries – West Hawai‘i**



### **5.2.1.1 Urban District**

The Urban District is generally defined as lands in urban use with sufficient reserve to accommodate foreseeable growth. This district generally includes city-like concentrations of people, structures, services, and vacant areas for future development. The individual county governs the zoning within the district. In the County of Hawai‘i, this district is comprised of approximately 54,267 acres or 2 percent of the island’s total land area

### **5.2.1.2 Agricultural District**

The Agricultural District includes lands with a high capacity for intensive cultivation as well as those with low capacity. The minimum lot size in this district under the State Land Use Law is one acre. This district has the second greatest land area with approximately 1,184,599 acres or slightly over 46 percent of the total land area of the County of Hawai‘i. This district includes activities or uses such as farming, aquaculture, game and fish propagation; agricultural services; farm buildings, employee housing, district mills, storage facilities, processing facilities, vehicle and equipment storage areas, roadside stands; wind machines and wind farms; small-scale meteorological, air quality, noise, and other scientific and environmental data collection and monitoring facilities; agricultural parks; and open area recreational facilities, including golf courses and golf driving ranges, provided that they are not located on land in the highest

productivity categories as determined by the LUC. The LUC and/or County regulate special uses within the Agricultural District depending upon lot size. County zoning ordinances may further define accessory uses within this district.

### **5.2.1.3 Conservation District**

Conservation Districts are primarily those lands in the existing forest and water reserve zones. This district has the largest land area with approximately 1,338,135 acres or 52 percent of the total land area of the County of Hawai'i. This district includes areas necessary for (1) protecting watersheds and water sources; (2) preserving scenic and historic areas; (3) providing park lands, wilderness, and beach reserves; (4) conserving indigenous or endemic plants, forestry, fish, and wildlife; (5) preventing floods and soil erosion; (6) retaining open-space areas to enhance the present or potential value of abutting or surrounding communities; (7) using areas of value for recreational purposes, other related activities, and other permitted uses not detrimental to a multiple-use conservation concept. The State Board of Land and Natural Resources (BLNR) has authority over conservation lands and the State DLNR sets rules governing its uses.

The Conservation District has five subzones: (1) Protective, (2) Limited, (3) Resource, (4) General and (5) Special. The first four subzones are arranged in a hierarchy of environmental sensitivity, ranging from the most environmentally sensitive (Protective) to the least sensitive (General). The Special subzone applies to special cases, specifically to allow a unique land use on a specific site. Each subzone has a set of "identified land uses" which may be allowed by discretionary permit. Applications can only be accepted for an identified land use listed under the particular subzone covering the subject property. Most of the identified land uses require a discretionary permit or some sort of approval from the DLNR or BLNR. Major permits are required for land uses, which have the greatest potential impact, and an environmental assessment and/or an EIS is required (and may also require a Public Hearing).

### **5.2.1.4 Rural District**

Rural Districts are defined under the State Land Use Law as lands primarily comprised of small farms mixed with low-density residential lots that have a minimum lot size of one-half acre. Of

the four districts, this is the smallest, with approximately 807 acres of the County of Hawai'i's total land area. This district generally includes low-density residential uses, agricultural uses, public, quasi public, and public utility facilities. These districts may include contiguous areas not suitable for low-density residential lots or small farms. Jurisdiction over rural districts is shared by the LUC and respective county.

### **5.2.2 The Land Use Commission**

The LUC's primary responsibilities are to: (1) administer the law and determine the boundaries for each district; (2) preserve and protect Hawai'i's land; (3) encourage uses to which lands are best suited; and (4) ensure that areas of State concern are addressed in the land-use decision-making process.

The LUC also reviews and rules on applicant-initiated amendments to the district boundaries, pursuant to HRS Section 205-4 and the HAR, Chapter 15-15, *Hawaii Land Use Commission Rules*, as amended, and approves special-use permits for land comprised of 15 acres or more, pursuant to HRS Section 205-6.

The Governor appoints members to the LUC, and the Senate confirms the appointments. Members are selected from a cross-section of the community for a specified term. One member is appointed from each of the four counties and five at large, for a total of nine.<sup>1</sup>

### **5.2.3 Decision-Making Criteria for a Boundary Amendment**

The LUC, when reviewing a petition for a boundary amendment, considers the decision-making criteria of HRS Section 205-17:

- (1) *The extent to which the proposed reclassification conforms to the applicable goals, objectives, and policies of the Hawaii state plan and relates to the applicable priority guidelines of the Hawaii state plan and the adopted functional plans;*

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<sup>1</sup> Data in Section 5.1 obtained from Chapter 205 of the Hawai'i Revised Statutes, State of Hawai'i LUC website (<http://luc.state.hi.us>), and the 2001 County of Hawai'i Proposed General Plan. The revised 2001 General Plan was used instead of the existing plan because the County conducts five- and ten-year comprehensive reviews and updates of the General Plan to maintain dynamism and flexibility. The revised plan contains major changes and trends that have occurred and updated statistics reflecting these changes.

**DISCUSSION:** Based upon the facts, data, and information compiled in Shopoff Group's *Petition for a Land Use District Boundary Amendment* (docket number A06-770) filed on November 29, 2006, the proposed Kula Nei project is consistent and on track with the goals, objectives, policies, and priority guidelines of the Hawai'i State Plan and the State Functional Plans. A thorough review of the Hawai'i State Plan and the adopted State Functional Plans are discussed in detail in subsequent sections, beginning with Section 5.2.

(2) *The extent to which the proposed reclassification conforms to the applicable district standards;*

**DISCUSSION:** A reclassification to the Urban District would allow the subject property to (1) conform with the County of Hawai'i's General Plan Land Use Pattern Allocation Guide (LUPAG) which designates the subject property for Low Density Urban; (2) accommodate the projected population growth of the island of Hawai'i (Big Island); (3) support the current State land use classifications in the area surrounding the subject property; (4) and support the objectives and policies of the State's West Hawai'i Regional Plan and the County's Keāhole to Kailua Development Plan.

(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;*

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

**DISCUSSION:** Development of the proposed project will alter much of the existing landscape on the subject property. However, no important natural systems or habitats have been identified on site. Consequently, the impact of development is considered to be negligible. As discussed in Chapter 3, prehistoric and historic occupation of the property has been documented through the identification of numerous archaeological sites on site. Archaeological sites identified as significant will be preserved in accordance with procedures established by the SHPD. In

addition, the Homestead Road is identified as a cultural resource and will be preserved as a pedestrian trail. The subject property is not considered to be a valued agricultural resource due to the poor quality of the soil. Preservation of the property for grazing is inconsistent with the residential character of the surrounding properties and is not considered to be a viable endeavor.

*(D) Commitment of state funds and resources;*

**DISCUSSION:** No commitment of State funds and resources are necessary, except for the costs associated with the hearing and processing of the proposed boundary amendment. In respect to improvements to the subject property, the applicant or its successors will fund site work and the construction of on-site and off-site infrastructure, including roadways; wastewater collection and treatment; potable water wells, reservoirs, and transmission lines; and utilities.

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

**DISCUSSION:** The project contributes to economic development in several ways including employment opportunities for construction work during the period of development and increased revenues to the State and County in the form of taxes. But most importantly, the project fulfills the objectives of both the State and the County to encourage residential development in the area between Keāhole and Kailua in North Kona to support job growth in West Hawai‘i’s visitor industry. The proposed project contributes to fulfilling those objectives by providing residential lots that will be targeted for affordable and market-priced housing.

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

**DISCUSSION:** The applicant is committed to compliance with the affordable housing policy of Hawai‘i County. The proposed project is intended to provide a wide range of primary market and affordable housing opportunities for the North Kona community.

*(4) The representations and commitments made by the petitioner in securing a boundary change.*

**DISCUSSION:** In approving a boundary amendment, the LUC must take into account the General Plan of the respective County; and where applicable, the objectives, policies, and guidelines of the State Coastal Zone Management Act (CZMA), HRS Chapter 205A. The following sections will discuss the various State and County of Hawai‘i plans and identify the applicability and the extent to which HELCO proposed petition for a boundary amendment conforms to these plans.

### **5.3 HAWAI‘I STATE PLAN**

The Department of Business, Economic Development and Tourism (DBEDT) (formerly known as the Department of Planning and Economic Development) completed in 1978 a Hawai‘i State Plan to: (1) improve the planning process; (2) increase the effectiveness of government and private actions; (3) improve coordination among agencies and levels of government; (4) provide for the wise use of Hawai‘i’s resources; and (5) guide the future development of the State. (State of Hawai‘i, Department of Planning and Economic Development, 1978, Revised 1989, 1991.)

The Legislature adopted in 1978 the Hawai‘i State Planning Act (Planning Act), as HRS Chapter 226. The Planning Act consists of a series of broad goals, objectives and policies that serve as guidelines for future long-term growth and development. It further (1) provides a basis for determining priorities and allocating limited resources; (2) seeks to improve coordination of Federal, State, and County plans, policies, programs, projects, and regulatory activities; and (3) establishes a system for plan formulation and program coordination to provide for an integration of all major State and County activities.

The Planning Act is divided into three sections: Part I - Overall Theme, Goals, Objectives and Policies; Part II - Planning Coordination and Implementation; and Part III - Priority Guidelines:

Part I of the Planning Act consists of three overall themes: (1) individual and family self-sufficiency; (2) social and economic mobility; and (3) community or social well-being. These themes are considered “basic functions of society” and goals toward which government must strive (HRS Section 226-3).

Part II of the Planning Act primarily addresses internal government policies to help streamline, coordinate, and implement various plans and processes between governmental agencies. It seeks to eliminate or consolidate burdensome or duplicative governmental requirements imposed on business, where public health, safety, and welfare would not be adversely affected.

Part III of the Planning Act establishes overall priority guidelines to address areas of statewide concern (HRS Section 226-101). The overall direction and focus are on improving the quality of life for Hawai‘i’s present and future population through the pursuit of desirable courses of action (HRS Section 226-102).

The following table, identified as Table 5-1a, and 5-1b respectively presents Parts I and III of the Planning Act, and rates the applicant’s conformance and support of the State’s goals and objectives. Part II is not presented, as this section primarily pertains to internal government affairs.

**Table 5-1a: HAWAI‘I STATE PLANNING ACT Part I**

SECTION	CHAPTER 226 - PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	RATING
<b>A = actively supportive C= conforms I = goal is inconsistent with applicant’s objectives NA = goal is not applicable</b>		
226-1	Findings and purpose.	
226-2	Definitions.	
226-3	Overall Theme	
226-4	State Goals. In order to guarantee, for present and future generations, those elements of choice and mobility that insure that individuals and groups may approach their desired levels of self-reliance and self-determination, it shall be the goal of the State to achieve:	
(1)	A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai‘i’s present and future generations.	A
(2)	A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well being of the people.	A
(3)	Physical, social, and economic well being, for individuals and families in Hawai‘i, that nourishes a sense of community responsibility, of caring, and of participation in community life.	A
<b>COMMENTARY: As a matter of State and County land use policy, the lower slopes of Hualālai in North Kona are intended for residential development to provide housing opportunities for the fast growing population of West Hawai‘i. The proposed project is consistent with that vision. The project will provide a wide range of housing opportunities in a desirable physical location, including affordable housing opportunities on site.</b>		
226-5	OBJECTIVE AND POLICIES FOR POPULATION	
(a)	It shall be the objective in planning for the State’s population to guide population growth to be consistent with the achievement of physical, economic, and social objectives contained in this chapter;	A

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(b)	To achieve the population objective, it shall be the policy of this State to:	
(1)	Manage population growth statewide in a manner that provides increased opportunities for Hawai'i's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.	A
(2)	Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.	A
(3)	Promote increased opportunities for Hawai'i's people to pursue their socio-economic aspirations throughout the islands.	C
(4)	Encourage research activities and public awareness programs to foster an understanding of Hawai'i's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawai'i's population.	C
(5)	Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among the states, provided that such actions do not prevent the reunion of immediate family members.	NA
(6)	Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.	NA
(7)	Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.	A
<b>COMMENTARY: Developing a residential project for the primary and affordable housing markets in a location specifically designated by the State for urban expansion and by the County for low density urban directly contributes to government's desire to direct population growth to areas with the greatest economic benefit.</b>		
226-6	OBJECTIVES AND POLICIES FOR THE ECONOMY-IN GENERAL.	
(a)	Planning for the State's economy in general shall be directed toward achievement of the following objectives:	
(1)	Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawai'i's people.	C
(2)	A steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.	C
(b)	To achieve the general economic objectives, it shall be the policy of this State to:	
(1)	Expand Hawai'i's national and international marketing, communication, and organizational ties, to increase the State's capacity to adjust to and capitalize upon economic changes and opportunities occurring outside the State.	NA
(2)	Promote Hawai'i as an attractive market for environmentally and socially sound investment activities that benefit Hawai'i's people.	NA
(3)	Seek broader outlets for new or expanded Hawai'i business investments.	C
(4)	Expand existing markets and penetrate new markets for Hawai'i's products and services.	C
(5)	Assure that the basic economic needs of Hawai'i's people are maintained in the event of disruptions in overseas transportation.	NA
(6)	Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.	C
(7)	Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawai'i's small-scale producers, manufacturers, and distributors.	NA

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(8)	Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.	NA
(9)	Foster greater cooperation and coordination between the government and private sectors in developing Hawai'i's employment and economic growth opportunities.	C
(10)	Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.	A
(11)	Maintain acceptable working conditions and standards for Hawai'i's workers.	C
(13)	Provide equal employment opportunities for all segments of Hawai'i's population through affirmative action and nondiscrimination measures.	C
(14)	Encourage businesses that have favorable financial multiplier effects within Hawai'i's economy.	C
(15)	Promote and protect intangible resources in Hawai'i, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.	C
(16)	Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new, potential growth industries in particular.	NA
(17)	Foster a business climate in Hawai'i - including attitudes, tax and regulatory policies, and financial and technical assistance programs - that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.	<u>NGNA</u>
<b>COMMENTARY: As the fastest growing region on the Big Island, the North Kona area is in strong need of a wide range of housing opportunities to support visitor industry and service sector employees. The proposed project is ideally situated to help fulfill West Hawai'i's employees' housing demand.</b>		
226-7	OBJECTIVES AND POLICIES FOR THE ECONOMY- AGRICULTURE	
(a)	Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives: Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:	
(1)	Viability of Hawai'i's sugar and pineapple industries.	NA
(2)	Growth and development of diversified agriculture throughout the State.	C
(3)	An agriculture industry that continues to constitute a dynamic and essential component of Hawai'i's strategic, economic, and social well-being.	C
(b)	To achieve the agriculture objectives, it shall be the policy of this State to:	
(1)	Establish a clear direction for Hawai'i's agriculture through stakeholder commitment and advocacy.	NA
(2)	Encourage agriculture by making best use of natural resources.	C
(3)	Provide the governor and the legislature with information and options needed for prudent decision making for the development of agriculture.	NA
(4)	Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.	NA
(5)	Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawai'i's economy.	NA
(6)	Seek the enactment and retention of federal and state legislation that benefits Hawai'i's agricultural industries.	NA
(7)	Strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawai'i's producers and consumer markets locally, on the continental United States,	NA

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	and internationally.	
(8)	Support research and development activities that provide greater efficiency and economic productivity in agriculture.	NA
(9)	Enhance agricultural growth by providing public incentives and encouraging private initiatives.	NA
(10)	Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.	NA
(11)	Increase the attractiveness and opportunities for an agricultural education and livelihood.	NA
(12)	Expand Hawaii's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture, and other potential enterprises.	C
(13)	Promote economically competitive activities that increase Hawaii's agricultural self-sufficiency.	C
(14)	Promote and assist in the establishment of sound financial programs for diversified agriculture.	NA
(15)	Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.	NA
(16)	Facilitate the transition of agricultural lands in economically nonfeasible agricultural production to economically viable agricultural uses.	C
<b>COMMENTARY: The subject property is ill-suited for agricultural development because of its poor soil quality and its physical setting: it is surrounded on three sides by existing residential subdivisions. Development of the property for residential uses will not adversely impact the agricultural industry because no potentially productive agricultural land is being removed from the inventory. Rather, the project will have an indirect beneficial impact on the agricultural industry because the resulting population growth increases the demand for goods and services in the area including locally grown agricultural products.</b>		
226-8	OBJECTIVE AND POLICIES FOR THE ECONOMY-VISITOR INDUSTRY.	
(a)	Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawaii's economy.	
(b)	To achieve the visitor industry objective, it shall be the policy of this State to:	
(1)	Support and assist in the promotion of Hawaii's visitor attractions and facilities.	NA
(2)	Insure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people.	NA
(3)	Improve the quality of existing visitor destination areas.	C
(4)	Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.	A
(5)	Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawaii's people.	A
(6)	Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the visitor industry.	NA
(7)	Foster a recognition of the contribution of the visitor industry to Hawaii's economy and the need to perpetuate the aloha spirit.	A
(8)	Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawaii's cultures and values.	NA
<b>COMMENTARY: The health of the Big Island's economy is very much influenced by the availability of housing in</b>		

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<b>reasonable proximity to job centers. Reducing commute times is important to workers' well being. Because West Hawai'i is a high growth visitor destination, its current housing opportunities are outstripped by its employment opportunities. The provision of new housing that includes a wide range of prices will have a beneficial impact on visitor industry workers.</b>		
226-9	OBJECTIVE AND POLICIES FOR THE ECONOMY-FEDERAL EXPENDITURES.	
(a)	Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawai'i's economy;	NC
(b)	To achieve the federal expenditures objective, it shall be the policy of this State to:	
(1)	Encourage the sustained flow of federal expenditures in Hawai'i that generates long-term government civilian employment.	NA
(2)	Promote Hawai'i's supportive role in national defense.	NA
(3)	Promote the development of federally supported activities in Hawai'i that respect state-wide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawai'i's environment.	NA
(4)	Increase opportunities for entry and advancement of Hawai'i's people into federal government service.	C
(5)	Promote federal use of local commodities, services, and facilities available in Hawai'i.	NA
(6)	Strengthen federal-state-county communication and coordination in all federal activities that affect Hawai'i.	NA
(7)	Pursue the return of federally controlled lands in Hawai'i that are not required for either the defense of the nation or for other purposes of national importance, and promote the mutually beneficial exchanges of land between federal agencies, the State, and the counties.	NA
<b>COMMENTARY: While there is little relationship between private residential development and matters related to federal expenditures and national defense, increasing the availability of housing has a beneficial impact upon existing and potential federal workers by helping to provide housing opportunities in reasonable proximity to West Hawai'i's job centers.</b>		
226-10	OBJECTIVE AND POLICIES FOR THE ECONOMY-POTENTIAL GROWTH ACTIVITIES.	
(a)	Planning for the State's economy with regard to potential growth activities shall be directed towards achievement of the objective of development and expansion of potential growth activities that serve to increase and diversify Hawai'i's economic base.	A
(b)	To achieve the potential growth activity objective, it shall be the policy of this State to:	
(1)	Facilitate investment and employment in economic activities that have the potential for growth such as diversified agriculture, aquaculture, apparel and textile manufacturing, film and television production, and energy and marine-related industries.	A
(2)	Expand Hawai'i's capacity to attract and service international programs and activities that generate employment for Hawai'i's people.	C
(3)	Enhance and promote Hawai'i's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts.	C
(4)	Accelerate research and development of new energy- related industries based on wind, solar, ocean, and underground resources and solid waste.	NA
(5)	Promote Hawai'i's geographic, environmental, social, and technological advantages to attract new economic activities into the State.	NA

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(6)	Provide public incentives and encourage private initiative to attract new industries that best support Hawai'i's social, economic, physical, and environmental objectives.	A
(7)	Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research.	NA
(8)	Develop, promote, and support research and educational and training programs that will enhance Hawai'i's ability to attract and develop economic activities of benefit to Hawai'i.	NA
(9)	Foster a broader public recognition and understanding of the potential benefits of new, growth-oriented industry in Hawai'i.	NA
(10)	Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawai'i's social, economic, physical, and environmental objectives.	NA
(11)	Increase research and development of businesses and services in the telecommunications and information industries.	NA
<p><b>COMMENTARY: The goals and policies set forth in HRS 226-10 correspond with the changes and growth occurring in the West Hawai'i region. Bold initiatives set by the County of Hawai'i's General Plan; the State's 1989 West Hawai'i Regional Plan; the County's 1991 Keāhole to Kailua Development Plan and its current efforts to prepare a Kona Community Development Plan; and overall State plans are steadily materializing in the area. Over \$1 billion of planned construction of resort-residential complexes has been announced, in addition to the substantial investment already in place. Various resort and resort-residential complexes are currently under construction or are planned for construction in the near future. Government, commercial, industrial activities, retail, banking services have sprouted in the region, including "Big-box" retailers such as Costco, K-Mart, and WalMart and international sporting events such as the IronMan are in Kona. Recent projects on the Big Island include but are not limited to: Lowe's Home Improvement Center, Home Depot, reopening of Kona Surf as Sheraton Keauhou Bay Resort, Koyo USA Bottling Company, NELHA process seawater pump station, Kamehameha School, North Hawai'i Community Hospital expansion, West Hawai'i Concrete, and Waikoloa Water Company.</b></p> <p><b>Diversified agriculture continues its upward momentum, bringing with it the potential for growth in related industries such as exporting, manufacturing, and production. Agricultural commodities for the local and export markets continues to expand and gain exposure through the tourism industry.</b></p> <p><b>The State in collaboration with Hiluhilu Development LLC (also known as Palamanui), is currently in the planning stages for the new Palamanui/University of Hawai'i Center at West Hawai'i College project combined with residential development, which will encompass approximately 1,225 acres. The project will bring higher educational, research and information facilities, residential and commercial complexes, a medical wellness center, and numerous growth opportunities in the region.</b></p> <p><b>Together, these efforts contribute to the diversification of the economy. Yet, their success requires the availability of affordable housing in reasonable proximity to job centers. The Kula Nei project will have a beneficial indirect impact upon economic diversification by contributing much needed housing opportunities.</b></p>		
226-10.5	OBJECTIVES AND POLICIES FOR THE ECONOMY-INFORMATION INDUSTRY.	
(a)	Planning for the State's economy with regard to the information industry shall be directed toward the achievement of the objective of positioning Hawai'i as the leading dealer in information businesses and services in the Pacific Rim;	NA
(b)	To achieve the information industry objective, it shall be the policy of this State to:	
(1)	Encourage the continued development and expansion of the telecommunications infrastructure serving Hawai'i to accommodate future growth in the information industry;	C
(2)	Facilitate the development of new business and service ventures in the information industry which will provide employment opportunities for the people of Hawai'i;	C

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(3)	Encourage greater cooperation between the public and private sectors in developing and maintaining a well-designed information industry;	NA
(4)	Ensure that the development of new businesses and services in the industry are in keeping with the social, economic, and physical needs and aspirations of Hawai'i's people;	C
(5)	Provide opportunities for Hawai'i's people to obtain job training and education that will allow for upward mobility within the information industry;	NA
(6)	Foster a recognition of the contribution of the information industry to Hawai'i's economy; and	NA
(7)	Assist in the promotion of Hawai'i as a broker, creator, and processor of information in the Pacific.	C
<b>COMMENTARY: As is the case with other segments of the economy, the availability of affordable housing in reasonable proximity to employment centers will have a beneficial impact upon the industry's ability to attract and keep workers.</b>		
226-11	OBJECTIVES AND POLICIES FOR THE PHYSICAL ENVIRONMENT-LANDBASED, SHORELINE, AND MARINE RESOURCES.	
(a)	Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:	
(1)	Prudent use of Hawai'i's land-based, shoreline, and marine resources.	C
(2)	Effective protection of Hawai'i's unique and fragile environmental resources.	A
(b)	To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:	
(1)	Exercise an overall conservation ethic in the use of Hawai'i's natural resources.	A
(2)	Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.	A
(3)	Take into account the physical attributes of areas when planning and designing activities and facilities.	A
(4)	Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.	A
(5)	Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.	NA
(6)	Encourage the protection of rare or endangered plant and animal species and habitats native to Hawai'i.	A
(7)	Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.	C
(8)	Pursue compatible relationships among activities, facilities, and natural resources.	C
(9)	Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.	A
<b>COMMENTARY: The siting of the Kula Nei project is consistent with sound planning principals for the preservation of the environment and our natural resources. The project area has been carefully surveyed to ensure that the no significant habitats are present and that no endangered, threatened or candidate species will be impacted.</b>		
226-12	OBJECTIVE AND POLICIES FOR THE PHYSICAL ENVIRONMENT-SCENIC, NATURAL BEAUTY, AND HISTORIC RESOURCES.	
(a)	Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawai'i's scenic assets, natural beauty, and multi-cultural/historical resources.	A

SECTION	CHAPTER 226 - PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES	RATING
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(b)	To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:	
(1)	Promote the preservation and restoration of significant natural and historic resources.	A
(2)	Provide incentives to maintain and enhance historic, cultural, and scenic amenities.	NA
(3)	Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.	C
(4)	Protect those special areas, structures, and elements that are an integral and functional part of Hawai'i's ethnic and cultural heritage.	A
(5)	Encourage the design of developments and activities that complement the natural beauty of the islands.	A
<p><b>COMMENTARY: In the course of planning the Kula Nei project, it has been determined that the existing Homestead Road should be preserved as a cultural feature. To that end, the Homestead Road, including its abutting dry-stack walls, have been incorporated into the project as a pedestrian trail (the Homestead Road is actually a very narrow corridor that is not suitable for use as a road for vehicular travel). In addition, significant archaeological sites that have been identified, including burials, will be preserved. The alignment of a large lava tube has also been preserved. These preserved areas become important open space elements in the scenic landscape.</b></p>		
226-13	OBJECTIVES AND POLICIES FOR THE PHYSICAL ENVIRONMENT-LAND, AIR, AND WATER QUALITY.	
(a)	Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:	
(1)	Maintenance and pursuit of improved quality in Hawai'i's land, air, and water resources.	A
(2)	Greater public awareness and appreciation of Hawai'i's environmental resources.	A
(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.	A
(2)	Promote the proper management of Hawai'i's land and water resources.	A
(3)	Promote effective measures to achieve desired quality in Hawai'i's surface, ground, and coastal waters.	A
(4)	Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai'i's people.	A
(5)	Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.	A
(6)	Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities.	A
(7)	Encourage urban developments in close proximity to existing services and facilities.	A
(8)	Foster recognition of the importance and value of the land, air, and water resources to Hawai'i's people, their cultures and visitors.	C
<p><b>COMMENTARY: The project's wastewater collection and treatment system, which includes a combination of individual septic systems and a centralized privately developed and operated WWTP, will be designed to minimize impacts to the environment. The proposed subdivision plan includes a variety of lot sizes which will enhance the visual character of the community. Multiple vehicular access points are provided for safe ingress and egress, especially during periods of emergency. It also includes the development of regional water supply and reservoirs.</b></p>		

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226-14	OBJECTIVE AND POLICIES FOR FACILITY SYSTEMS--IN GENERAL.	
(a)	Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.	A
(b)	To achieve the general facility systems objective, it shall be the policy of this State to:	
(1)	Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.	A
(2)	Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.	A
(3)	Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.	A
(4)	Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.	A
<b>COMMENTARY: The proposed combination of individual septic systems with a centralized wastewater treatment system is a testament to design flexibility and the prudent use of resources. The project also includes a potable water well, reservoirs and a transmission system.</b>		
226-15	OBJECTIVE AND POLICIES FOR FACILITY SYSTEMS--IN GENERAL.	
(a)	Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:	
(1)	Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.	A
(2)	Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.	A
(b)	To achieve solid and liquid waste objectives, it shall be the policy of this State to:	
(1)	Encourage the adequate development of sewerage facilities that complement planned growth.	A
(2)	Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.	A
(3)	Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.	A
<b>COMMENTARY: By privately funding wastewater collection and treatment, the proposed project will not overburden the existing regional system.</b>		
226-16	OBJECTIVE AND POLICIES FOR FACILITY SYSTEMS-WATER.	
(a)	Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.	A
(b)	To achieve the facility systems water objective, it shall be the policy of this State to:	
(1)	Coordinate development of land use activities with existing and potential water supply.	A
(2)	Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.	A
(3)	Reclaim and encourage the productive use of runoff water and wastewater discharges.	A
(4)	Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.	A

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(5)	Support water supply services to areas experiencing critical water problems.	A
(6)	Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.	A
<b>COMMENTARY: The applicant will privately fund the development of a new regional potable water system for the project and surrounding areas, including a well, reservoirs and transmission lines. Construction of the system will enhance service to the surrounding area as well by improving water supply, storage capacity and connectivity.</b>		
226-17	OBJECTIVES AND POLICIES FOR FACILITY SYSTEMS-TRANSPORTATION	
(a)	Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:	
(1)	An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.	A
(2)	A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.	A
(b)	To achieve the transportation objectives, it shall be the policy of this State to:	
(1)	Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter;	NA
(2)	Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;	A
(3)	Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;	A
(4)	Provide for improved accessibility to shipping, docking, and storage facilities;	A
(5)	Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;	NA
(6)	Encourage transportation systems that serve to accommodate present and future development needs of communities;	A
(7)	Encourage a variety of carriers to offer increased opportunities and advantages to interisland movement of people and goods;	NA
(8)	Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs;	NA
(9)	Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;	A
(10)	Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawai'i's natural environment;	A
(11)	Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;	A
(12)	Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives; and	A
(13)	Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.	A
<b>COMMENTARY: A key element of the proposed project is its contribution to improvements in the regional roadway network. By privately funding the connection of major collector roads (the HoloHolo Street extension per the Keāhole to</b>		

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<b>Kailua Development Plan), the project will help to improve regional traffic circulation and provide alternate routes to Queen Ka'ahumanu and Māmalahoa highways.</b>		
226-18	OBJECTIVES AND POLICIES FOR FACILITY SYSTEMS-ENERGY	
(a)	Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all	
(1)	Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;	NA
(2)	Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased;	C
(3)	Greater energy security in the face of threats to Hawaii's energy supplies and systems; and	NA
(4)	Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use.	C
(b)	To achieve the energy objectives, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable energy services to accommodate demand.	A
(c)	To further achieve the energy objectives, it shall be the policy of this State to:	
(1)	Support research and development as well as promote the use of renewable energy sources;	A
(2)	Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth;	A
(3)	Base decisions of least-cost supply-side and demand-side energy resource options on a comparison of their total costs and benefits when a least-cost is determined by a reasonably comprehensive, quantitative, and qualitative accounting of their long-term, direct and indirect economic, environmental, social, cultural, and public health costs and benefits;	A
(4)	Promote all cost-effective conservation of power and fuel supplies through measures including: (A) Development of cost-effective demand-side management programs; (B) Education; and (C) Adoption of energy-efficient practices and technologies;	A
(5)	Ensure to the extent that new supply-side resources are needed, the development or expansion of energy systems utilizes the least-cost energy supply option and maximizes efficient technologies;	A
(6)	Support research, development, and demonstration of energy efficiency, load management, and other demand-side management programs, practices, and technologies;	A
(7)	Promote alternate fuels and energy efficiency by encouraging diversification of transportation modes and infrastructure;	A
(8)	Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications; and	A
(9)	Support actions that reduce, avoid, or sequester Hawaii's greenhouse gas emissions through agriculture and forestry initiatives.	A
<b>COMMENTARY: As a residential subdivision, the project can contribute to energy efficiency in two arenas: transportation and residential energy consumption. From the perspective of transportation, the regional roadway connections that will result from the project's implementation will contribute to an improvement in vehicular circulation in North Kona, which translate to fewer delays and less energy consumption. Specifically, extending Holoholo Street through the project area and mitigating project impacts with the installation of a traffic signal at the Holoholo Street/Kaiminani Drive intersection will improve level of service from "F" to "B". Opportunities for improved energy efficiency at the residential level will range from ventilation design, landscaping, and the installation of energy saving devices, and reduced consumption lighting fixtures.</b>		
226-18.5	OBJECTIVES AND POLICIES FOR FACILITY SYSTEMS-TELECOMMUNICATIONS.	
(a)	Planning for the State's telecommunications facility systems shall be directed towards the	NA

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	achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people.	
(b)	To achieve the telecommunications objective, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable telecommunications services to accommodate demand.	NA
(c)	To further achieve the telecommunications objective, it shall be the policy of this State to:	
(1)	Facilitate research and development of telecommunications systems and resources;	NA
(2)	Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning;	NA
(3)	Promote efficient management and use of existing telecommunications systems and services; and	C
(4)	Facilitate the development of education and training of telecommunications personnel.	NA
226-19	OBJECTIVES AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT-HOUSING	
(a)	Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:	
(1)	Greater opportunities for Hawai'i's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low, low- and moderate-income segments of Hawai'i's population.	A
(2)	The orderly development of residential areas sensitive to community needs and other land uses.	A
(3)	The development and provision of affordable rental housing by the State to meet the housing needs of Hawai'i's people.	A
(b)	To achieve the housing objectives, it shall be the policy of this State to:	
(1)	Effectively accommodate the housing needs of Hawai'i's people.	A
(2)	Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households.	A
(3)	Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.	A
(4)	Promote appropriate improvement, rehabilitation, and maintenance of existing housing units and residential areas.	NA
(5)	Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.	A
(6)	Facilitate the use of available vacant, developable, and underutilized urban lands for housing.	NA
(7)	Foster a variety of lifestyles traditional to Hawai'i through the design and maintenance of neighborhoods that reflect the culture and values of the community.	C
(8)	Promote research and development of methods to reduce the cost of housing construction in Hawai'i.	NA
<p><b>COMMENTARY: The Kula Nei project will offer a range of lot sizes (7,500 square feet to 20,000+ square feet), as well as affordable housing opportunities. This will result in a variety of housing opportunities becoming available to the public and priced from affordable through primary market. The project's location on the west facing slope of Hualālai within an expansive residential community offers will make the development attractive to potential home buyers. The project's affordable component will be constructed in compliance with the County's affordable housing requirements.</b></p>		

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226-20	OBJECTIVES AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT-HEALTH.	
(a)	Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:	
(1)	Fulfillment of basic individual health needs of the general public.	C
(2)	Maintenance of sanitary and environmentally healthful conditions in Hawai'i's communities.	C
(b)	To achieve the health objectives, it shall be the policy of this State to:	
(1)	Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.	NA
(2)	Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.	NA
(3)	Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.	NA
(4)	Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.	NA
(5)	Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.	C
(6)	Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.	NA
<b>COMMENTARY: The project's wastewater collection and treatment strategy includes individual septic systems for residential lots in excess of 10,000 square feet, with smaller lots being served by a privately funded treatment plant. The entire system will be constructed to comply with DOH standards. Collectively, the system will ensure that sanitary and healthful conditions are maintained for the benefit of the area's residents.</b>		
226-21	OBJECTIVE AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT-EDUCATION	
(a)	Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.	NA
(b)	To achieve the education objective, it shall be the policy of this State to:	
(1)	Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.	NA
(2)	Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.	NA
(3)	Provide appropriate educational opportunities for groups with special needs.	NA
(4)	Promote educational programs which enhance understanding of Hawai'i's cultural heritage.	NA
(5)	Provide higher educational opportunities that enable Hawai'i's people to adapt to changing employment demands.	NA
(6)	Assist individuals, especially those experiencing critical employment problems or barriers, or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.	NA
(7)	Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.	NA
(8)	Emphasize quality educational programs in Hawai'i's institutions to promote academic excellence.	NA
(9)	Support research programs and activities that enhance the education programs of the State.	NA

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226-23	OBJECTIVE AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT-LEISURE.	
(a)	Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.	NA
(b)	To achieve the leisure objective, it shall be the policy of this State to:	
(1)	Foster and preserve Hawai'i's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.	NA
(2)	Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.	NA
(3)	Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.	NA
(4)	Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.	NA
(5)	Ensure opportunities for everyone to use and enjoy Hawai'i's recreational resources.	NA
(6)	Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.	C
(7)	Provide adequate and accessible physical fitness programs to promote physical and mental well-being of Hawai'i's people.	NA
(8)	Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.	NA
(9)	Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawai'i's population to participate in the creative arts.	NA
(10)	Assure adequate access to significant natural and cultural resources in public ownership.	C
226-24	OBJECTIVE AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT--INDIVIDUAL RIGHTS AND PERSONAL WELL-BEING.	
(a)	Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations.	NA
(b)	To achieve the individual rights and personal well- being objective, it shall be the policy of this State to:	
(1)	Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.	NA
(2)	Uphold and protect the national and state constitutional rights of every individual.	NA
(3)	Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.	NA
(4)	Ensure equal opportunities for individual participation in society.	NA
226-25	OBJECTIVE AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT-CULTURE.	
(a)	Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawai'i's people.	C

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(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.	A
(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.	A
(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.	A
(4)	Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawai'i's people and visitors.	A
<p><b>COMMENTARY: The Kula Nei property includes significant archaeological and cultural features that will be preserved, including burials, a large lava tube, and a portion of a former historic region-serving transportation route known as Homestead Road. The alignment of the lava tube will be preserved to ensure that its integrity will be maintained. The Homestead Road, including its abutting dry-stack rock walls, will be preserved and incorporated into the project as a pedestrian trail. The project will ensure access by lineal descendants to burials. Access to sites for traditional and customary Native Hawaiian practices will be provided.</b></p>		
226-26	SECTION 226-26 OBJECTIVES AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT-PUBLIC SAFETY.	
(a)	Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:	
(1)	Assurance of public safety and adequate protection of life and property for all people.	NA
(2)	Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.	C
(3)	Promotion of a sense of community responsibility for the welfare and safety of Hawai'i's people.	C
(b)	To achieve the public safety objectives, it shall be the policy of this State to:	
(1)	Ensure that public safety programs are effective and responsive to community needs.	NA
(2)	Encourage increased community awareness and participation in public safety programs.	C
(c)	To further achieve public safety objectives related to criminal justice, it shall be the policy of this State to:	
(1)	Support criminal justice programs aimed at preventing and curtailing criminal activities.	NA
(2)	Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.	NA
(3)	Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.	NA
(d)	To further achieve public safety objectives related to emergency management, it shall be the policy of this State to:	NA
(1)	Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.	NA
(2)	Enhance the coordination between emergency management programs throughout the State.	NA
226-27	OBJECTIVES AND POLICIES FOR SOCIO-CULTURAL ADVANCEMENT-GOVERNMENT	
(a)	Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:	

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(1)	Efficient, effective, and responsive government services at all levels in the State.	NA
(2)	Fiscal integrity, responsibility, and efficiency in the state government and county governments.	NA
(b)	To achieve the government objectives, it shall be the policy of this State to:	NA
(1)	Provide for necessary public goods and services not assumed by the private sector.	NA
(2)	Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.	NA
(3)	Minimize the size of government to that necessary to be effective.	NA
(4)	Stimulate the responsibility in citizens to productively participate in government for a better Hawai'i.	NA
(5)	Assure that government attitudes, actions, and services are sensitive to community needs and concerns.	NA
(6)	Provide for a balanced fiscal budget.	NA
(7)	Improve the fiscal budgeting and management system of the State.	NA
(8)	Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.	NA

**Table 5-1b: HAWAII STATE PLANNING ACT PART III**

SECTION	CHAPTER 226 - PART III. PRIORITY GUIDELINES	RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>		
226-101	Establishes overall priority guidelines to address areas of statewide concern.	
226-102	Overall direction. The State shall strive to improve the quality of life for Hawaii's present and future population through the pursuit of desirable courses of action in five major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, and quality education.	
226-103	ECONOMIC PRIORITY GUIDELINES.	
(a)	Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawaii's people and achieve a stable and diversified economy:	
(1)	Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.	NA
(A)	Encourage investments which:	
(i)	Reflect long term commitments to the State;	C
(ii)	Rely on economic linkages within the local economy;	C
(iii)	Diversify the economy;	NA
(iv)	Reinvest in the local economy;	C
(v)	Are sensitive to community needs and priorities, and	C
(vi)	Demonstrate a commitment to provide management opportunities to Hawaii residents.	NA
(2)	Encourage the expansion of technological research to assist industry development and support the development and commercialization of technological advancements.	NA
(3)	Improve the quality, accessibility, and range of services provided by government to business, including data and reference services and assistance in complying with governmental regulations.	NA
(4)	Seek to ensure that state business tax and labor laws and administrative policies are equitable, rational, and predictable.	NA
(5)	Streamline the building and development permit and review process, and eliminate or consolidate other burdensome or duplicative governmental requirements imposed on business, where public health, safety and welfare would not be adversely affected.	NA
(6)	Encourage the formation of cooperatives and other favorable marketing or distribution arrangements at the regional or local level to assist Hawaii's small-scale producers, manufacturers, and distributors.	NA
(7)	Continue to seek legislation to protect Hawaii from transportation interruptions between Hawaii and the continental United States.	NA
(8)	Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potentials and which have the following characteristics:	NA
(A)	An industry that can take advantage of Hawaii's unique location and available physical and human resources.	NA
(B)	A clean industry that would have minimal adverse effects on Hawaii's environment.	NA
(C)	An industry that is willing to hire and train Hawaii's people to meet the industry's labor needs at all levels of employment.	NA
(D)	An industry that would provide reasonable income and steady employment.	NA
(9)	Support and encourage, through educational and technical assistance programs and other means, expanded opportunities for employee ownership and participation in Hawaii business.	NA

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(10)	Enhance the quality of Hawai'i's labor force and develop and maintain career opportunities for Hawai'i's people through the following actions:	
(A)	Expand vocational training in diversified agriculture, aquaculture, information industry, and other areas where growth is desired and feasible.	NA
(B)	Encourage more effective career counseling and guidance in high schools and post-secondary institutions to inform students of present and future career opportunities.	NA
(C)	Allocate educational resources to career areas where high employment is expected and where growth of new industries is desired.	NA
(D)	Promote career opportunities in all industries for Hawai'i's people by encouraging firms doing business in the State to hire residents.	NA
(E)	Promote greater public and private sector cooperation in determining industrial training needs and in developing relevant curricula and on-the-job training opportunities.	NA
(F)	Provide retraining programs and other support services to assist entry of displaced workers into alternative employment.	NA
(b)	Priority guidelines to promote the economic health and quality of the visitor industry:	
(1)	Promote visitor satisfaction by fostering an environment which enhances the Aloha Spirit and minimizes inconveniences to Hawai'i's residents and visitors.	C
(2)	Encourage the development and maintenance of well-designed, adequately serviced hotels and resort destination areas which are sensitive to neighboring communities and activities and which provide for adequate shoreline setbacks and beach access.	NA
(3)	Support appropriate capital improvements to enhance the quality of existing resort destination areas and provide incentives to encourage investment in upgrading, repair, and maintenance of visitor facilities.	NA
(4)	Encourage visitor industry practices and activities which respect, preserve, and enhance Hawai'i's significant natural, scenic, historic, and cultural resources.	C
(5)	Develop and maintain career opportunities in the visitor industry for Hawai'i's people, with emphasis on managerial positions.	NA
(6)	Support and coordinate tourism promotion abroad to enhance Hawai'i's share of existing and potential visitor markets.	NA
(7)	Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.	C
(8)	Support law enforcement activities that provide a safer environment for both visitors and residents alike.	C
(9)	Coordinate visitor industry activities and promotions to business visitors through the state network of advanced data communication techniques.	NA
(c)	Priority guidelines to promote the continued viability of the sugar and pineapple industries:	
(1)	Provide adequate agricultural lands to support the economic viability of the sugar and pineapple industries.	NA
(2)	Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawai'i.	NA
(3)	Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.	NA
(d)	Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:	

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(1)	Identify, conserve, and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands.	NA
(2)	Assist in providing adequate, reasonably priced water for agricultural activities.	NA
(3)	Encourage public and private investment to increase water supply and to improve transmission, storage, and irrigation facilities in support of diversified agriculture and aquaculture.	NA
(4)	Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.	NA
(5)	Encourage and assist with the development of a waterborne and airborne freight and cargo system capable of meeting the needs of Hawai'i's agricultural community.	NA
(6)	Seek favorable freight rates for Hawai'i's agricultural products from interisland and overseas transportation operators.	NA
(7)	Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities.	NA
(8)	Continue the development of agricultural parks and other programs to assist small independent farmers in securing agricultural lands and loans.	NA
(9)	Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.	NA
(10)	Support the continuation of land currently in use for diversified agriculture.	C
(e)	Priority guidelines for water use and development:	
(1)	Maintain and improve water conservation programs to reduce the overall water consumption rate.	A
(2)	Encourage the improvement of irrigation technology and promote the use of nonpotable water for agricultural and landscaping purposes.	A
(3)	Increase the support for research and development of economically feasible alternative water sources.	A
(4)	Explore alternative funding sources and approaches to support future water development programs and water system improvements.	A
(f)	Priority guidelines for energy use and development:	
(1)	Encourage the development, demonstration, and commercialization of renewable energy sources.	A
(2)	Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.	A
(3)	Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.	A
(4)	Encourage the development and use of energy conserving and cost-efficient transportation systems.	A
(g)	Priority guidelines to promote the development of the information industry:	
(1)	Establish an information network that will serve as the catalyst for establishing a viable information industry in Hawai'i.	NA
(2)	Encourage the development of services such as financial data processing, products and services exchange, foreign language translations, telemarketing, teleconferencing, a twenty-four-hour international stock exchange, international banking, and a Pacific Rim management center.	NA

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(3)	Encourage the development of small businesses in the information field such as software development, the development of new information systems and peripherals, data conversion and data entry services, and home or cottage services such as computer programming, secretarial, and accounting services.	NA
(4)	Encourage the development or expansion of educational and training opportunities for residents in the information and telecommunications fields.	NA
(5)	Encourage research activities, including legal research in the information and telecommunications fields.	NA
(6)	Support promotional activities to market Hawai'i's information industry services.	NA
226-104	POPULATION GROWTH AND LAND RESOURCES PRIORITY GUIDELINES.	
(a)	Priority guidelines to effect desired statewide growth and distribution:	
(1)	Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawai'i's people.	A
(2)	Manage a growth rate for Hawai'i's economy that will parallel future employment needs for Hawai'i's people.	C
(3)	Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.	A
(4)	Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.	A
(5)	Explore the possibility of making available urban land, low-interest loans, and housing subsidies to encourage the provision of housing to support selective economic and population growth on the neighbor islands.	NA
(6)	Seek federal funds and other funding sources outside the State for research, program development, and training to provide future employment opportunities on the neighbor islands.	NA
(7)	Support the development of high technology parks on the neighbor islands.	NA
(b)	Priority guidelines for regional growth distribution and land resource utilization:	
(1)	Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures, and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.	A
(2)	Make available marginal or nonessential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.	A
(3)	Restrict development when drafting of water would result in exceeding the sustainable yield or in significantly diminishing the recharge capacity of any groundwater area.	C
(4)	Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.	C
(5)	In order to preserve green belts, give priority to state capital-improvement funds which encourage location of urban development within existing urban areas except where compelling public interest dictates development of a noncontiguous new urban core.	C
(6)	Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.	A
(7)	Pursue rehabilitation of appropriate urban areas.	NA

SECTION	CHAPTER 226 - PART III. PRIORITY GUIDELINES	RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>		
(8)	Support the redevelopment of Kakaako into a viable residential, industrial, and commercial community.	NA
(9)	Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.	C
(10)	Identify critical environmental areas in Hawai'i to include but not be limited to the following: watershed and recharge areas; wildlife habitats (on land and in the ocean); areas with endangered species of plants and wildlife; natural streams and water bodies; scenic and recreational shoreline resources; open space and natural areas; historic and cultural sites; areas particularly sensitive to reduction in water and air quality; and scenic resources.	C
(11)	Identify all areas where priority should be given to preserving rural character and lifestyle.	C
(12)	Utilize Hawai'i's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.	A
(13)	Protect and enhance Hawai'i's shoreline, open spaces, and scenic resources.	A
226-105	<b>CRIME AND CRIMINAL JUSTICE. PRIORITY GUIDELINES IN THE AREA OF CRIME AND CRIMINAL JUSTICE:</b>	
(1)	Support law enforcement activities and other criminal justice efforts that are directed to provide a safer environment.	NA
(2)	Target state and local resources on efforts to reduce the incidence of violent crime and on programs relating to the apprehension and prosecution of repeat offenders.	NA
(3)	Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.	C
(4)	Reduce overcrowding or substandard conditions in correctional facilities through a comprehensive approach among all criminal justice agencies which may include sentencing law revisions and use of alternative sanctions other than incarceration for persons who pose no danger to their community.	NA
(5)	Provide a range of appropriate sanctions for juvenile offenders, including community-based programs and other alternative sanctions.	NA
(6)	Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.	NA
226-106	<b>AFFORDABLE HOUSING. PRIORITY GUIDELINES FOR THE PROVISION OF AFFORDABLE HOUSING:</b>	
(1)	Seek to use marginal or nonessential agricultural land and public land to meet housing needs of low- and moderate-income and gap-group households.	A
(2)	Encourage the use of alternative construction and development methods as a means of reducing production costs.	A
(3)	Improve information and analysis relative to land availability and suitability for housing.	A
(4)	Create incentives for development which would increase home ownership and rental opportunities for Hawai'i's low- and moderate-income households, gap-group households, and residents with special needs.	A
(5)	Encourage continued support for government or private housing programs that provide low interest mortgages to Hawai'i's people for the purchase of initial owner-occupied housing.	A
(6)	Encourage public and private sector cooperation in the development of rental housing alternatives.	A
(7)	Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.	A

SECTION	CHAPTER 226 - PART III. PRIORITY GUIDELINES	RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>		
(8)	Give higher priority to the provision of quality housing that is affordable for Hawai'i's residents and less priority to development of housing intended primarily for individuals outside of Hawai'i.	A
226-107	QUALITY EDUCATION. PRIORITY GUIDELINES TO PROMOTE QUALITY EDUCATION:	
(1)	Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement;	NA
(2)	Continue emphasis on general education "core" requirements to provide common background to students and essential support to other university programs;	NA
(3)	Initiate efforts to improve the quality of education by improving the capabilities of the education work force;	NA
(4)	Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision-making responsibilities;	NA
(5)	Increase and improve the use of information technology in education by the availability of telecommunications equipment for:	
(A)	The electronic exchange of information;	NA
(B)	Statewide electronic mail; and	NA
(C)	Access to the Internet.	NA
(6)	Encourage programs that increase the public's awareness and understanding of the impact of information technologies on our lives;	NA
(7)	Pursue the establishment of Hawai'i's public and private universities and colleges as research and training centers of the Pacific;	NA
(8)	Develop resources and programs for early childhood education;	NA
(9)	Explore alternatives for funding and delivery of educational services to improve the overall quality of education; and	NA
(10)	Strengthen and expand educational programs and services for students with special needs.	NA

## 5.4 STATE FUNCTIONAL PLANS

The Planning Act called for the creation of functional plans to set specific objectives, establish policies, and implement actions for a particular field of activity. These functional plans further identified those organizations responsible in carrying out the actions, the implementing timeframe, and the proposed budgets.

The most current functional plans and the relationship, if any, to the applicant's proposed petition for a boundary amendment are discussed in the following sections. It is important to note that while these plans are considered to be the current "official" State Functional Plans, a deviation from the original goals of the plan may have occurred due to national and world events or other unforeseeable factors.

## **5.4.1 State Agricultural Functional Plan (1991)**

### **5.4.1.1 Goals of the Plan**

The State Agricultural Functional Plan sought to ultimately increase the overall level of agricultural development in Hawai‘i. At the time the plan was written, the two fundamental objectives were to (1) ensure the continued viability of Hawai‘i’s sugar and pineapple industries, and (2) encourage the continued growth and development of diversified agriculture throughout the State. As we now know, lower labor and production costs in other parts of the world caused a rapid decline and demise of the pineapple and sugar industries in Hawai‘i. While diversified agriculture has helped offset year-to-year declines for sugar and pineapple, according to Department of Agriculture (DOA) 2006 statistics, overall revenue for diversified agriculture has fallen to its lowest level in 10 years. The estimated gross state product for agriculture in 2005 was approximately \$339 million<sup>2</sup> (*State of Hawaii Data Book, 2006*).

The functional plan for agriculture also set objectives to develop capabilities to convert Hawai‘i-grown crops into potential new value/added products for the local community, visitor industry, and export markets. DEBDT, large corporations, and other organizations were delegated with the task of implementing actions to develop linkages between the agriculture industry and the State’s \$10-\$14 billion annual tourism industry. The goal was to promote and develop a diverse range of products and programs focusing on niche marketing, such as ag-tourism, and to assist in the development of diversified agriculture.

### **5.4.1.2 Agriculture in the County of Hawai‘i**

Agriculture is an important industry in the County of Hawai‘i that helps to broaden and diversify the economy in terms of employment, and also supplies residential communities and resorts with agricultural commodities. A number of growers are also exporters of various crops. Other related agricultural industries include packing, processing, and manufacturing.

Approximately 1.2 million acres or 47 percent of the total land area in the County of Hawai‘i are in the State Land Use Agricultural District. Approximately 720,099 acres are in West Hawai‘i.

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<sup>2</sup> Gross state product estimates are on a North American Industry Classification System (NAICS) basis.

This includes potentially high or high capacity agricultural lands as well as potentially low capacity lands. A sizeable percentage of the land is currently not used for agriculture.

The County predicts that agriculture's future will remain favorable with strong diversification and development of new export protocol and technology. If trends remain constant and diversified agricultural continues its upward climb, the need for energy efficient technologies to support increased production will continue to evolve by necessity.

#### **5.4.1.3 Conformance with the Goals of the Plan**

As the project area consists of lands that are generally unsuitable for agricultural development due to their poor soil classification, its reclassification from the Agricultural District to the Urban District will not have a significant adverse impact the agricultural industry. The state designates the property for urban expansion and the county's land use policy identifies the project area for low density urban. Although the property has been used for grazing in the past, its proximity to existing residential subdivisions precludes that use from continuing.

### **5.4.2 State Conservation Functional Plan (1991)**

#### **5.4.2.1 Goals of the Plan**

The State Conservation Lands Functional Plan addresses the impacts of population growth and economic development on Hawai'i's natural environment and provides a framework for the protection and preservation of pristine lands and shore lands. The objective of the plan is to provide for a management program allowing the judicious use of the State's natural resources balanced with the need to protect these resources to varying degrees. The State is primarily responsible to provide the management of conservation areas. However, counties play a key role in directing urban and agricultural activities and in retaining open space and cultural sites as lands become urbanized.

#### **5.4.2.2 Conservation Land in the County of Hawai'i**

Conservation Districts are primarily those lands in the existing forest and water reserve zones. This district has the largest land area with approximately 1,304,347 acres or 50 percent of the

total land area of the County of Hawai‘i. The following table shows the amount of acreage for the various districts in the County of Hawai‘i:

**Table 5-2: DISTRICT BOUNDARIES IN THE COUNTY OF HAWAI‘I BY AREA**

	Agricultural	Conservation	Rural	Urban	Total
Puna	175,104	138,563	146	6,329	320,142
South Hilo	70,695	169,493	0	12,814	253,002
North Hilo	53,587	120,110	71	608	174,376
Hamakua	162,729	235,805	13	1,041	399,588
<b>East Hawai‘i</b>	<b>462,115</b>	<b>663,971</b>	<b>230</b>	<b>20,792</b>	<b>1,147,108</b>
North Kohala	64,713	13,187	16	2,434	80,350
South Kohala	150,426	15,356	53	10,608	176,443
North Kona	158,853	188,331	477	17,787	365,448
South Kona	110,749	35,051	31	845	146,676
Ka‘ū	237,743	422,239	0	1,801	661,783
<b>West Hawai‘i</b>	<b>722,484</b>	<b>674,164</b>	<b>577</b>	<b>33,475</b>	<b>1,430,700</b>
<b>Total</b>	<b>1,184,599</b>	<b>1,338,135</b>	<b>807</b>	<b>54,267</b>	<b>2,577,808</b>

State of Hawai‘i, DBEDT, Office of Planning GIS Data  
County of Hawai‘i Planning Department

### 5.4.2.3 Conformance with the Goals of the Plan

As none of the properties contained within the Primary Project Area or Accessory Areas are classified as Conservation District, their reclassification to the Urban district would have no impact upon the goals of the State Conservation Functional Plan.

### 5.4.3 State Educational Functional Plan (1989)

#### 5.4.3.1 Goals of the Plan

The State Educational Functional Plan reflects the Department of Education’s (DOE) strategy to address the goals, policies, and priority guidelines of the Planning Act and the goals of the Board of Education (BOE). The plan outlines actions to be taken by the DOE to improve the public school system and to attend to various societal needs and trends.

### **5.4.3.2 Education in West Hawai'i**

New schools have emerged in the West Hawai'i region to accommodate the increase in population arising from growth in the region. The Konawaena High School complex includes Konawaena High School, Konawaena Middle School, the newly constructed Konawaena Elementary School, Hookena Elementary School, and Honaunau Elementary School and serves approximately 2,882 students. The Kealakehe High School complex is comprised of the newly constructed Kealakehe High School, Kealakehe Intermediate School, Holualoa Elementary School, Kealakehe Elementary School, and Kahakai Elementary School, and serves approximately 4,063 students. The Ka'ū High School complex is comprised of Ka'ū High School, Pahala Elementary School, and Na'alehu Elementary and Intermediate School, and serves a total enrollment of approximately 810 students from kindergarten through the 12th grade level.

The State is currently in the planning stages for the new University of Hawai'i Center at West Hawai'i, which will be located initially on a 33-acre portion of a larger 500-acre site on the *mauka* side of the Queen Ka'ahumanu Highway, directly *mauka* of the Kona International Airport. (See discussion in the next Section.) Upon completion, the new campus is anticipated to accommodate approximately 1,500 students.

### **5.4.3.3 Conformance with the Goals of the Plan**

The proposed project is consistent with the goals of the Educational Functional Plan. Because the state designates the property for urban expansion and the county's land use policy identifies the project area for low density urban, the project area's eventual development as a residential community is anticipated. The applicant acknowledges its obligation to provide a fair-share contribution to the State DOE.

## **5.4.4 State Higher Education Functional Plan (1984)**

### **5.4.4.1 Goals of the Plan**

The objectives of the State Higher Education Functional Plan are to provide (1) a number of diverse postsecondary education institutions; (2) quality educational, research, and public

services programs; (3) appropriate opportunities for all who can benefit; (4) financing to ensure accessibility; and (5) coordination of educational resources.

#### **5.4.4.2 Higher Education in the County of Hawai'i**

The University of Hawai'i at Hilo (located in Hilo on the east side of the island) provides alternative higher educational opportunities within the University of Hawai'i system through a variety of programs. The Hawai'i Community College provides access to higher education and workforce training for the entire County, and offers an extensive program of certificate and associate degree programs onsite and through distance education technologies. In West Hawai'i, in addition to the Hawai'i Community College programs, the college is responsible for the University of Hawai'i Center, through which it delivers baccalaureate and masters degree programs.

The State completed in 1998 a long-range development plan for a University of Hawai'i-West Hawai'i College, and is currently preparing an EIS for the initial development phase on a 33-acre portion of a 500-acre State-owned parcel. Just adjacent to the proposed campus, Hiluhilu Development LLC (Hiluhilu) plans to develop a 725-acre vacant parcel and has proposed to provide supporting infrastructure for the West Hawai'i College.

The project, which is known as Palamanui/University of Hawai'i-West Hawai'i College (formerly referred to as Hiluhilu Development) envisions a master planned community with a mix of single- and multi-family units, an 18-hole golf course, a university village center with commercial uses, university related uses, and a medical wellness center. Subject to an agreement with the University, plans include a mixture of classroom, offices, commercial areas, conference and community outreach facilities, parking, and athletic fields.

According to Hiluhilu's Final EIS, the residential component of the project 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. 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. Proposed commercial development includes 80,000 square feet of University Village commercial; 200,000 square feet for community commercial; 120,000 square feet for medical, and 220,000 square feet for research and development flex space.

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. The mission is to incorporate the philosophies of multidisciplinary educational programs with an emphasis on Hawaiian studies, a multicultural environment, a learning-centered focus using the island as a living laboratory, and a technically advanced campus well positioned to support the future needs of the community. The proposed project will bring many opportunities to the region in terms of research, education, training, economic development, and diversification. The West Hawai'i College will serve as a center for information technology, and will provide job training and educational opportunities for local residents and incoming students.

#### **5.4.4.3 Conformance with the Goals of the Plan**

The Kula Nei project includes a range of housing opportunities, including affordable housing, in direct response to the identified existing and future demand for primary market housing in North Kona. The current development schedule for Kula Nei suggests that the development will likely precede the commencement of classes at the West Hawai'i College. While the Kula Nei project only constitutes about four percent of anticipated housing development in North Kona, it will in its own small way contribute to the availability of market priced housing for faculty and staff.

## **5.4.5 State Employment Functional Plan (1990)**

### **5.4.5.1 Goals of the Plan**

The 1990 State Employment Functional Plan's objectives, policies, and implementing actions address four major issue areas: (1) education and preparation services for employment; (2) job placement; (3) quality of work life; and (4) employment planning information and coordination.

### **5.4.5.2 Employment Opportunities in West Hawai'i**

Employment opportunities on the island of Hawai'i have increased substantially and primarily have been created by the expanding visitor industry. A substantial amount of investor interest continues to flow into West Hawai'i, primarily the Kohala and Kona districts, which according to the Hawai'i County General Plan continue to accommodate the majority of the visitor market within the County. Over \$1 billion of planned construction of resort-residential complexes has been announced, in addition to the substantial investment already in place.

Annual employment for secondary industries, such as government, construction, trades (retail and wholesale), utilities, financial institutions, and professional services accounted for approximately 68 percent of the County's workforce. Kailua-Kona functions as the center for government, commercial, and industrial activities for West Hawai'i. Retail, banking services and "big-box" retailers such as Costco, K-Mart, and WalMart and international sporting events such as the IronMan are in Kona.

Additionally, diversified agriculture in West Hawai'i helps to broaden and diversify the economic base in terms of employment. Processing, manufacturing, and packaging are growing industries. Coffee production since the 1800s continues in the North and South Kona districts, with Kona coffee experiencing in 1982-1995 sales fluctuating between \$2.1 and \$8.7 million. Other agricultural enterprises include cattle ranching, aquaculture, and the growing of flowers, fruits, macadamia nuts, and vegetables. Timber and fishing are small industries in Kona. The Kailua-Kona Wharf is considered a major center for big game fishing and annual international tournaments. Quarrying operations for building materials are also conducted in North Kona. The old Kailua and Kaloko industrial areas provide the largest concentration of industrial activities

within West Hawai‘i, which accommodate a wide range of manufacturing, service, wholesale, and retail activities.

#### **5.4.5.3 Conformance with the Goals of the Plan**

The project’s primary contribution to employment will be through the provision of construction related jobs during the period from 2010 through 2017. It is estimated that the project will generate over 200 construction jobs during each of the first three years. This number will decline by over half for the remainder of the project.

From a broader perspective, the provision of primary market housing in North Kona fulfills the State and County goals of constructing housing in closer proximity to regional job centers.

#### **5.4.6 State Energy Functional Plan (1991)**

##### **5.4.6.1 Goals of the Plan**

The State Energy Functional Plan sought to (1) support the commercialization of Hawai‘i’s alternative energy resources, (2) implement a wide range of energy conservation and efficiency technologies; (3) prepare for disruptions in the energy supply; and (4) reduce the State’s dependence on imported fossil fuels, such as oil, for 90 percent of its total energy needs as opposed to 42 percent nationally.

The plan called for objectives and courses of action to lessen Hawai‘i’s dependence on imported fossil fuels. The objectives were to: (1) moderate the growth in energy demand through conservation and energy efficiency; (2) displace oil and fossil fuels through alternate and renewable energy sources; (3) promote energy education and legislation; (4) support and develop an integrated approach to energy development and management; (5) ensure the State’s abilities to implement energy emergency actions immediately in the event of fuel supply disruptions, and ensure essential public services are maintained and provisions are made to alleviate economic and personal hardships that may arise.

The State Legislature in 2001 passed a law establishing “renewable portfolio standard” goals for electric utilities of 7 percent by December 31, 2003, 8 percent by December 31, 2005, and 9 percent by December 31, 2010.

#### **5.4.6.2 Conformance with the Goals of the Plan**

As a residential subdivision, the project can contribute to energy efficiency in two arenas: transportation and residential energy consumption. From the perspective of transportation, the regional roadway connections that will result from the project’s implementation will contribute to an improvement in vehicular circulation in North Kona, which translate to fewer delays and less energy consumption. Specifically, extending Holoholo Street through the project area and mitigating project impacts with the installation of a traffic signal at the Holoholo Street/Kaiminani Drive intersection will improve level of service from “F” to “B”. Opportunities for improved energy efficiency at the residential level will range from ventilation design, landscaping, and the installation of energy saving devices including reduced consumption lighting fixtures.

#### **5.4.7 State Health Functional Plan (1989)**

##### **5.4.7.1 Goals of the Plan**

The 1989 State Health Functional Plan addressed six issue areas: (1) health promotion and disease prevention; (2) communicable disease prevention and control; (3) special populations with impaired access to health care; (4) healthcare services (acute, long-term, primary and emergent) for rural communities; (5) environmental health and protection; and (6) DOH leadership. The plan also sought to boost the long-term economy by attracting a share of the rapidly developing, affluent, wellness-oriented market. It also sought to develop and implement new environmental protection and health services that would protect, monitor, prevent degradation, and enhance the quality of Hawai‘i’s air, land, and water.

The DOH is responsible for establishing, monitoring, and enforcing the Water Quality Standards. These standards are intended to protect the environmental quality of the waters of the island and

maintain public health. The DOH is also responsible for establishing standards and regulations for noise control, which are uniform throughout the State.

#### **5.4.7.2 Health Conditions in the County of Hawai'i**

Hawai'i is recognized worldwide for its natural resources and pristine environment. The summits of Mauna Kea and Mauna Loa offer some of the best areas in the world for astronomy because of their optical clarity and accessibility. The island of Hawai'i and the other Hawaiian islands, escape major sources of man-made pollutants, because of their geographic isolation from mainland industries. However, as in any metropolitan area, there are pollution concerns over air quality, water contamination, and noise. (See Chapter 3 for an in-depth discussion.)

The major sources of air pollution on the Big Island are volcanic emissions, open burning, sprayed agricultural chemicals, modes of transportation, and fixed combustion sources such as power plant emissions. Natural pollutants from airborne dust are also contributing factors. Prevailing northeast trade winds and diurnal land and sea breezes form air circulation patterns that can create local concentrations of pollutants. In areas where the topography favors a confluence of air currents, the potential is great for hazy conditions to develop, especially if vehicular, volcanic, and other air pollution sources increase.

Surface water resources, coastal waters, and groundwater resources of the County of Hawai'i are vulnerable to contamination as population increases and further development occurs. According to County of Hawai'i data, the major sources of water pollution are sewage, natural surface runoff, and the by-products of agricultural activities. Recycled water is currently being used for erosion and dust control at lined landfills, and there may be a need in the future to recycle sewage and wastewater effluent for use in irrigation. There are five municipal sewage systems with treatment plants that serve limited areas. As a result, only a small portion of the County of Hawai'i's sewage is treated. Most sewage is disposed of in private cesspools, septic systems, or private WWTPs that must meet the State DOH water quality standards. The State DOH intends to promulgate rules that will prohibit the installation of cesspools.

Loud noises are known to have adverse physiological and psychological effects on people. Residential and resort areas near airports are particularly affected. Increased air transportation activity and changes in aeronautical technology could change the "noise contours" that affect lands surrounding the Kona International Airport at Keāhole and Hilo International Airport. The County recommends appropriate easements and/or covenants be required in conjunction with land use approvals for lands in the vicinity of the airports to eliminate the likelihood of surrounding land use development conflicting with future airport activity and/or expansion.

#### **5.4.7.3 Conformance to the Goals of the Plan**

The Kula Nei project is relevant to the State Health Function Plan in two ways. First, construction will conform to DOH regulations concerning erosion control, fugitive dust, solid waste disposal, and noise controls. Second, the project's proposed wastewater collection and treatment strategy, which includes a combination of individual septic systems and a privately funded and operated treatment plant, will fulfill the goal of improving environmental health and protection.

#### **5.4.8 State Historic Preservation Functional Plan (1991)**

##### **5.4.8.1 Goals of the Plan**

The State Historic Functional Plan identifies issues, policies, and implementing actions that seek to preserve and protect the unsurpassable beauty, history, and culture of the Hawaiian islands. Hawai'i's natural scenic beauty, clean environment, and rich multi-cultural heritage (including historic/cultural sites) are reasons why so many people have made Hawai'i their home, and why so many visit the State.

##### **5.4.8.2 Historic Preservation Sites in the County of Hawai'i**

According to the DLNR's SHPD, an estimated 11,500 archeological and historic sites have been identified on the island of Hawai'i. However, only 5 percent of the island has been surveyed, and the other 95 percent of the island contains an undeterminable number of historic and archeological sites. The abundance of historic sites can be attributed to the fact that much of the

early history of the Hawaiian islands had its setting on the island of Hawaii. Archeological data indicates that Polynesian voyagers may have settled there as early as 600 A.D.

#### **5.4.8.3 Conformance to the Goals of the Plan**

Archaeological inventory surveys have been conducted on the subject property and a cultural impact assessment has been prepared. Together, these documents provide a greater understanding of project area's historic resources. Sites conforming to the significance criteria established under state and federal regulations will be preserved in coordination and consultation with the SHPD.

#### **5.4.9 State Housing Functional Plan (1989, 1990)**

##### **5.4.9.1 Goals of the Plan**

The 1990 State Housing Functional Plan identified a need to develop affordable housing throughout the State, and found that the housing needs of lower income households would not be adequately met in future residential developments. Obstacles identified to the development of affordable housing include (1) the lack of infrastructure, particularly on the neighbor islands; (2) the high cost of zoned land, high development costs, and the regulatory system particularly on O'ahu; (3) government policies that have created a shortage of urban land zoned for housing; (4) lack of government funds to develop rental housing; (5) building codes and subdivision standards that constrain innovative, cost-saving technologies; and (6) current labor wages. The Plan recommended increased densities in residential developments where feasible, smaller and basic units, funding for rental developments, and state subsidies.

##### **5.4.9.2 Housing on-in the County of Hawai'i**

The population of the island of Hawai'i has been growing for decades, but the rate of growth has been slowing. If historic trends continue, the North Kona population will near 44,000 in 2020, nearly double of its 1990 population. This project growth rate is slightly lower than the districts of Puna and South Hilo.

In Hawai'i County in 2006, 9.9 percent of single family properties and 16 percent of residential condominiums had out-of-state owners. Non-residents are also disproportionately involved in real estate purchases. From 2001 to 2005, about 35 percent of Hawai'i County single-family house sales and 75 percent of condominium sales had out-of-state buyers.

In North Kona, the Kaloko Heights project south of Kula Nei and the Palamanui project north of Keāhole Airport could add more than 2,300 units to the local residential housing stock.

#### **5.4.9.3 Conformance to the Goals of the Plan**

Due to its size, the Kula Nei project is anticipated to have a limited impact upon the housing market and the regional economy. The project will respond to the demand of a growing population for homes. However, it is unlikely to attract new residents or visitors to Hawai'i who would not come if the project were not built, largely due to the fact that it is not in close proximity to a resort area. Research has found that in Hawai'i housing markets, non-residents tend to purchase homes within resort areas and nearby. Thus, the Kula Nei project is supportive of the Housing Functional Plan's goals of providing more homes for Hawai'i's population. In addition, the project's affordable housing component will address the demand for affordable homes in West Hawai'i.

#### **5.4.10 State Human Services Functional Plan (1989)**

##### **5.4.10.1 Goals of the Plan**

The Human Services Functional Plan addressed: (1) elder abuse; (2) child abuse and neglect; and (3) spouse/domestic abuse and violence. The plan details statistics, causes, and prevention measures that can help to combat very pressing societal issues.

##### **5.4.10.2 Conformance to the Goals of the Plan**

The applicant's petition for a boundary amendment will have a negligible effect on this plan.

## **5.4.11 State Recreation Functional Plan (1991)**

### **5.4.11.1 Goals of the Plan**

The 1991 State Recreation Functional Plan focused on six issue areas: (1) ocean and shoreline recreation; (2) *mauka*, urban, and other recreation; (3) public access to the shoreline and upland recreation areas; (4) resource conservation and management, (5) management of recreation programs and facilities; and (6) wetlands protection and management.

### **5.4.11.2 Recreation in West Hawai'i**

The County expects heavy demand on recreational resources as a result of an expanding population and a growing number of visitors in West Hawai'i. According to the County of Hawai'i General Plan, existing recreational areas and facilities in the North Kona district are being targeted for improvements and expansion as the area is generally inadequate. Approximately 27,400 residents are presently served by only nine County parks. Improved and expanded recreational facilities that support the proper ratio of 5.0 acres of recreation area for every 1,000 people are a part of the County's goals.

Some of the new or improved areas in the region include the newly completed Kealakehe High School, which offers facilities that are open to the public during non-school hours. The Kailua Park (Old Kona Airport) consists of 34 acres and provides lighted fields for baseball, softball, and football. New baseball and soccer fields were recently constructed. Also situated here are four lighted tennis courts, the old terminal building houses restrooms, offices, and a meeting place. A multipurpose gymnasium was completed in 1993 and a 50-meter olympic-size swimming pool was completed in 1999. The County has three developed beach parks in North Kona. There are three small boat harbors in the district: Kailua Bay, Keauhou, and Honokōhau. Honokōhau harbor has a capacity for 450 small boats and has other facilities to accommodate boat repair, restaurant, dry storage, etc.<sup>3</sup>

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<sup>3</sup> Data from this section obtained from the 2001 County of Hawai'i Proposed General Plan.

### **5.4.11.3 Conformance to the Goals of the Plan**

By including a three-acre park within the Primary Project Area, the Kula Nei project will help to address the recreational needs of its residents. The preservation of Homestead Road as a pedestrian trail will also help to provide Kula Nei residents with a scenic access way to surrounding properties.

### **5.4.12 State Tourism Functional Plan (1991)**

#### **5.4.12.1 Goals of the Plan**

The 1991 State Tourism Functional Plan focused on six issues: (1) the positive and negative impacts of tourism growth on the community; (2) physical development in terms of product quality, product diversity, land use planning, adequate infrastructure, and visitor use of public services; (3) environmental resources and cultural heritage; (4) community, visitor, and industry relations; (5) employment and career development; and (6) effective marketing.

The plan primarily sought to strengthen tourism, while developing other industries to diversify the State's economic base in order to reduce its vulnerability from the fluctuations of a single market.

#### **5.4.12.2 Tourism in West Hawai'i**

Current growth in the County of Hawai'i in terms of employment, population, income, and economic activity has been more closely tied to the visitor industry than any other sector of the economy. Employment opportunities spurred by the growth of tourism has been the catalyst for economic growth in the County. A substantial amount of investor interest continues to flow into West Hawai'i primarily the Kohala and Kona districts, which according to the Hawai'i County General Plan continues to accommodate the majority of the visitor market within the County. Over \$1 billion of planned construction of resort-residential complexes have been announced, in addition to the substantial investment already in place. Various resort and resort-residential complexes are currently under construction or are planned for construction in the near future. Continued investor interest in resort and resort-residential development in the County suggests

an economic future that promises new jobs and more commercial, recreational, and cultural activities.<sup>4</sup>

### **5.4.12.3 Conformance with the Plan**

While the Kula Nei project has no direct relationship with the visitor industry, it plays an important indirect role. The availability of new housing opportunities, especially primary market and affordable housing, in reasonable proximity to the visitor destination areas of North and South Kona is vital to the health of the industry.

### **5.4.13 State Transportation Functional Plan (1991)**

#### **5.4.13.1 Goals of the Plan**

The 1991 State Transportation Functional Plan sought to (1) construct facility and infrastructure improvements in support of Hawai'i's thriving economy and growing population base; (2) develop a transportation system balanced with an array of new alternatives; (3) implement Transportation Systems Management to maximize the use of existing facilities and systems; (4) foster innovation and use of new technology in transportation; (5) maximize joint efforts with the private sector; (6) pursue land use initiatives which help reduce travel demand; (7) encourage resident quality-of-life improvements through improved mobility opportunities and travel reduction.

#### **5.4.13.2 Transportation Conditions in West Hawai'i**

Kona International Airport at Keāhole occupies 3,450 acres of land about seven miles northwest of Kailua-Kona and just over a mile northwest of the Kula Nei project.

The major traffic arteries serving the North Kona district are the Hawai'i Belt Highway (Māmalahoa) connecting Kona with South Kohala and Ka'ū, Queen Ka'ahumanu Highway, Kuakini Highway connecting Kailua with the *mauka* Keauhou area, and Alii Drive serving the shoreline areas between Kailua and Keauhou. The latter of these systems is the only access to

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<sup>4</sup> Data for this section obtained from the 2001 County of Hawai'i Proposed General Plan and the Hawai'i Tourism Authority (HTA) 2002 Annual Report to the Legislature.

areas along the shoreline between Kailua and Keauhou. *Mauka-makai* access between Māmalahoa Highway and the Queen Ka‘ahumanu Highway is provided by Kaiminani Drive, Hina Lani Drive and Palani Road. Currently in its design stage, the proposed Kahului-Keauhou Parkway (formerly known as the Alii Highway) will provide another north-south arterial between its northern connection to the Queen Ka‘ahumanu Highway at Kahului *ahupua‘a* and its southern terminus at the Alii Drive-Kamehameha III Road intersection in Keauhou.

Māmalahoa Highway is the only arterial roadway currently serving all of the South Kona District. Many portions of this roadway are narrow and winding. Lands *mauka* and *makai* of this roadway are served by private and County-owned collector roadways, many in poor condition.

The Hawai‘i County Mass Transit Agency provides public transportation around the island on the Hele-On bus. In addition, the Transit Agency offers a Shared Ride Taxi program which provides door-to-door transportation for as little as \$2.00 within the urbanized area of Hilo and Kona.

Recent economic growth and prosperity in West Hawai‘i, have brought traffic congestion, which has worsened appreciably on Queen Ka‘ahumanu Highway and on the Hawai‘i Belt Road between Kailua and South Kona. However, plans are under way for highway improvements for both State and County roads, including widening of Queen Ka‘ahumanu Highway between Kailua-Kona and the airport.

#### **5.4.13.3 Conformance with the Plan**

The Kula Nei project will become an important element of the regional transportation network because its development will help fund the extension of Holoholo Street, linking Kaiminani to Hina Lani. Providing routing alternatives to Queen Ka‘ahumanu and Māmalahoa Highways will help to reduce congestion on these regional serving arterials.

## **5.4.14 State Water Resources Development Functional Plan (1984)**

### **5.4.14.1 Goals of the Plan**

The 1984 State Water Resources Development Functional Plan set objectives to: (1) clarify the State water policy and improve management framework; (2) maintain the long-term availability of freshwater supplies while considering environmental values; (3) improve management of flood plains; (4) assure adequate municipal water supplies for planned urban growth; (5) assure the availability of adequate water for agriculture; (6) encourage and coordinate development of self-supplied industrial water and the production of water-based energy; (7) provide for the protection and enhancement of Hawai‘i’s freshwater and estuarine environment; (8) improve state grant and loan procedures for water programs and projects; and (9) pursue water resources data collection and research to meet changing needs.

### **5.4.14.2 Water Conditions in West Hawai‘i**

Over the past 15 years, West Hawai‘i has experienced tremendous growth in population and resort development, accompanied by a reliance on the available ground-water resources. In the early 1990s, there was fierce competition for water resources among landowners, developers, and other water purveyors in the region. The State LUC on Water Resource Management (CWRM) stepped in and found they needed to gather pertinent data on baseline water levels in order to mediate the problem and avoid major disputes. A 1991 – 2002 report, *A Study of the Ground-Water Conditions in North and South Kona and South Kohala Districts, Island of Hawaii* is ongoing and presents over 10 years of baseline water level data. Many wells were drilled in the region during the past 10 years by private landowners, public utilities, and the State, who invested large sums of money to drill these wells for the economic benefit of the island and the State. The CWRM credited these entities for allowing access to their wells for data collection and sampling used in the report.<sup>5</sup>

The Kula Nei project is located on the western flank of Hualālai where the ground surface is highly permeable and storm water runoff does not occur. Two modes of groundwater occur in

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<sup>5</sup> Data obtained from DLNR website (<http://www.hawaii.gov/dlnr/cwrn/data/reports/pr200301.pdf>)

the general vicinity: (1) a thin, brackish to saline basal lens underlying the entire coastal zone; and (2) high-level groundwater near the vicinity of Māmaloahoa Highway and extending 20 miles from Kalaoa to Kealahou.

#### **5.4.14.3 Conformance with the Plan**

The Kula Nei project includes a new regional potable water well and storage reservoir to be constructed at an elevation of 1,815 feet above sea level. The transmission system to be installed by the applicant will be integrated into the county's regional distribution system significantly improving water supply, storage, and transmission in the vicinity of the project. In so doing, the Kula Nei project conforms to many of the goals of the State Water Functional Plan.

## **5.5 HAWAI'I 2050**

The following information is presented at <http://hawaii2050.org>.

*Act 8, SSLH 2005, required the Auditor and a newly created Hawai'i 2050 Sustainability Task Force to review the Hawai'i State Plan and the related functional plans and to prepare the Sustainability Plan to define and implement State goals, objectives, policies, and priority guidelines. Hawai'i 2050 seeks to engage in a dynamic and inclusive process, reaching out to all communities in a variety of settings to ensure maximum participation and communication.*

*In looking forward to the future of our state, the objectives of Hawai'i 2050 are to:*

- *Create a new state planning process that will:
  - (1) *guide the decisions of our policymakers, our communities, and individuals to create a sustainable Hawai'i; and*
  - (2) *reflect the collective values, priorities, and aspirations of residents throughout the State about the kind of Hawai'i we want.**
- *Engage and involve as many residents as possible in an open and meaningful discussion about Hawai'i's preferred future.*

- *Establish a mechanism to ensure that our unique islands and way of life are maintained and sustained for current and future generations to enjoy.*

### *Communities*

*In developing a plan to create sustainable communities throughout our state, Hawai‘i 2050 seeks to foster dynamic, cohesive, fair and collaborative communities where residents can reach their personal aspirations. Issues related to population growth, carrying capacity, governance, justice and equity, and living within an island-based community will be addressed.*

### *Environment*

*In creating a sustainable environment, Hawai‘i 2050 looks to address the appropriate and long-range plans and public use relating to water, land use (including housing), energy, food production, waste, air, pollution, and environmental quality.*

### *Economy*

*Hawai‘i 2050 strives to ensure that the state’s economy is well diversified and sufficient to provide Hawai‘i residents with economic opportunities, including earning a living wage, to live a sustainable lifestyle.*

### *Quality of Life*

*The Hawai‘i 2050 task force seeks to ensure that the qualities and characteristics of Hawai‘i’s island lifestyle are preserved and perpetuated, and are embodied in the sustainability plan. To this end, the sustainability plan should address health, human services, education, recreation, culture, arts, and other aspects of quality of life.*

*The Hawai‘i 2050 Sustainability Plan is one of the most comprehensive and important public policy and strategic planning activities embarked on by State government in three decades. The State Auditor has been designated to oversee this challenging task. The Sustainability Plan will be a roadmap to guide State and county government policies for the next four decades in*

*developing a sustainable Hawai‘i; and will provide the vision, values, direction, planning, and budgetary priorities on a wide variety of issues impacting the people of Hawai‘i.*

*Significant collaboration between State and county governments, community organizations, and citizens is critical to forming a Sustainability Plan that will meet the needs of Hawai‘i’s citizens in relation to land and water use, energy, public infrastructure, economic development, transportation, education, the arts, health, quality of life, and the host of public policy issues embodied in the current Hawai‘i State Plan and the Hawai‘i Quality Growth Policy.*

The 2050 Task Force has been meeting for just over a year and is presently engaged in surveying attitudes statewide about sustainability. It is also presently developing a series of issue papers that will be published later this year.

At the time this EIS is being prepared, the issue papers are not yet available for comment. As the process of preparing a Sustainability Plan is anticipated to take one or more years, there is presently insufficient information for this EIS to consider, and the effects of the Sustainability Plan upon the project are unresolved.

## **5.6 HAWAI‘I WATER CODE**

In 1987, the State Legislature adopted the Hawai‘i Water Code as HRS Chapter 174C, as amended, to “protect, control, and regulate the use of Hawai‘i’s water resources for the benefit of its people.” The CWRM administers the water code. The Code’s policies include the (1) protection of water resources, maintenance of ecological balance and scenic quality with regard to the development of new resources; (2) improvement of water quality; and (3) the establishment of comprehensive water planning statewide. A major element of the code is the development of the Hawai‘i Water Plan.

The State Water Code pursuant to HRS 174-2(c) allows “maximum beneficial use of the waters of the State for purposes such as domestic uses, aquaculture uses, irrigation and other agricultural uses, power development, and commercial and industrial uses.” Furthermore, the Code shall be

liberally interpreted and applied in a manner, which conforms with intentions and plans of the counties in terms of land use planning.

## **5.7 STATE OF HAWAI'I WATER PLAN**

The Hawai'i Water Plan, under HRS Section 174C-31, consists of four parts: (1) a water resource protection plan prepared by the water commission; (2) water use and development plans for each county prepared by each separate county and adopted by ordinance, setting forth the allocation of water to land use in that county; (3) a state water projects plan prepared by the agency which has jurisdiction over such projects in conjunction with other state agencies; and (4) a water quality plan prepared by the DOH.

All water use and development plans shall be conditioned upon and be consistent with: (1) water resource protection and water quality plans; (2) respective county land use plans and policies including general plan and zoning as determined by each respective county; (3) state land use classification and policies.

To prepare the water resource protection and water quality plans, the LUC shall assess the quantity and quality of water needed for existing and contemplated uses, including irrigation, power development, geothermal power, and municipal uses.

## **5.8 STATE UNDERGROUND INJECTION CONTROL (UIC) PROGRAM**

The Safe Drinking Water Act of 1974 legislated the protection of all aquifers, portions of aquifers, and any potential aquifer capable of yielding consumable drinking water sources. This mandate was based on increased evidence of contamination of this valuable resource and on a national concern for the quality of groundwater.

In 1976, the State Legislature enacted Act 84, relating to Safe Drinking Water, which required the State DOH to establish an UIC program to protect the quality of underground sources of drinking water. The UIC program identifies aquifers that should be protected from subsurface disposal of wastewater through injection wells, and designates areas now being used or could

potentially be used for drinking water. The underground sources of drinking water (USDW) are protected and the program prohibits the construction of new injection wells that may pollute the USDW. Injection wells are allowed in exempted areas. The boundary lines, known as the UIC line, between the USDW and the exempted areas have been developed, with a 1,000-foot setback of wastewater systems from all public drinking water wells and springs.

The subject property is situated *mauka* of the UIC line and injection wells are not permissible in this area, without affecting USDW.

## 5.9 STATE ENVIRONMENTAL POLICY

HRS Chapter 344 establishes an environmental policy that (1) encourages productive and enjoyable harmony between people and their environment; (2) promotes efforts to prevent or eliminate damage to the environment and biosphere; (3) stimulates the health and welfare of humanity; and (4) enriches the understanding of the ecological systems and natural resources important to the people of Hawai‘i.

HRS Section 344-2 defines “environment” as the complex of physical and biological conditions that influence human well-being, including land, air, water, minerals, flora, fauna, energy, noise, and places of historic or aesthetic significance.

An electrical generating station, while necessary, also generates concerns over emissions and other environmental issues. The following table, identified as Table 5-3, contains the policies of the State Environmental Policy, HRS Section 344, and discusses the relationship and applicability, if any, of the policy to Kula Nei’s petition for a boundary amendment.

**Table 5-3: STATE ENVIRONMENTAL POLICY**

SECTION	STATE ENVIRONMENTAL POLICY	RATING
A = actively supportive C = conforms I = goal is inconsistent with applicant’s objectives NA = goal is not applicable		
344-3	ENVIRONMENTAL POLICY. It shall be the policy of the State, through its programs, authorities, and resources to:	
(1)	Conserve the natural resources, so that land, water, mineral, visual, air and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State's unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in	C

SECTION	STATE ENVIRONMENTAL POLICY	RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>		
	productive harmony, and fulfill the social, economic, and other requirements of the people of Hawai'i.	
(2)	Enhance the quality of life by:	
(A)	Setting population limits so that the interaction between the natural and artificial environments and the population is mutually beneficial;	C
(B)	Creating opportunities for the residents of Hawai'i to improve their quality of life through diverse economic activities which are stable and in balance with the physical and social environments;	C
(C)	Establishing communities which provide a sense of identity, wise use of land, efficient transportation, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian; and	A
(D)	Establishing a commitment on the part of each person to protect an enhance Hawai'i's environment and reduce the drain on nonrenewable resources.	A
344-4	GUIDELINES. In pursuance of the state policy to conserve the natural resources and enhance the quality of life, all agencies, in the development of programs, shall, insofar as practicable, consider the following guidelines:	
(1)	POPULATION.	
(A)	Recognize population impact as a major factor in environmental degradation and adopt guidelines to alleviate this impact and minimize future degradation;	C
(B)	Recognize optimum population levels for counties and districts within the State, keeping in mind that these will change with technology and circumstance, and adopt guidelines to limit population to the levels determined.	C
(2)	LAND, WATER, MINERAL, VISUAL, AIR, AND OTHER NATURAL RESOURCES.	
(A)	Encourage management practices which conserve and fully utilize all natural resources;	A
(B)	Promote irrigation and waste water management practices which conserve and fully utilize vital water resources;	A
(C)	Promote the recycling of waste water;	A
(D)	Encourage management practices which conserve and protect watersheds and water sources, forest, and open space areas;	A
(E)	Establish and maintain natural area preserves, wildlife preserves, forest reserves, marine preserves, and unique ecological preserves;	NA
(F)	Maintain an integrated system of state land use planning which coordinates the state and county general plans.	C
(G)	Promote the optimal use of solid wastes through programs of waste prevention, energy resource recovery, and recycling so that all our wastes become utilized.	A
(3)	FLORA AND FAUNA.	
(A)	Protect endangered species of indigenous plants and animals and introduce new plants or animals only upon assurance of negligible ecological hazard;	C
(B)	Foster the planting of native as well as other trees, shrubs, and flowering plants compatible to the enhancement of our environment.	C
(4)	Parks, recreation, and open space.	
(A)	Establish, preserve and maintain scenic, historic, cultural, park and recreation areas, including the shorelines, for public recreational, educational, and scientific uses;	A

SECTION	STATE ENVIRONMENTAL POLICY	RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>		
(B)	Protect the shorelines of the State from encroachment of artificial improvements, structures, and activities;	NA
(C)	Promote open space in view of its natural beauty not only as a natural resource but as an ennobling, living environment for its people.	C
(5)	ECONOMIC DEVELOPMENT.	
(A)	Encourage industries in Hawai'i which would be in harmony with our environment;	C
(B)	Promote and foster the agricultural industry of the State; and preserve and conserve productive agricultural lands;	C
(C)	Encourage federal activities in Hawai'i to protect the environment;	NA
(D)	Encourage all industries including the fishing, aquaculture, oceanography, recreation, and forest products industries to protect the environment;	NA
(E)	Establish visitor destination areas with planning controls which shall include but not be limited to the number of rooms;	NA
(F)	Promote and foster the aquaculture industry of the State; and preserve and conserve productive aquacultural lands.	NA
(6)	TRANSPORTATION.	
(A)	Encourage transportation systems in harmony with the lifestyle of the people and environment of the State;	A
(B)	Adopt guidelines to alleviate environmental degradation caused by motor vehicles;	A
(C)	Encourage public and private vehicles and transportation systems to conserve energy, reduce pollution emission, including noise, and provide safe and convenient accommodations for their users.	A
(7)	ENERGY.	
(A)	Encourage the efficient use of energy resources.	A
(8)	COMMUNITY LIFE AND HOUSING.	
(A)	Foster lifestyles compatible with the environment; preserve the variety of lifestyles traditional to Hawai'i through the design and maintenance of neighborhoods which reflect the culture and mores of the community;	A
(B)	Develop communities which provide a sense of identity and social satisfaction in harmony with the environment and provide internal opportunities for shopping, employment, education, and recreation;	A
(C)	Encourage the reduction of environmental pollution which may degrade a community;	A
(D)	Foster safe, sanitary, and decent homes;	A
(E)	Recognize community appearances as major economic and aesthetic assets of the counties and the State; encourage green belts, plantings, and landscape plans and designs in urban areas; and preserve and promote mountain-to-ocean vistas.	A
(9)	EDUCATION AND CULTURE.	
(A)	Foster culture and the arts and promote their linkage to the enhancement of the environment;	A
(B)	Encourage both formal and informal environmental education to all age groups.	A
(10)	CITIZEN PARTICIPATION.	
(A)	Encourage all individuals in the State to adopt a moral ethic to respect the natural environment; to reduce waste and excessive consumption; and to fulfill the responsibility as trustees of the environment for the present and succeeding generations; and	A

SECTION	STATE ENVIRONMENTAL POLICY	RATING
A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable		
(B)	Provide for expanding citizen participation in the decision making process so it continually embraces more citizens and more issues.	A

## 5.10 WEST HAWAI'I REGIONAL PLAN (1989)

The Office of State Planning in 1989, under former Governor John Waihee, produced the West Hawai'i Regional Plan to guide the development of the region. The State formulated the plan to (1) coordinate State activities in West Hawai'i and respond effectively to emerging needs and critical problems; (2) address areas of State concern; (3) coordinate the Capital Improvements Program; and (4) provide guidance in the State land-use decision-making process. Contributors to the plan included the West Hawai'i community, Federal, State, and County agencies.

The following table, identified as 5-4, presents the general goals of *The Vision for West Hawai'i Plan*, and two pertinent sections, *Urban Expansion Planning Areas*, and *Highways and Roadways*.

**Table 5-4: WEST HAWAI'I REGIONAL PLAN**

GENERAL GOALS AND OBJECTIVES FOR THE VISIONS OF WEST HAWAI'I	RATING
A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable	
Plan and maximize benefits for Hawai'i's people.	A
Optimize the use of State-owned lands.	A
Promote a diversified economic base which maximizes job choice and opportunities.	A
Ensure access to and adequacy of health, education, job-training, and human service programs.	NA
Ensure provision and adequacy of affordable housing.	A
Minimize adverse impact of new development on local lifestyles, historic and cultural resources and community values.	A
Provide a wide range of outdoor recreational opportunities.	A
Protect scenic areas, natural landmarks, open space, and viewsheds.	C
Ensure that existing and proposed developments can be adequately accommodated.	A
Support urban developments that maintain the unique character of the West Hawai'i region.	A
Protect State investments of the Natural Energy Laboratory of Hawai'i, the Hawai'i Ocean Science and Technology Park, Keāhole Airport, and the Mauna Kea observatories.	NA
Ensure that new development does not adversely impact:	
agricultural resource activities;	C

GENERAL GOALS AND OBJECTIVES FOR THE VISIONS OF WEST HAWAI'I	RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
aquacultural resource activities;	C
the quality of the aquifer	C
the quality of nearshore waters (including anchialine ponds)	C
the quality of offshore and deep ocean waters	NA
the quality of air	A
the watersheds	A
Ensure that the servicing of resort development does not result in unnecessary in-migration.	C
Ensure the clustering of resorts in order to minimize public service costs.	NA
Promote quality and diversity in future resort developments.	A
Develop only within infrastructure capacities and constraints.	A
Maintain the diversity of the region's natural and cultural assets.	C
Maintain the diversity and character of existing communities.	C
Ensure that development does not lead to deterioration in the quality of life.	A
Maintain opportunities for community participation during plan implementation.	A
<b>COMMENTARY: The Kula Nei project is consistent with and supportive of the goals of the West Hawai'i Regional Plan.</b>	
<b>URBAN EXPANSION PLANNING AREAS</b>	
<b>PROBLEM STATEMENT</b>	
The Urban Expansion Planning Areas are sub-regions that will be planned by the County's Planning Department. The County's planning process will include the State, existing landowners, and affected governmental agencies. As part of this planning effort, infrastructure requirements of all landowners will be determined and "sized" in order to attend to existing and anticipated problems. Opportunities for joint infrastructure financing, economies of scale, and creative urban design will be explored and developed in order to provide an environment that can support the "preferred" quality of life.	A
<b>STRATEGY</b>	
Concentrate future regional urbanization in designated Urban Expansion Planning Areas and provide for their planning and future development in a manner which optimizes or mitigates sub-regional problems, issues, and opportunities.	A
<b>ACTIONS</b>	
Direct future regional urbanization to designated Urban Expansion Planning Areas at Kailua-Kona to Keāhole and Kawaihae to Waimea.	A
Formulate a joint public/private sector community development plan for each Urban Expansion Planning Area.	A
Encourage in-fill of urban areas between Kailua-Kona and Keauhou.	NA
<b>COMMENTARY: The Kula Nei project area is located within the Urban Expansion Planning Area between Kailua-Kona and Keāhole.</b>	
<b>HIGHWAYS AND ROADWAYS</b>	
<b>PROBLEM STATEMENTS</b>	
Increased traffic flow which will occur as a result of workers community from support communities to the resort areas is another problem which must be anticipated.	
<b>STRATEGY</b>	

GENERAL GOALS AND OBJECTIVES FOR THE VISIONS OF WEST HAWAI'I	RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
Anticipate and provide relief for traffic hazards and congestion on a timely basis.	A
<b>ACTIONS</b>	
Support the DOT's Countywide Transportation Planning Process (CTPP)	A
Investigate the feasibility of a mass transit for the region.	NA
<b>COMMENTARY: The implementation of roadway improvements to improve the regional network is consistent with the goals of the plan. Due to the project's location on the slope of Hualālai and its distance from Queen Ka'ahumanu Highway, mass transit is not feasible for the project area.</b>	

## 5.11 STATE ENVIRONMENTAL IMPACT STATEMENT REQUIREMENTS SIGNIFICANCE CRITERIA

HAR, Section 11-200-12, establishes thirteen (13) significance criteria which agencies shall use in evaluating an action's impacts. Following is a discussion of how the proposed action relates to the thirteen criteria.

*Pursuant to subparagraph 12, ...an action shall be determined to have a significant effect on the environment if it:*

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

**Discussion:** The subject property includes a number of significant natural and cultural resources that have been identified through archaeological inventory surveys and a cultural impact assessment, including burial sites, a *mauka/makai* trail (aka Homestead Road) and boundary walls, and a lava tube segment with water collection features. All of these sites are proposed for preservation in accordance with the archaeological and cultural impact studies. Other notable archaeological features documenting habitation and agricultural activities on the site are proposed to be the subject of data recovery activities. There are no ongoing cultural practices identified relative to the land within the subject property.

(2) *Curtails the range of beneficial uses of the environment:*

**Discussion:** The range of beneficial uses of the property's environment is guided both by the County's General Plan which designates the undeveloped property for Low Density Urban uses and the County's Kona Regional Circulation Plan for the Keāhole to Hōnaunau region, which identifies the extension of Holoholo Street as necessary to completing a secondary regional road network. The proposed project increases the range of beneficial uses for the environment by providing low density primary market housing, parks and greenbelts, and increased connectivity with surrounding roads, services, and public facilities.

(3) *Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;*

**Discussion:** The stated purpose of Chapter 344 is to establish a state policy which will encourage productive and enjoyable harmony between people and their environment, promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, and enrich the understanding of the ecological systems and natural resources important to the people of Hawai'i. The proposed project complies with the policies, goals and guidelines of Chapter 344. The project proposes to create a primary market residential community on lands suitable for residential living with a park and greenbelts, while also retaining significant archaeological and cultural resources on the property.

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

**Discussion:** Development of the property for residential purposes is consistent with the County's desire to focus growth in West Hawai'i in the region between Keāhole and Kailua-Kona. The proposed project will provide additional opportunities for Hawai'i residents to live close to existing employment centers in West Hawai'i (e.g., Kailua-Kona, Keāhole/NELHA [Natural Energy Laboratory Hawai'i Authority], South Kohala resorts, etc.).

(5) *Substantially affects public health;*

**Discussion:** The proposed project is anticipated to have negligible impact on public health, as the applicant proposes to develop a regional potable water source, provide a combination of individual wastewater systems and a private WWTP.

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

**Discussion:** The proposed project will result in the addition of approximately 270 households within the various residential units on the subject property. The addition of this population is anticipated to increase demand on public facilities, including the area's schools.

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

**Discussion:** The proposed project will involve extensive ground disturbance, including clearing, grubbing, and grading of the property. The site development activities are necessary for the development of smaller residential lots on relatively sloping terrain.

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

**Discussion:** The proposed project is modest in scale relative to other existing and planned residential communities in the region. Future planned residential developments in the region include those at the neighboring Kaloko Heights (approximately 800± units in phase one and 1,500± units total) and at Palamanui (approximately 845± units). Both of these developments are understood to be focused on primary market housing. It is anticipated that there is a cumulative effect related to the total residential development in the region, both positive in terms of creating residential opportunities for Hawai'i residents and locating residents closer to major urban centers, and potentially negative in terms of the cumulative traffic impacts. (As discussed in Chapter 3, the traffic impacts of the Kula Nei project can be largely mitigated to acceptable levels.)

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

**Discussion:** No rare, threatened, or endangered species or related habitats have been identified on the subject property. One plant found on the property is listed as a species of concern including the *'Ohe makai*, and another plant is listed as a candidate endangered species, namely the *Ko'oko'olau*.

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

The project will generate increased motor vehicle use in the area which may affect air quality. The project proposes to meet its wastewater needs through a combination of individual wastewater systems on larger lots and a private WWTP to accommodate smaller lots and multifamily units. Disposal will be accommodated through horizontal disposal beds on-site. Ambient noise levels are not anticipated to be affected in the project area due to the relative low density of development.

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

**Discussion:** The subject property is situated within a Zone 4 volcanic hazard zone (on a scale of 1 to 9 with 1 representing the most hazardous and 9 the least hazardous), which covers all of Hualālai volcano. The property is also situated within a Zone 4 seismic zone, which is the highest zoning designation on a scale of 0 to 4. Proposed structures in the subject development will conform to all relevant building code requirements, including applicable seismic design standards.

(12) *Substantially affects scenic vistas and viewplanes identified in county or state plans or studies,*

**Discussion:** The subject property is not identified as scenic vistas or viewplanes on county or the state plans or studies.

(13) *Requires substantial energy consumption.*

**Discussion:** Energy consumption will be increased in relation to the proposed residential development. The demand for energy will be estimated and the adequacy of available energy sources is included in Chapter 3 of the EIS.

## **FEDERAL LAWS AND CONTROLS**

### **5.12 COASTAL ZONE MANAGEMENT ACT (HRS CHAPTER 205A)**

Federal Coastal Zone Management (CZM) enforcement authority (Public Law 92-583), as amended, has been delegated to the State and enacted as HRS Chapter 205A. The Hawai‘i CZM Program was promulgated in 1977 in response to the Federal CZM Act of 1972. Other than the review of federal applicants, federal permits, or federal activities, the State CZM review authority has been delegated to the county level through the Special Management Area (SMA) controls for development along the shoreline.

The CZM area encompasses the entire State including all marine waters seaward to the extent of the State’s police power and management authority, including the 12-mile U.S. territorial sea and all archipelagic waters. The CZM Act is comprised of a number of objectives primarily related to (1) protecting and preserving the coastal zone; (2) improving the quality of coastal scenic and open space resources and ensuring that coastal dependent development such as harbors and ports, and coastal-related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and (3) encouraging research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Following is a summary of the project’s conformance with the ten objectives of the coastal zone management program.

*1A Provide coastal recreation opportunities accessible to the public.*

Not applicable, as the project is approximately 4 miles from the coastline.

*2A Protect, preserve, and where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.*

Several archaeological sites identified at the project area have been determined to be significant and will be preserved. These include Homestead Road which will be incorporated into the development as a pedestrian trail.

*3A Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.*

As the proposed project is located about 4 miles from the shoreline, it is not applicable to this objective.

*4A Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*

As discussed under Objective 2A above, the proposed project will not have a significant adverse impact on the coastal ecosystem.

*5A Provide public or private facilities and improvements important to the State's economy in suitable locations.*

The Kula Nei project will improve the regional roadway network by extending Holoholo Street to complete a connection between Kaiminani Drive and Hina Lani Street. This improvement is consistent with regional transportation policies established by the County of Hawai'i. The project also proposes a privately funded and developed WWTP to serve smaller residential lots and an affordable housing complex within the project area.

- 6A *Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.*

Due to its location, the project area is not exposed to tsunami, storm waves, subsidence or stream flooding. Grading and site design at the project area will conform to all regulatory requirements and ensure that storm drainage is retained on site to minimize erosion potential for surrounding properties. As a residential development, the project will not have a direct impact on air quality.

- 7 *Improve the development review process, communication, and public participation in the management of coastal resources and hazards.*

While the coastal element of this objective is not relevant to the project, the public participation aspect is. This EIS was specifically prepared to be as “user friendly” as possible to ensure that the project is understood by the general population.

- 8 *Stimulate public awareness, education, and participation in coastal management.*

As this project is not situated near the coastline, this objective is not applicable.

- 9 *Protect beaches for public use and recreation.*

As this project is not situated near the coastline, this objective is not applicable.

- 10 *Promote the protection, use, and development of marine and coastal resources to assure their sustainability.*

As discussed above, the proposed project will have no significant negative impact upon the coastal resources of North Kona. Therefore, it is consistent with the intent of this objective.

## **5.13 FEDERAL EMERGENCY MANAGEMENT AGENCY NATIONAL FLOOD INSURANCE PROGRAM**

FEMA assists states through disasters both natural and manmade, and has over the years undergone numerous changes. FEMA is a former independent agency that in March 2003 became a part of the new Department of Homeland Security (DHS). FEMA responds to, plans for, recovers from and mitigates against disasters.

The Congressional Act of 1803 is generally considered the first piece of disaster legislation, followed in the next century by ad hoc legislation passed more than 100 times in response to hurricanes, earthquakes, floods and other natural disasters. FEMA in 2001 had to focus on issues of national preparedness and homeland security following the terrorist attacks of September 11th. Billions of dollars of new funding were directed to FEMA to help communities face the threat of terrorism. FEMA began actively directing its “all-hazards” approach to disasters toward homeland security issues. FEMA in March 2003 joined 22 other federal agencies, programs, and offices in becoming the DHS. The new department, headed by Secretary Tom Ridge, brought a coordinated approach to national security for emergencies and disasters both natural and man-made. Today, FEMA is one of four major branches of DHS with 2,500 full-time employees in the Emergency Preparedness and Response Directorate, supplemented by more than 5,000 stand-by disaster reservists.

The National Flood Insurance Program (NFIP) is just one of FEMA’s mitigative measures to assist communities in time of flood disaster. The U.S. Congress in 1968 established the program to enable property owners in participating communities to purchase insurance as a protection against flood losses. States and communities must first establish floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the federal government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the federal government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods. The NFIP identifies and maps the Nation’s floodplains.

In 1988, FEMA prepared FIRMs for the island of Hawai‘i to delineate flood hazard zones and base flood elevations lines. The subject property is located about 4 miles inland from the shoreline and outside of the 500-year floodplain. (FIRM Map No. 0681 C, Zone X, September 16, 1988.) Flood requirements and restrictions of the program do not apply.

## **COUNTY OF HAWAI‘I PLANS AND CONTROLS**

### **5.14 COUNTY OF HAWAI‘I GENERAL PLAN**

In 1971, the County of Hawai‘i adopted its first comprehensive General Plan for the island of Hawai‘i. This General Plan reflected a departure from previous regional plans that had little island-wide integrative efforts and were primarily land use or physically oriented. The General Plan set forth a policy of comprehensive development for the entire island, and incorporated an awareness of the relationship between social, physical, and economic environments. The plan called for five- and ten-year comprehensive reviews and updates to maintain the dynamism and flexibility of the plan, and also, to accommodate major changes and trends that may occur. The County initiated a review of the LUPAG in 1978 that led to several changes to the map, which included the addition of an energy element and procedures for specific amendments to the General Plan.

The first comprehensive 10-year review of the General Plan occurred in the mid-1980s, and was adopted in November 1989 by the County Council. This comprehensive revision program resulted in various revisions to supporting data, individual study elements, and LUPAG and Facilities maps. The LUPAG map serves as a guide for the direction of future developments, and indicates the general location of various land uses in relation to each other. A second 10-year review of the General Plan began in 1999, and was completed in February 2005, when the plan was approved by the County Council. The plan consists of 12 major elements that are further broken down into sub-elements.

The following table, identified as 5-5, presents the goals and policies of the current Hawai‘i County General Plan and discusses by element the relationship and applicability, if any, to HELCO’s petition for a boundary amendment.

**Table 5-5: COUNTY OF HAWAI‘I GENERAL PLAN**

ELEMENTS OF THE HAWAI‘I COUNTY GENERAL PLAN	RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant’s objectives NA = goal is not applicable</b>	
<b>GENERAL PLAN – ECONOMIC</b>	
<b>GOALS</b>	
Provide residents with opportunities to improve their quality of life through economic development that enhances the County’s natural and social environments.	C
Economic development and improvement shall be in balance with the physical, social, and cultural environments of the island of Hawai‘i.	A
Strive for diversity and stability in the economic system.	C
Provide an economic environment that allows new, expanded, or improved economic opportunities that are compatible with the County’s cultural, natural, and social environment.	C
Strive for an economic climate that provides its residents an opportunity for choice of occupation.	C
Strive for diversification of the economy by strengthening existing industries and attracting new endeavors.	C
Strive for full employment.	C
Promote and develop the island of Hawai‘i into a unique scientific and cultural model, where economic gains are in balance with social and physical amenities. Development should be reviewed on the basis of total impact on the residents of the County, not only in terms of immediate short run economic benefits.	A
<b>POLICIES</b>	
Assist in the expansion of the agricultural industry through the protection of important agricultural lands, development of marketing plans and programs, capital improvements, and continued cooperation with appropriate State and Federal agencies.	C
Encourage the expansion of the research and development industry by working with and supporting the University of Hawai‘i at Hilo and West Hawai‘i, the Natural Energy Laboratory at Hawai‘i Authority, and other agencies’ programs that support sustainable economic development in the County of Hawai‘i.	NA
Encourage the development of a visitor industry that is in harmony with the social, physical, and economic goals of the residents of the County.	NA
Require a study of the significant cultural, social and physical impacts of large developments prior to approval.	C
Encourage the sustainable development of the fishing industry, various forms of aquaculture, and other fresh and sea water-based activities.	NA
Support all levels of educational, employment and training opportunities and institutions.	NA
Capital improvements program shall improve the quality of existing commercial and industrial areas.	NA
The land, water, air, sea, and people shall be considered as essential resources for present and future generations and should be protected and enhanced through the use of economic incentives.	A
Continue to encourage the research, development and implementation of advanced technologies and processes.	NA
Support the development of high technology industries.	NA
Continue to encourage development and utilization of by-products from alternate energy conversion projects.	A
Identify and encourage primary industries that are consistent with the social, physical, and economic goals of the residents of the County.	C

<b>ELEMENTS OF THE HAWAI'I COUNTY GENERAL PLAN</b>	<b>RATING</b>
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
Encourage active liaison with the private sector with respect to the County's requirements for establishing businesses on the island.	NA
Encourage the development of the retirement industry.	NA
Promote a distinctive identity for the island of Hawai'i to enable government, business and travel industries to promote the County of Hawai'i as an entity unique within the state of Hawai'i.	NA
Identify the needs of the business community and take actions that are necessary to improve the business climate.	NA
Support research and development that would lead to the removal of marketing restrictions on Hawaiian fruits and other perishables.	NA
Assist in the development of a film and video industry program to market Big Island sites and coordinate film and video activities on the Big Island.	NA
Assist the further development of agriculture through the protection of important agricultural lands.	C
Assist in the promotion of the agriculture industry whose products are recognized as being produced on the island of Hawai'i.	NA
Encourage the establishment of open farmers markets to allow local agricultural producers to market their products.	NA
Assist in cooperative marketing and distribution endeavors to expand opportunities for local agricultural products for export as well as to the local market.	NA
Encourage the further development of the overseas capacity of Hilo International Airport for the exportation of agricultural crops.	NA
Encourage the health/wellness industry.	NA
Encourage new industries that provide favorable benefit-cost relationships to the people of the County. Benefit-cost relationships include more than fiscal considerations.	NA
<b>COURSES OF ACTION North Kona</b>	
Resort development in the area shall be in balance with the social and physical goals as well as economic desires of the resident of the district. Necessary pollution controls shall be available prior to development. Other necessary support facilities such as transportation and nursery facilities shall also be provided.	C
Assist in the further development of agriculture, including forestry and aquaculture activities. Necessary capital improvements that will aid agriculture, such as water, should be given priority for funding.	NA
Continue to encourage development of the Natural Energy Laboratory of Hawai'i Authority as a marine research and commercial facility.	NA
Encourage and support the development of Hawai'i Community College in West Hawai'i, including the University of Hawai'i Center.	C
Assist the fishing and boating industry through a cooperative effort with State and Federal agencies.	NA
Recognize the natural beauty of the area as a major economic and social asset. This resource should be protected through appropriate review processes when development is proposed.	C
Improve Kailua Village to maintain its viability as a popular visitor destination.	NA
Increase affordable housing opportunities in the Kailua-Kona area.	A

ELEMENTS OF THE HAWAI'I COUNTY GENERAL PLAN		RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>		
<b>COMMENTARY: As a residential community, Kula Nei's ability to directly influence the economy is limited to a supportive role: the provision of new homes, including affordable units, in an area designated for low-density residential development to support the larger economy.</b>		
<b>GENERAL PLAN – ENERGY</b>		
<b>GOALS</b>		
Strive towards energy self-sufficiency.		A
Establish the Big Island as a demonstration community for the development and use of natural energy resources.		C
<b>POLICIES</b>		
Encourage the development of alternate energy resources.		A
Encourage the development and use of agricultural products and by-products as sources of alternate fuel.		C
Encourage the expansion of energy research industry.		NA
Strive to educate the public on new energy technologies and foster attitudes and activities conducive to energy conservation.		C
Ensure a proper balance between the development of alternative energy resources and the preservation of environmental fitness and ecologically significant areas.		C
Strive to assure a sufficient supply of energy to support present and future demands.		C
Provide incentives that will encourage the use of new energy sources and promote energy conservation.		C
Seek funding from both government and private sources for research and development of alternative energy resources.		NA
Coordinate energy research and development efforts of both the government and private sectors.		NA
Encourage the continuation of studies concerning the development of power that can be distributed at lower costs to consumers.		NA
Strive to diversify the energy supply and minimize the environmental impacts associated with energy usage.		C
Continue to encourage the development of geothermal resources to meet the energy needs of the County of Hawai'i.		NA
Encourage the use of solar water heating through the continuation of state tax credit programs, through the Building Code, and in County construction.		A
Encourage energy-saving design in the construction of buildings.		A
Support net-metering and other incentives for independent power producers.		A
<b>COMMENTARY: The Kula Nei project is supportive of improving energy efficiency and promoting alternative energies. The applicant will work with the future master builder(s) to identify energy conservation measures that can be incorporated into the CC&amp;Rs where practicable.</b>		
<b>GENERAL PLAN - ENVIRONMENTAL QUALITY</b>		
<b>GOALS</b>		
Define the most desirable use of land within the County that achieves an ecological balance providing residents and visitors the quality of life and an environment in which the natural resources of the island are viable and sustainable.		A

ELEMENTS OF THE HAWAI'I COUNTY GENERAL PLAN	RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
Maintain and, if feasible, improve the existing environmental quality of the island.	A
Control pollution.	A
<b>POLICIES</b>	
Take positive action to further maintain the quality of the environment.	A
Reinforce and strengthen established standards where it is necessary, principally by initiating, recommending, and adopting ordinances pertaining to the control of pollutants that affect the environment.	NA
Advise the public of environmental conditions and research undertaken on the island's environment.	C
Encourage the concept of recycling agricultural, industrial, and municipal waste material.	A
Encourage the State to establish air and water quality monitoring stations in areas of existing and potential urban growth.	NA
Encourage the State to continue aircraft noise abatement strategies at Hilo International Airport and the Kona International Airport at Keāhole.	NA
Participate in watershed management projects to improve stream and coastal water quality and encourage local communities to develop such projects.	C
Work with the appropriate agencies to adopt appropriate measures and provide incentives to control point and nonpoint sources of pollution.	C
Support programs to prevent harmful alien species from becoming established.	C
Require golf courses to implement best management practices to limit leaching of nutrients to groundwater in areas where they may affect streams or coastal ecosystems.	NA
Require implementation of the management measures contained in Hawai'i's Coastal Nonpoint Pollution Control Program as a condition of land use permitting.	NA
Review the County grading and grubbing ordinances to ensure that they adequately address potential erosion and runoff problems.	C
<b>COMMENTARY: Although the applicant is not able to directly influence governmental policies concerning environmental quality, the applicant is supportive of those policies and will comply with all applicable regulations.</b>	
<b>GENERAL PLAN - FLOODING AND OTHER NATURAL HAZARDS</b>	
<b>GOALS</b>	
Protect human life.	A
Prevent damage to man-made improvements.	A
Control pollution.	A
Prevent damage from inundation.	NA
Reduce surface water and sediment runoff.	A
Maximize soil and water conservation.	A
<b>POLICIES</b>	
Enact restrictive land use and building structure regulations in areas vulnerable to severe damage due to the impact of wave action. Only uses that cannot be located elsewhere due to public necessity and character, such as maritime activities and the necessary public facilities and utilities, shall be allowed in these areas.	NA

<b>ELEMENTS OF THE HAWAI'I COUNTY GENERAL PLAN</b>	<b>RATING</b>
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
Review land use policy as it relates to flood plain, high surf, and tsunami hazard areas.	NA
Update and improve the Flood Insurance Rate Maps and other flood maps in compliance with the National Flood Insurance Program (NFIP) as needed.	NA
Any development within the Federal Emergency Management Agency designated flood plain must be in compliance with Chapter 27.	NA
Promote and provide incentives for participation in the Soil and Water Conservation Districts' conservation programs for developments on agricultural and conservation lands.	NA
The "Drainage Master Plan for the County of Hawai'i" shall be reviewed and updated to incorporate new studies and reflect newly identified priorities.	NA
Development-generated runoff shall be disposed of in a manner acceptable to the Department of Public Works, and in compliance with all State and Federal laws.	A
Develop a comprehensive program for the coordinated construction of a drainage network along a single drainage system.	A
Explore new methods of funding for the provision of adequate drainage systems and regulating potential flood inundation areas.	NA
The County and the private sector shall be responsible for maintaining and improving existing drainage systems and constructing new drainage facilities.	A
Develop an integrated shoreline erosion management plan that ensures the preservation of sandy beaches and public access to and along the shoreline, and the protection of private and public property from flood hazards and wave damage.	NA
Continue to promote public education programs on tsunami, hurricane, storm surge, and flood hazards.	NA
Encourage grassed shoulder and swale roadway design where climate and grade are conducive.	NA
Develop drainage master plans from a watershed perspective that considers non-structural alternatives, minimizes channelization, protects wetlands that serve drainage functions, coordinates the regulation of construction and agricultural operation, and encourages the establishment of floodplains as public green ways.	C
Encourage and provide incentives for agricultural operators to participate in Soil and Water Conservation District Programs.	NA
Where applicable, natural drainage channels shall be improved to increase their capacity with special consideration for the practices of proper soil conservation, and grassland and forestry management.	A
Consider natural hazards in all land use planning and permitting.	A
Discourage intensive development in areas of high volcanic hazard.	NA
<b>COURSES OF ACTION North Kona</b>	
Drainage systems for the Keopu/Hienaloli, Waiaha, Kaumalumu and the Holualoa/Horseshoe Bend drainageways shall be studied and remapped to determine the actions necessary to mitigate negative impacts.	NA
Establish and maintain appropriate vegetative cover in high rainfall, sediment and debris producing areas.	A
Encourage the mapping of the floodways in North Kona to develop more effective flood control programs.	NA
Encourage the use of natural drainageways as greenways in the development of the region.	A

ELEMENTS OF THE HAWAI'I COUNTY GENERAL PLAN	RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
Maintain and re-establish forest cover in mauka areas to improve the capacity of the ground to absorb heavy rainfall.	C
<b>COMMENTARY: The design and construction of a storm water drainage system that will retain project runoff on site is an important element of the proposed project. The applicant is mindful of the obligation to minimize erosion and minimize sedimentation down slope from the project area.</b>	
<b>GENERAL PLAN - HISTORIC SITES</b>	
<b>GOALS</b>	
Protect, restore, and enhance the sites, buildings, and objects of significant historical and cultural importance to Hawai'i.	A
Appropriate access to significant historic sites, buildings, and objects of public interest should be made available.	A
Enhance the understanding of man's place on the landscape by understanding the system of <i>ahupua'a</i> .	A
<b>POLICIES</b>	
Agencies and organizations, either public or private, pursuing knowledge about historic sites should keep the public apprised of projects.	C
Amend appropriate ordinances to incorporate the stewardship and protection of historic sites, buildings and objects.	NA
Require both public and private developers of land to provide historical and archaeological surveys and cultural assessments, where appropriate, prior to the clearing or development of land when there are indications that the land under consideration has historical significance.	C
Public access to significant historic sites and objects shall be acquired, where appropriate.	A
Embark on a program of restoring significant historic sites on County lands. Assure the protection and restoration of sites on other public lands through a joint effort with the State.	NA
Encourage the restoration of significant sites on private lands.	A
Collect and distribute historic sites information of public interest and keep an inventory of sites.	A
Aid in the development of a program of public education concerning historic sites.	NA
Signs explaining historic sites, buildings and objects shall be in keeping with the character of the area or the cultural aspects of the feature.	A
Develop a continuing program to evaluate the significance of historic sites.	NA
Develop policies to protect Hawaiian rights as identified under judicial decisions.	NA
Support the establishment of Hawaiian Heritage Corridors.	C
All new historic sites placed on the State or Federal Register after the adoption of the general plan shall be included in the General Plan.	NA
Consider requiring Cultural Assessments for certain developments as part of the rezoning process.	C
Recognize the importance of certain natural features in Hawaiian culture by incorporating the concept of "cultural landscapes" in land use planning.	C
<b>COURSES OF ACTION North Kona</b>	

ELEMENTS OF THE HAWAI'I COUNTY GENERAL PLAN	RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
Establish suitable visual buffers for the Keakealaniwahine and Keolanahihi complexes as a condition of rezoning or Special Management Area permits, for nearby properties.	NA
<b>COMMENTARY: The applicant recognizes its obligation to preserve archaeological and cultural sites identified as significant and ensure access to the project area for traditional and customary Native Hawaiian practices. The preservation of Homestead Road as a pedestrian trail will benefit not only the residents of Kula Nei but also the greater community.</b>	
<b>GENERAL PLAN - NATURAL BEAUTY</b>	
<b>GOALS</b>	
Protect, preserve and enhance the quality of areas endowed with natural beauty, including the quality of coastal scenic resources.	C
Protect scenic vistas and view planes from becoming obstructed.	C
Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.	C
<b>POLICIES</b>	
Increase public pedestrian access opportunities to scenic places and vistas.	A
Develop and establish view plane regulations to preserve and enhance views of scenic or prominent landscapes from specific locations, and coastal aesthetic values.	NA
Maintain a continuing program to identify, acquire and develop viewing sites on the island.	NA
Access easement to public or private lands that have natural or scenic value shall be provided or acquired for the public.	A
Develop standard criteria for natural and scenic beauty as part of design plans.	C
Consider structural setback from major thoroughfares and highways and establish development and design guidelines to protect important viewplanes.	C
Maintain a continuing program to identify exceptional trees or tree masses.	C
Protect the views of areas endowed with natural beauty by carefully considering the effects of proposed construction during all land use reviews.	A
Do not allow incompatible construction in areas of natural beauty.	C
<b>COMMENTARY: The Kula Nei project is committed to protecting the natural beauty of the region and ensuring that the character of the project is consistent with that of the surrounding communities.</b>	
<b>GENERAL PLAN – NATURAL RESOURCES AND SHORELINE</b>	
<b>GOALS</b>	
Protect and conserve the natural resources from undue exploitation, encroachment and damage.	C
Provide opportunities for recreational, economic, and educational needs without despoiling or endangering natural resources.	A
Protect and promote the prudent use of Hawai'i's unique, fragile, and significant environmental and natural resources.	A
Protect rare or endangered species and habitats native to Hawai'i.	A
Protect and effectively manage Hawai'i's open space, watersheds, shoreline, and natural areas.	A

<b>ELEMENTS OF THE HAWAI'I COUNTY GENERAL PLAN</b>	<b>RATING</b>
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
Ensure that alterations to existing land forms, vegetation, and construction of structures cause minimum adverse effect to water resources, and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation, or failure in the event of an earthquake.	A
<b>POLICIES</b>	
Require users of natural resources to conduct their activities in a manner that avoids or minimizes adverse effects on the environment.	C
Encourage a program of collection and dissemination of basic data concerning natural resources.	NA
Maintain the shoreline for recreational, cultural, educational, and/or scientific uses in a manner that is protective of resources and is of the maximum benefit to the general public.	NA
Protect the shoreline from the encroachment of man-made improvements and structures.	NA
Coordinate programs to protect natural resources with other government agencies.	NA
Investigate methods of beach replenishment and sand erosion control.	NA
Promote sound management and development of Hawai'i's land and marine resources for potential economic benefit.	NA
Encourage 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.	A
Encourage an overall conservation ethic in the use of Hawai'i's resources by protecting, preserving, and conserving the critical and significant natural resources of the County of Hawai'i.	A
Encourage the protection of watersheds, forest, brush, and grassland from destructive agents and uses.	C
An identification and inventory of forest lands suitable for watershed purposes should be conducted jointly by County, appropriate State and Federal agencies, and private landowners.	NA
Work with the appropriate State, Federal agencies, and private landowners to establish a program to manage and protect identified watersheds.	C
Encourage appropriate State agencies to review and designate forest and watershed areas into the conservation district during State land use boundary comprehensive reviews.	NA
The installation of utility facilities, highways and related public improvements in natural and wildland areas should avoid the contamination or despoilment of natural resources where feasible by design review, conservation principles, and by mutual agreement between the County and affected agencies.	A
Encourage the continued identification and inclusion of unique wildlife habitat areas of native Hawaiian flora and fauna within the Natural Area Reserve System.	C
Encourage the use of native plants for screening and landscaping.	A
Develop policies by which native Hawaiian gathering rights will be protected as identified under judicial decisions.	A
Ensure public access is provided to the shoreline, public trails and hunting areas, including free public parking where appropriate.	A
Establish a system of pedestrian access trails to places of scenic, historic, cultural, natural, or recreational values.	A
Preserve and protect significant lava tube caves.	A

ELEMENTS OF THE HAWAII COUNTY GENERAL PLAN	RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
Ensure that activities authorized or funded by the County do not damage important natural resources.	NA
Within the Kona high rainfall/fog-drip belt, ground disturbing activities such as excessive soil compaction and excessive removal of vegetative cover should be minimized and mitigated consistent with management strategies that encourage the retention of existing forested and pasture areas, reforestation, minimal coverage by impervious surfaces and other strategies that encourage effective infiltration to groundwater.	A
Implement Council Resolution Nos. 330-96 and 58-97 in land use approvals. <sup>6</sup>	A
Create incentives for landowners to retain and re-establish forest cover in upland watershed areas with emphasis on native forest species.	C
<b>COMMENTARY: The preservation of the lava tube within the Primary Project Area is consistent with the General Plan's policies for preserving natural resources.</b>	
<b>GENERAL PLAN – HOUSING</b>	
<b>GOALS</b>	
Attain safe, sanitary, and livable housing for the residents of the County of Hawai'i.	A
Attain a diversity of socio-economic housing mix throughout the different parts of the County.	A
Maintain a housing supply that allows a variety of choices.	A
Create viable communities with affordable housing and suitable living environments.	A
Improve and maintain the quality and affordability of the existing housing inventory.	NA
Seek sufficient production of new affordable rental and fee-simple housing in the County in a variety of sizes to satisfactorily accommodate the needs and desires of families and individuals.	A
Ensure that housing is available to all persons regardless of age, sex, marital status, ethnic background, and income.	A
Make affordable housing available in reasonable proximity to employment centers.	A
Encourage and expand home ownership opportunities for residents.	A
<b>POLICIES</b>	
Encourage a volume of construction and rehabilitation of housing sufficient to meet growth needs and correct existing deficiencies.	A
Encourage the construction of specially designed facilities or communities for elderly persons needing institutional care and small home care units for active elderly persons.	NA
Encourage corporations and nonprofit organizations to participate in Federal, State and private programs to provide new and rehabilitated housing for low and moderate income families.	NA
Support the construction of housing for minimum wage and agricultural workers.	NA

<sup>6</sup> Resolution No. 330-96 (1996): No lands in North or South Kona above 2,500 feet in elevation (except in the existing Kaloko Mauka Subdivision) should be rezoned to lot sizes less than 20 acres, without a corresponding reduction in density on contiguous lands. In Kaloko Mauka, the Council found that the concerns could be mitigated by specific rezoning conditions which would require that at least 80 per cent of the property be kept in forest cover, in the area above 3,000 feet in elevation (Resolution No. 58-97).

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Continue to review codes and ordinances for overly stringent restrictions that may impose unnecessary hardship and adopt amendments if warranted.	NA
Continue to study and implement appropriate measures to curb property speculative practices that result in increased housing costs.	NA
Large industries or developments that create a demand for housing shall provide employee housing based upon a ratio to be determined by an analysis of the locality's needs.	NA
Formulate a program for housing that identifies specific mechanisms to implement the housing goals.	NA
Utilize housing powers and programs to accomplish housing goals and seek out new programs and resources to address the housing needs of the residents.	NA
Initiate and participate in activities with the private sector including the provision of leadership and expertise to neighborhoods and nonprofit organizations in the development of housing and community development projects.	C
Increase rental opportunities and choices in terms of quality, cost, amenity, style and size of housing, especially for low and moderate income households.	C
Support programs that improve, maintain, and rehabilitate the existing housing inventory to maintain the viability of existing communities.	NA
Accommodate the housing requirements of special need groups including the elderly, handicapped, homeless and those residents in rural areas.	NA
Investigate, develop, and promote the creation of new innovative and timely financing techniques and programs to reduce the cost of housing.	NA
Encourage the use of suitable public lands for housing purposes in fee or lease.	NA
Encourage the construction of homes for lease or lease with option to purchase.	NA
Promote research and development of methods, programs, and activities including the review of regulatory requirements and procedures as they affect housing, to reduce the costs consistent with the public health, safety and welfare.	NA
Adopt appropriate ordinances and rules as necessary to implement its housing programs and activities.	NA
Utilize financing techniques that reduce the cost of housing, including the issuance of tax-exempt bonds and the implementation of interim financing programs.	NA
Ensure that adequate infrastructure is available in appropriate locations to support the timely development of affordable housing.	A
Investigate the use of the County's taxing powers as a possible means to increase the supply of affordable housing.	NA
Work with, encourage and support private sector efforts in the provision of affordable housing.	C
Encourage the development of affordable retirement communities.	NA
Vacant lands in urban areas and urban expansion areas should be made available for residential uses before additional agricultural lands are converted into residential uses.	NA
Aid and encourage the development of a wide variety of housing to achieve a diversity of socio-economic housing mix.	A
<b>COURSES OF ACTION North Kona</b>	

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Encourage the use of innovative types of housing developments, such as cluster and planned unit developments, that take advantage of the steep topographic conditions.	A
Require developments that create a demand for employee housing provide for that need.	NA
Increase affordable housing opportunities in the Kailua-Kona area.	A
<b>COMMENTARY: The broad range of lots sizes at Kula Nei, including the project's affordable housing component, fulfill the General Plan's housing goals.</b>	
<b>GENERAL PLAN –PUBLIC FACILITIES</b>	
<b>GOALS</b>	
Encourage the provision of public facilities that effectively service community and visitor needs and seek ways of improving public service through better and more functional facilities in keeping with the environmental and aesthetic concerns of the community.	NA
<b>POLICIES</b>	
Continue to seek ways of improving public service through the coordination of service and maximizing the use of personnel and facilities.	NA
Coordinate with appropriate State agencies for the provision of public facilities to serve the needs of the community.	NA
Develop short and long-range capital improvement programs and operating budgets for public facilities and services.	NA
Develop and adopt an Impact Fees Ordinance.	NA
Capital Improvement and Operating budgets shall reflect the goals and policies of the County General Plan.	NA
Require a six-year, long-term, capital improvements budget by County Departments and agencies that shall be reviewed for consistency with the General Plan.	NA
<b>COMMENTARY: As the project is privately developed and funded, the General Plan's Public Facility goals and policies are not directly applicable.</b>	
<b>GENERAL PLAN –PUBLIC FACILITIES EDUCATION</b>	
<b>POLICIES</b>	
Encourage continuous joint pre-planning of schools with the Department of Education and the University of Hawai'i to ensure coordination with roads, water, and other support facilities and considerations such as traffic and safety, and access for vehicle, bicycle, and pedestrian. Encourage master planning of present and proposed public and private institutions.	NA
Encourage combining schoolyards with county parks and allow school facilities for afterschool use by the community for recreational, cultural, and other compatible uses.	NA
Encourage joint community-school library facilities, where a separate community library may not be feasible, in proximity to other community facilities, affording both pedestrian and vehicular access.	NA
Encourage implementation of the Department of Education's 'Educational Specifications and Standards for Facilities.'	NA
Encourage the Hawai'i State Library system to seek alternate sites for public libraries located on the campuses of public schools.	NA
<b>COURSES OF ACTION North Kona</b>	

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Encourage expansion of the Holualoa school complex to meet school district needs.	NA
Encourage the State Department of Education to add facilities as the need arises.	NA
Improve basic school facilities to meet current standards.	NA
Encourage construction of a new library facility to serve the Kailua-Keauhou area.	NA
<b>GENERAL PLAN –PUBLIC FACILITIES PROTECTIVE SERVICES</b>	
<b>POLICIES</b>	
Development of police and fire facilities should entail joint use structures when-ever feasible.	NA
The establishment of a fire/police facility shall consider site size and locations that permit quick and efficient vehicular access.	NA
Development of volunteer fire facilities with proper planning to be replaced or to co-exist with full time Fire/EMS personnel.	NA
Police headquarters shall be near the geographic center of the service area and near concentrations of commercial and industrial use.	NA
Stations in outlying districts shall be based on the population to be served and response time rather than on geographic district.	NA
Correctional facilities should emphasize rehabilitation. Establish additional rehabilitation and counseling centers, including drug and behavioral treatment facilities in secure settings, when necessary.	NA
Encourage the further development and expansion of community policing programs and neighborhood and farm watch programs in urban, rural and agricultural communities.	C
The County of Hawai'i Emergency Operations Center shall be improved to meet the requirements set forth by federal and State regulations.	NA
Maintain funding of two emergency medical helicopters.	NA
Mitigate hazards through the preparation of disaster assessment reports and appropriate follow-up on the assessment recommendations.	NA
Educate the public regarding disaster preparedness and response, especially proper responses for sudden impact hazards.	C
Encourage the State to evaluate the disaster shelters' ability to withstand various natural disasters.	NA
Consider the proximity to fire stations in approving any rezoning to permit urban development.	C
The Fire Department, in cooperation with other related governmental agencies and the involved land owners, shall prepare a fire protection and prevention plan for forest reserves and other natural areas.	NA
<b>COURSES OF ACTION North Kona</b>	
Service facilities shall be improved to meet needs.	NA
<b>GENERAL PLAN –PUBLIC FACILITIES HEALTH AND SANITATION</b>	
<b>POLICIES</b>	
Encourage the development of new health care facilities or the improvement of existing health care facilities to serve the needs of Hamakua, North and South Kohala, and North and South Kona.	NA
Develop and implement a cemeteries master plan for the siting of future cemeteries.	NA

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Appropriately designed and cost-effective solid waste transfer station sites shall be located in areas of convenience and easy access to the public.	NA
Encourage the State to continue operation of the rural hospitals.	NA
Encourage the establishment or expansion of community health centers and rural health clinics.	NA
Continue to encourage programs such as recycling to reduce the flow of refuse deposited in landfills.	C
Investigate the possibility of developing new landfill sites on the island.	NA
Encourage the full development and implementation of green waste recycling program.	C
<b>COURSES OF ACTION North Kona</b>	
New privately owned cemetery sites to serve future needs shall be sought.	NA
<b>COMMENTARY: The project's compliance with public facility policies are generally limited to the programs it implements on site, including solid waste collection, wastewater treatment, neighborhood watch, and fire prevention.</b>	
<b>GENERAL PLAN - PUBLIC UTILITIES</b>	
<b>GOALS</b>	
Ensure that properly regulated, adequate, efficient and dependable public and private utility services are available to users.	A
Maximize efficiency and economy in the provision of public utility services.	A
Design public utility facilities to fit into their surroundings or concealed from public view.	A
<b>POLICIES</b>	
Public utility facilities shall be designed to complement adjacent land uses and shall be operated to minimize pollution or disturbance.	A
Provide utilities and service facilities that minimize total cost to the public and effectively service the needs of the community.	A
Utility facilities shall be designed to minimize conflict with the natural environment and natural resources.	A
Improvement of existing utility services shall be encouraged to meet the needs of users.	A
Encourage the clustering of developments in order to reduce the cost of providing utilities.	C
Develop short and long range capital improvement programs and plans for public utilities within its jurisdiction that are consistent with the General Plan.	A
<b>COMMENTARY: Master planning the Kula Nei community enables the provision of utilities to be carefully coordinated in the development of the project, which helps lower costs and maximize connectivity with the regional system.</b>	
<b>GENERAL PLAN – PUBLIC UTILITIES - WATER</b>	
<b>POLICIES</b>	
Water system improvements shall correlate with the County's desired land use development pattern.	A
All water systems shall be designed and built to Department of Water Supply standards.	A
Improve and replace inadequate systems.	NA
Water sources shall be adequately protected to prevent depletion and contamination from natural and man-made occurrences or events.	A

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Water system improvements should be first installed in areas that have established needs and characteristics, such as occupied dwellings, agricultural operations and other uses, or in areas adjacent to them if there is need for urban expansion	A
A coordinated effort by County, State and private interests shall be developed to identify sources of additional water supply and be implemented to ensure the development of sufficient quantities of water for existing and future needs of high growth areas and agricultural production.	A
The fire prevention systems shall be coordinated with water distribution systems in order to ensure water supplies for the fire protection purposes.	A
Develop and adopt standards for individual water catchment units.	NA
Cooperate with the State Department of Health to develop standards and/or guidelines for the construction and use of rainwater catchment systems to minimize the intrusion of any chemical and microbiological contaminants.	NA
Cooperate with appropriate State and Federal agencies and the private sector to develop, improve and expand agricultural water systems in appropriate areas on the island.	NA
Promote the use of ground water sources to meet State Department of Health water quality standards.	A
Continue to participate in the United States Geological Survey's exploratory well drilling program.	NA
Seek State and Federal funds to assist in financing projects to bring the County into compliance with the Safe Drinking Water Act.	NA
Develop and adopt a water master plan that will consider water yield, present and future demand, alternative sources of water, guidelines and policies for the issuing of water commitments.	A
Expand programs to provide for agricultural irrigation water.	NA
<b>COURSES OF ACTION North Kona</b>	
Continue to pursue groundwater source investigation, exploration and development in areas that would provide for anticipated growth and an efficient and economic system operation.	A
Continue to evaluate growth conditions to coordinate improvements as required to the existing water system in accordance with the North Kona Water System Master Plan.	A
Explore and develop a well in Waiaha.	NA
<b>COMMENTARY: The Kula Nei project includes the privately funded development of a new regional well, storage reservoir, and a transmission system that will not only serve the project but will also provide linkage to the regional system.</b>	
<b>GENERAL PLAN – PUBLIC UTILITIES -TELECOMMUNICATIONS</b>	
<b>POLICIES</b>	
Encourage underground telephone lines where they are economically and technically feasible.	A
Work with the telecommunications industry to increase the availability of emergency telephones throughout the island.	C
Develop standards for the construction of wireless telecommunication facilities.	NA
Work closely with the telephone company to provide all users with efficient service.	C
<b>COMMENTARY: Electrical and telecommunication utility lines will be buried underground at the Kula Nei project.</b>	

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<b>GENERAL PLAN – PUBLIC UTILITIES - ELECTRICITY</b>	
<b>POLICIES</b>	
Power distribution shall be placed underground when and where practical. Encourage developers of new urban areas to place utilities underground.	A
Route selection for high voltage transmission lines should include consideration for setbacks from major thoroughfares and residential areas. Where feasible, delineate energy corridors for such high voltage transmission lines.	C
Continue to advise the electrical utility companies on the future revisions of their comprehensive Integrated Resource Plans.	C
Conform to safety standards as established by appropriate regulatory authorities.	C
<b>COMMENTARY: Electrical and telecommunication utility lines will be buried underground at the Kula Nei project.</b>	
<b>GENERAL PLAN – PUBLIC UTILITIES - GAS</b>	
<b>POLICIES</b>	
Gas storage facilities shall be located to minimize danger to commercial and residential areas.	C
<b>COMMENTARY: If it is determined that a gas storage facility is needed at the project site, it will comply with this policy.</b>	
<b>GENERAL PLAN – PUBLIC UTILITIES - SEWER</b>	
<b>POLICIES</b>	
The "Sewerage Study for All Urban and Urbanizing Areas of the County of Hawai'i, State of Hawai'i," December 1970, and the "Water Quality Management Plan for the county of Hawai'i," December 1980, shall be updated and used as guides for the general planning of sewerage disposal systems.	C
Private systems shall be installed by land developers for major resort and other developments along shorelines and sensitive higher inland areas, except where connection to nearby treatment facilities is feasible and compatible with the County's long-range plans, and in conformance with State and County requirements.	A
Immediate steps should be taken to designate treatment plant sites, sewerage pump station sites, and sewer easements according to the facility plans to facilitate their acquisition.	A
Continue to seek State and Federal funds to finance the construction of proposed sewer systems and improve existing systems.	NA
Plans for wastewater reclamation and reuse for irrigation and biosolids composting (remaining solids from the treatment of wastewater is processed into a reuseable organic material) shall be utilized where feasible and needed.	A
Require major developments to connect to existing sewer treatment facilities or build their own.	A
<b>COURSES OF ACTION North Kona</b>	
Expand the existing sewer collection system.	A
Upgrade the Kealakehe Wastewater Treatment Plan to produce tertiary (R-1) quality effluent.	NA
<b>COMMENTARY: Because the Kula Nei project is situated mauka of the DOH's UIC line, and is therefore prohibited from utilizing injection wells, and because it located a considerable distance from the Kealakehe WWTP, it will rely upon a combination of individual wastewater treatment systems (septic systems) for larger lots and a privately funded and operated WWTP for smaller lots and the proposed affordable housing development.</b>	
<b>GENERAL PLAN - RECREATION</b>	

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<b>GOALS</b>	
Provide a wide variety of recreational opportunities for the residents and visitors of the County.	A
Maintain the natural beauty of recreation areas.	C
Provide a diversity of environments for active and passive pursuits.	A
<b>POLICIES</b>	
Strive to equitably allocate facility-based parks among the districts relative to population, with public input to determine the locations and types of facilities.	C
Improve existing public facilities for optimum usage.	NA
Recreational facilities shall reflect the natural, historic, and cultural character of the area.	A
The use of land adjoining recreation areas shall be compatible with community values, physical resources, and recreation potential.	A
Develop short and long range capital improvement programs and plans for recreational facilities that are consistent with the General Plan.	NA
The "County of Hawai'i Recreation Plan" shall be updated to reflect newly identified recreational priorities.	NA
Facilities for compatible multiple uses shall be provided.	C
Provide facilities and a broad recreational program for all age groups, with special considerations for the handicapped, the elderly, and young children.	C
Coordinate recreational programs and facilities with governmental and private agencies and organizations. Innovative ideas for improving recreational facilities and opportunities shall be considered.	C
Develop local citizen leadership and participation in recreation planning, maintenance and programming.	C
Adopt an on-going program of identification, designation, and acquisition of areas with existing or potential recreational resources, such as land with sandy beaches and other prime areas for shoreline recreation in cooperation with appropriate governmental agencies.	NA
Public access to the shoreline shall be provided in accordance with an adopted program of the County of Hawai'i.	NA
Develop a network of pedestrian access trails to places of scenic, historic, natural or recreational values. This system of trails shall provide at a minimum, an islandwide route connecting major parks and destinations.	A
Establish a program to inventory ancient trails, cart roads and old government roads on the island in coordination with appropriate State agencies.	C
Develop facilities and safe pathway systems for walking, jogging and biking activities.	A
Develop a recreation information dissemination system for the public's use.	NA
Revise the ordinance requiring subdivisions to provide land area for park and recreational use or pay a fee in lieu thereof.	NA
Develop and adopt an Impact Fees Ordinance.	NA
Consider alternative sources of funding for recreational facilities.	NA
Develop best management practices for the development of golf courses in coordination with developers, State Department of Health, and other government agencies.	NA

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Provide access to public hunting areas.	NA
<b>COURSES OF ACTION North Kona</b>	
Encourage the development of community and district recreational facilities, a gymnasium and community center with easy access for residents.	NA
Encourage the development of Alii Drive within the Kailua Village area as a pedestrian mall with open space areas for passive recreation.	NA
Improve facilities at Laaloa Bay Beach Park and Kahaluu Beach Park.	NA
Implement the development of the Kailua Park (Old Kona Airport) as a major regional or district park.	NA
Encourage the development of a major multi-purpose regional recreational and sports complex.	NA
Acquire, and/or encourage the development of additional public shoreline recreation areas.	NA
Establish public access to and the development of shoreline regions along the North Kona Coast in areas such as Keawaiki, Kiholo Bay, Kaupulehu, Kukio and Kapapa Bays, Kua Bay, Kahoiawa, Makalawena, and Honokohau.	NA
Encourage the State to continue with the establishment of Kekaha Kai State Park reaching into Mahaiula, Awakee, and Maniniowali Ahupauaa.	NA
Protect the marine life at Kahaluu Bay.	NA
Protect Opaepuala, Kaloko, and Honokohau (Aimakapa) Ponds as natural areas.	NA
Encourage the development of historic trails.	NA
Develop a municipal golf course.	NA
Encourage the establishment of historic park at Kamoia Point.	NA
Encourage the acquisition and establishment of the summit area of Hualālai as a wilderness park.	NA
Increase <i>mauka</i> park lands.	A
<b>COMMENTARY: The Kula Nei project includes the development of a passive recreational park and the preservation of Homestead Road as a pedestrian trail.</b>	
<b>GENERAL PLAN – TRANSPORTATION</b>	
<b>GOALS</b>	
Provide a transportation system whereby people and goods can move efficiently, safely, comfortably and economically.	A
Make available a variety of modes of transportation that best meets the needs of the County.	NA
<b>POLICIES</b>	
A framework of transportation facilities that will promote and influence desired land use shall be established by concerned agencies.	A
The agencies concerned with transportation systems shall provide for present traffic and future demands, including the programmed development of mass transit programs for high growth areas by both the private and public sectors.	NA
The improvement of transportation service shall be encouraged.	A

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Consider the provision of adequate transportation systems to enhance the economic viability of a given area.	A
Develop a comprehensive, islandwide multi-modal transportation plan that identifies the location and operation of automobile, mass transit, bicycle and pedestrian systems, in coordination with appropriate Federal and State agencies.	NA
Work with various non-profit agencies to coordinate transportation opportunities.	C
<b>GENERAL PLAN – TRANSPORTATION ROADWAYS</b>	
<b>GOALS</b>	
Provide a system of roadways for the safe, efficient and comfortable movement of people and goods.	A
Provide an integrated State and County transportation system so that new major routes will complement and encourage proposed land policies.	A
<b>POLICIES</b>	
Encourage the programmed improvement of existing roadways by both public and private sectors.	A
Investigate various methods of funding road improvements, including private sector participation, to meet the growing transportation needs of the island.	A
Encourage the State to establish a continuous State highway system connecting the County's major airports and harbors.	NA
Support the development of programs to identify and improve hazardous and substandard sections of roadway and drainage problems.	NA
Coordinate with appropriate Federal and State agencies for the funding of transportation projects for areas of anticipated growth.	A
Consider the development of alternative means of transportation, such as mass transit, bicycle and pedestrian systems, as a means to increase arterial capacity.	C
There shall be coordinated planning of Federal, State, and County street systems to meet program goals of the other elements such as historic, recreational, environmental quality, and land use.	C
Provisions for on-street parking shall be incorporated into the design of street systems.	C
Encourage the State Department of Transportation to establish special scenic routes within and between communities.	C
Transportation and drainage systems shall be integrated where feasible.	C
Support the development of an efficient transit route between east and west Hawai'i.	NA
Adopt street design standards that accommodate, where appropriate, flexibility in the design of streets to preserve the rural character of an area and encourage a pedestrian-friendly design, including landscaping and planted medians.	C
Develop minimum street standards for homestead and other currently substandard roadways that are offered for dedication to the county to ensure minimal levels of public safety.	C
Encourage the development of walkways, jogging, and bicycle paths within designated areas of the community.	C
Explore means and opportunities to enhance the shared use of the island's roadways by pedestrians and bicyclists, in coordination with appropriate government agencies and organizations.	C

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The Bikeway Plan for the County of Hawai'i (1979) shall be updated to include the development of a safe and usable bikeway system throughout the island.	C
Work in conjunction with the State to establish a clear agreement of the ownership and maintenance of the old homestead roads.	A
Develop short and long range capital improvement programs and plans for transportation that are consistent with the General Plan.	A
<b>COURSES OF ACTION North Kona</b>	
Develop a roadway network circulation plan in cooperation with the State Department of Transportation and affected communities. Upon adoption of the plan, the plan recommendations shall be incorporated on the zone district maps.	A
Encourage the State to widen Queen Ka'ahumanu Highway as necessary to accommodate increases in traffic flows, in particular between Kona International Airport and Keāhole and Kailua-Kona.	C
Widen Palani Road between the proposed Keanalehu (Waena) Drive and the Queen Ka'ahumanu Highway or construct the proposed Palani Bypass Highway.	NA
Encourage the State to extend Kealakehe Parkway mauka to connect with the Māmalahoa Highway.	NA
Construct the following north-south collector roadways from Palani Drive and extending north to the proposed University Drive: 1) Ane Keohokalole Highway (Mid-level Road); 2) Keanalehu (Waena Drive); and 3) Kealakaa Street.	NA
Construct the proposed University Drive between the Māmalahoa and Queen Ka'ahumanu Highways.	NA
Widen Hina Lani Drive to four lanes between the Queen Ka'ahumanu Highway to the proposed Ane Keohokalole Highway.	NA
Construct the proposed Shore Drive from the Old Kona Airport Park to the Kealakehe Drive intersection.	NA
Construct the Kahului-Keauhou Parkway (Alii Highway) from Queen Ka'ahumanu Highway to Keauhou.	NA
Construct a scenic road from Keauhou above the Kealakekua cliffs to Napoopoo.	NA
Provide vertical connectors from Alii Drive to Kuakini Highway.	NA
Improve that portion of the Māmalahoa Highway extending from the North Kona to the Ka'u Districts.	NA
Support the installation of suitable bikeways and/or jogging paths.	C
Develop a roadway circulation plan for the area between Palani Road and Kamehameha III Road, in cooperation with the State Department of Transportation, Federal Highway Administration, and the affected communities.	NA
Extend Lako Street to connect to Alii Drive.	NA
Work with the State and the adjacent landowners in establishing the old railroad right-of-way as pedestrian and bicycle right-of-way.	NA
<b>GENERAL PLAN – TRANSPORTATION TERMINALS: AIRPORTS &amp; HARBORS</b>	
<b>GOALS</b>	
Provide transportation terminals and related facilities for the safe, efficient and comfortable movement of people and goods.	NA
<b>POLICIES</b>	

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Encourage the programmed improvement of existing terminals, including adequate provisions for control of pollution and appropriate and adequate covered storage facilities for agricultural products.	NA
The State Department of Transportation should continue to implement its plans for transportation terminals and related facilities to promote and influence desired land use policies.	NA
Transportation terminals should be developed in conjunction with the different elements of the overall transportation system.	NA
Encourage maximum use of the island's airport and harbor facilities.	NA
Encourage the development, maintenance, and enhancement of Hilo and Kawaihae Harbors as detailed within the State's Hawai'i Commercial Harbors 2020 Master Plan.	NA
Support the State's objectives to acquire rights within the runway clear-zones, limit heights within approach zones, and restrict noise-sensitive uses within designated noise contours determined by the State.	NA
<b>COURSES OF ACTION North Kona</b>	
Future land uses in the vicinity of the Kona International Airport at Keahāole should be compatible with the anticipated aircraft noise exposure levels for that vicinity.	NA
The State Department of Transportation should continue to improve and expand Kona International Airport at Keāhole in accordance with the recommendations of the Keāhole-Kona International Airport Master Plan Update Study (1997).	NA
Encourage the State to renovate the Kailua-Kona Wharf or to seek alternative facilities to accommodate the cruise ship industry.	NA
<b>GENERAL PLAN – TRANSPORTATION MASS TRANSIT</b>	
<b>GOALS</b>	
Provide residents with a variety of public transportation systems that are affordable, efficient, accessible, safe, environmentally friendly, and reliable.	NA
<b>POLICIES</b>	
Improve the integration of transportation and land use planning in order to optimize the use, efficiency, and accessibility of existing and proposed mass transportation systems.	C
Support and encourage the development of alternative modes of transportation, such as enhanced bus services and bicycle paths.	C
Incorporate, where appropriate, bicycle routes, lanes, and paths within road rights-of-way in conformance with The Bikeway Plan for the County of Hawai'i.	C
Provisions to enhance the mobility of minors, non-licensed adults, low-income, elderly, and people with disabilities shall be made.	NA
<b>COMMENTARY: While the applicant is supportive of State and County initiatives to promote multi-modal transportation opportunities in West Hawai'i, its ability to improve transportation systems is limited to the commitments it can make to improving regional connectivity in coordination with surrounding land owners.</b>	
<b>GENERAL PLAN - LAND USE</b>	
<b>GOALS</b>	
Designate and allocate land uses in appropriate proportions and mix and in keeping with the social, cultural, and physical environments of the County.	A

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Protect and encourage the intensive and extensive utilization of the County's important agricultural lands.	A
Protect and preserve forest, water, natural and scientific reserves and open areas.	A
<b>POLICIES</b>	
Zone urban types of uses in areas with ease of access to community services and employment centers and with adequate public utilities and facilities.	A
Promote and encourage the rehabilitation and use of urban areas that are serviced by basic community facilities and utilities.	A
Allocate appropriate requested zoning in accordance with the existing or projected needs of neighborhood, community, region and County.	A
Conduct a review and re-evaluation of the real property tax structure to assure compatibility with land use goals and policies.	NA
Incorporate innovations such as the "zone of mix" and "mixed use zones" into the Zoning Code.	NA
Encourage the development and maintenance of communities meeting the needs of its residents in balance with the physical and social environment.	A
Establish a program of continuing review of the Zoning Code in light of emerging new industries and technologies and incorporate revisions to land use regulations as necessary.	NA
Develop community development or regional plans for all of the districts or combinations of districts in cooperation with community residents and periodically review and amend these documents as necessary or as mandated.	C
Ensure that condominium property regimes (CPR) comply with the requirements of the Zoning Code, Subdivision Control Code and other applicable rules and regulations.	NA
Encourage urban development within existing zoned areas already served by basic infrastructure, or close to such areas, instead of scattered development.	A
<b>COMMENTARY: The reclassification of the subject property to the State Urban District and a change in County zoning would be in accordance with the existing or projected needs of the neighborhood, community, region, and the County.</b>	
<b>GENERAL PLAN - LAND USE AGRICULTURE</b>	
<b>GOALS</b>	
Identify, protect and maintain important agriculture lands on the island of Hawai'i.	C
Preserve the agricultural character of the island.	C
Preserve and enhance opportunities for the expansion of Hawai'i's Agricultural Industry.	C
<b>POLICIES</b>	
Implement new approaches to preserve important agricultural land.	NA
Assist in the development of basic resources such as water, roads, transportation and distribution facilities for the agricultural industry.	NA
Assist other State agencies, such as the University of Hawai'i, College of Tropical Agriculture and Human Resources, University of Hawai'i at Hilo, College of Agriculture, Forestry and Natural Resources Management, Department of Business, Economic Development and Tourism, Office of Planning, Department of Land and Natural Resources and Department of Agriculture, on programs that aid agriculture.	NA

<b>ELEMENTS OF THE HAWAI'I COUNTY GENERAL PLAN</b>	<b>RATING</b>
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
Agricultural land may be used as one form of open space or as green belt.	NA
Coordinate and encourage efforts to solve the problems of the agricultural industry in the County of Hawai'i.	NA
In order to minimize the potential conflicts between agricultural and non-agricultural uses, standards and guidelines for the establishment of well defined buffer areas as part of new, non-agricultural developments that are located adjacent to important agricultural lands shall be developed.	NA
Land zoned for use in the Rural District shall be expanded, where appropriate.	NA
Develop subdivision standards that make a distinction between agricultural and urban land uses.	NA
Designate, protect and maintain important agricultural lands from urban encroachment.	C
Ensure that development of important agricultural land be primarily for agricultural use	C
Support the development of private and State agricultural parks to make agricultural land available for agricultural activities.	NA
Assist in the development of agriculture.	NA
Assist in the development of water for agricultural purposes.	NA
Investigate possibilities to prevent non-agricultural uses that could interfere with potential or existing agricultural activities on important agricultural lands.	C
Support efforts to provide tax relief and other incentives to enhance competitive capabilities of commercial farms and ranches, thereby insuring long-term preservation, enhancement, and expansion of viable agricultural lands.	NA
Ensure that condominium property regimes (CPR) on agricultural-designated lands comply with the requirements of the Zoning Code and other applicable laws, rules and regulations.	NA
Farm labor housing projects shall be developed in a manner that minimizes the use of important agricultural lands and is consistent with the character of surrounding land uses.	NA
Encourage, where appropriate, the establishment of visitor-related uses and facilities that directly promote the agriculture industry.	NA
Important agricultural lands shall not be rezoned to parcels too small to support economically viable farming units.	C
Discourage speculative residential development on agricultural lands.	C
Encourage other compatible economic uses that complement existing agricultural and pastoral activities.	C
<b>COURSES OF ACTION North Kona</b>	
Protect important agricultural lands within the Kona Coffee Belt from urban encroachment through the use of zoning and other mechanisms.	C
Encourage the University of Hawai'i at Hilo to accelerate research on agricultural, aquaculture and forestry products that are or could be of economic value to Kona.	NA
Encourage buffer zones or compatible uses between important agricultural land and adjacent uses of land.	NA

ELEMENTS OF THE HAWAI'I COUNTY GENERAL PLAN		RATING
A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable		
COMMENTARY: The Kula Nei property is classified in the State Agricultural District, but is of limited agricultural productivity due to its soil quality. It is surrounded on three sides by existing or planned residential development which further limits its future use. In addition, it is designated for urban expansion by the State and as Low-Density Residential by the County. Therefore, its proposed reclassification to the Urban District is not anticipated to have a significant impact upon agricultural productivity in the region.		
<b>GENERAL PLAN - LAND USE COMMERCIAL DEVELOPMENT</b>		
<b>GOALS</b>		
Provide for commercial developments that maximize convenience to users.		NA
Provide commercial developments that complement the overall pattern of transportation and land usage within the island's regions, communities, and neighborhoods.		NA
<b>POLICIES</b>		
Urban renewal, rehabilitation, and/or redevelopment programs shall be undertaken in cooperation with communities, businesses and governmental agencies		NA
Commercial facilities shall be developed in areas adequately served by necessary services, such as water, utilities, sewers, and transportation systems. Should such services not be available, the development of more intensive uses should be in concert with a localized program of public and private capital improvements to meet the expected increased needs.		NA
Distribution of commercial areas shall meet the demands of neighborhood, community and regional needs.		NA
Existing strip development shall be converted to more appropriate uses when and where it is feasible.		NA
Encourage the concentration of commercial uses within and surrounding a central core area.		NA
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.		NA
Applicable ordinances shall be reviewed and amended as necessary to include considerations for urban design, aesthetic quality and the protection of amenities in adjacent areas through landscaping, open space and buffer areas.		NA
Require developers to provide basic infrastructure necessary for development.		NA
Encourage commercial areas to develop on an axis perpendicular to the highway.		NA
<b>COURSES OF ACTION North Kona</b>		
Controls to prevent speculative practices on commercially zoned lands may be established.		NA
Implementation of programs to correct existing deficiencies shall be undertaken.		NA
Appropriately zoned lands shall be provided as the need arises.		NA
COMMENTARY: No commercial land uses are proposed at Kula Nei.		
<b>GENERAL PLAN - LAND USE - INDUSTRIAL</b>		
<b>GOALS</b>		
Designate and allocate industrial areas in appropriate proportions and in keeping with the social, cultural, and physical environments of the County.		NA
Promote and encourage the rehabilitation of industrial areas that are serviced by basic community facilities		NA

<b>ELEMENTS OF THE HAWAI'I COUNTY GENERAL PLAN</b>	<b>RATING</b>
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and utilities.	
<b>POLICIES</b>	
Support the creation of industrial parks in appropriate locations as an alternative to strip development.	NA
Achieve a broader diversification of local industries by providing opportunities for new industries and strengthening existing industries.	NA
Locate industrial areas convenient to transportation facilities, and provide a variety of industrial zoned districts and lot sizes, depending on the needs of the industries and the communities.	NA
Improve the aesthetic quality of industrial sites and protect amenities of adjacent areas by requiring landscaping, open spaces, buffer zones, and design guidelines.	NA
Industrial development shall be located in areas adequately served by transportation, utilities, and other essential infrastructure.	NA
Provide flexibility within the Zoning Code to accommodate emerging new industries.	NA
Industrial-commercial mixed use districts shall be provided in appropriate locations.	NA
Require developers to provide basic infrastructure necessary for development.	NA
<b>COURSES OF ACTION North Kona</b>	
Identify sites suitable for future industrial activities.	NA
Additional industrial acreage should be provided at the Kona International Airport at Keāhole for support facilities for the airport.	NA
Industrial development should be in harmony with surrounding uses and the environment.	NA
Industrial-commercial mixed-use districts may be provided in appropriate locations.	NA
Service oriented Limited Industrial and/or Industrial-Commercial uses may be permitted in the Kainaliu-Honalo area although the area is not currently identified on the LUPAG map.	NA
<b>COMMENTARY: No industrial land uses are proposed at Kula Nei.</b>	
<b>GENERAL PLAN – LAND USE - MULTIPLE RESIDENTIAL</b>	
<b>GOALS</b>	
To provide for multiple residential developments that maximize convenience for its occupants.	A
To provide for suitable living environments that accommodate the physical, social and economic needs of the island residents.	A
To enhance the overall quality of life in our residential communities.	A
<b>POLICIES</b>	
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.	A
Incorporate reasonable flexibility in applicable codes and ordinances to achieve a diversity of socio-economic housing mix.	C
Encourage flexibility in the design of residential sites, buildings and related facilities to achieve a diversity of socio-economic housing mix and innovative means of meeting the market requirements.	A

<b>ELEMENTS OF THE HAWAI'I COUNTY GENERAL PLAN</b>	<b>RATING</b>
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
The rehabilitation and/or utilization of multiple residential areas shall be encouraged.	C
To assure the use of multiple residential zoned areas and to curb speculation and resale of undeveloped lots only, the County may impose incremental and conditional zoning, which shall be based on performance requirements.	C
Applicable codes and ordinances shall be reviewed and amended as necessary to include consideration for urban design, and aesthetic quality through landscaping, open space, and buffer areas.	C
Support the rezoning of those multiple residentially zoned lands that are used for other purposes to a more appropriate zoning designation.	C
Require developers to provide basic infrastructure necessary for development.	C
<b>COURSES OF ACTION North Kona</b>	
Re-evaluation of existing zoned areas and re-allocation of lands in appropriate locations shall be undertaken.	C
Appropriately zoned lands shall be allocated as the need for multiple residential development increases.	C
<b>COMMENTARY: As the Kula Nei property is designated as Low-Density Residential by the General Plan's Land Use Pattern Allocation Guide, multiple residential development will be generally limited to some multi-plex development with the affordable housing component.</b>	
<b>GENERAL PLAN – LAND USE - SINGLE-FAMILY RESIDENTIAL</b>	
<b>GOALS</b>	
To maximize choices of single-family residential lots and/or housing for residents of the County.	A
To ensure compatible uses within and adjacent to single-family residential zoned areas.	A
To rehabilitate and/or rebuild deteriorating single-family residential areas.	NA
To provide single-family residential areas conveniently located to public and private services, shopping, other community activities and convenient access to employment centers that takes natural beauty into consideration.	A
To enhance the overall quality of life in our residential communities.	A
<b>POLICIES</b>	
To assure the orderly use of single-family residential zoned areas and to curb speculation and resale of undeveloped lots, the County may impose incremental and conditional zoning, which would be based on performance requirements. This is to assure that a certain percentage of buildings will be constructed.	A
Encourage innovative uses of land with respect to geologic and topographic conditions through the use of residential cluster and planned unit development.	A
Encourage and coordinate with the State in providing fee simple and leasehold single-family residential lots to the residents through State and/or County Housing Programs.	A
Incorporate reasonable flexibility in codes and ordinances to achieve a diversity of socio-economic housing mix and to permit aesthetic balance between single-family residential structures and open spaces.	A
Re-evaluate existing undeveloped single-family residential zoned areas and reallocate zoned lands in appropriate locations.	NA
Designate and allocate single-family residential zoned lands at varying densities for future use in accordance with the needs of the communities and the stated goals, policies, and standards.	A

<b>ELEMENTS OF THE HAWAI'I COUNTY GENERAL PLAN</b>	<b>RATING</b>
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
Rural-style residential-agricultural developments, such as new small scale rural communities or extensions of existing rural communities, shall be encouraged in appropriate locations.	NA
Review and amend land use ordinances and codes to include considerations for rural-style residential subdivisions in appropriate locations. Standards and criteria for the establishment of these areas shall be developed.	NA
Require developers to provide basic infrastructure necessary for development.	A
<b>COURSES OF ACTION North Kona</b>	
Encourage the development of appropriately located and serviced privately-held and State-owned lands for houselots.	A
Improve and develop roadways, water and sewerage systems, and other basic facilities necessary to encourage development of lands suitable for residential use.	A
Encourage the concentration of residential structures to avoid strip residential development	A
Encourage the use of more innovative types of housing development, such as zones of mix and cluster and planned unit developments.	C
<b>COMMENTARY: The Kula Nei project includes a range of lot sizes, including an affordable housing component, that is intended to implement the General Plan's housing policies.</b>	
<b>GENERAL PLAN - LAND USE RESORTS</b>	
<b>GOALS</b>	
Maintain an orderly development of the visitor industry.	NA
Provide for resort development that maximizes conveniences to its users and optimizes the benefits derived by the residents of the County.	NA
Ensure that resort developments maintain the cultural and historic, social, economic, and physical environments of Hawai'i and its people.	NA
<b>POLICIES</b>	
The County may impose incremental and conditional zoning that would be based on performance requirements.	NA
Promote and encourage the rehabilitation and the optimum utilization of resort areas that are presently serviced by basic facilities and utilities.	NA
Lands currently designated Resort should be utilized before new resorts are allowed in undeveloped coastal areas.	NA
Zoning of resort areas shall be granted when the proposed development is consistent with and incorporates the stated goals, policies and standards of the General Plan.	NA
Continue to seek funds from the State Capital Improvement Program to help develop visitor destination areas in accordance with the County's General Plan.	NA
Designate and allocate future resort areas in appropriate proportions and in keeping with the social, economic, and physical environments of the County.	NA
Evaluate resort areas and the areas surrounding existing resorts to insure that viable quality resorts are developed and that the surrounding area contributes to the quality, ambience and character of the existing resorts.	NA

<b>ELEMENTS OF THE HAWAI'I COUNTY GENERAL PLAN</b>	<b>RATING</b>
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
Encourage the visitor industry to provide resort facilities that offer an educational experience of Hawai'i as well as recreational activities.	NA
Coastal resort developments shall provide public access to and parking for beach and shoreline areas.	NA
Re-evaluate existing undeveloped resort designated and/or zoned areas and reallocate these lands in appropriate locations.	NA
Require developers to provide the basic infrastructure necessary for development.	NA
<b>COURSES OF ACTION North Kona</b>	
Discourage strip resort development along Alii Drive	NA
Re-evaluate some areas currently zoned for resort use.	NA
Improve and provide adequate roadways, sewer and water systems, and other basic amenities in all areas where higher density uses are allowed.	NA
<b>COMMENTARY: The proposed project does not include a resort component.</b>	
<b>GENERAL PLAN - LAND USE - OPEN SPACE</b>	
<b>GOALS</b>	
Provide and protect open space for the social, environmental, and economic well-being of the County of Hawai'i and its residents.	C
Protect designated natural areas.	C
<b>POLICIES</b>	
Open space shall reflect and be in keeping with the goals, policies, and standards set forth in the other elements of the General Plan.	C
Open space in urban areas shall be established and provided through zoning and subdivision regulations.	C
Encourage the identification, evaluation, and designation of natural areas.	C
Zoning, subdivision and other applicable ordinances shall provide for and protect open space areas.	C
Amend the Zoning Code to create a category for lands that should be kept in a largely natural state, but that may not be in the Conservation District, such as certain important viewplanes, buffer areas, and very steep slopes.	NA
<b>GENERAL PLAN - LAND USE - PUBLIC LANDS</b>	
<b>GOALS</b>	
Utilize publicly owned lands in the best public interest and to the maximum benefit for the greatest number of people.	A
Acquire lands for public use to implement policies and programs contained in the General Plan.	A
<b>POLICIES</b>	
Encourage uses of public lands that will satisfy specific public needs, such as housing, recreation, open space and education.	A
Encourage the adoption of State programs for State lands consistent with the General Plan.	C
State and County Capital Improvement Programs should continue to be coordinated.	NA

ELEMENTS OF THE HAWAII COUNTY GENERAL PLAN	RATING
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant's objectives NA = goal is not applicable</b>	
A sub-classification, University use, shall continue to be utilized, permitting the primary institutional and numerous supportive and accessory uses required for establishing and/or expanding a public university. Its designation shall continue to be shown on the Land Use Pattern Allocation Guide map.	NA
Support the U.S. Department of Interior, National Park Service's expansion plans for the Hawaii Volcanoes, Puukohola and Puuhonua O Honaunau National Historic Parks.	NA
Encourage the State to continue the Villages of Lai'opua project at Kealakehe.	NA
<b>COMMENTARY: The Kula Nei project includes the use of Homestead Road as a pedestrian trail and the designation of a lava tube preservation area as open space. These elements are consistent with the intent of the General Plan's open space policies.</b>	

## 5.15 KEĀHOLE TO KAILUA DEVELOPMENT PLAN

The County of Hawai'i initiated in July 1988, the Keāhole to Kailua Development Plan study (Keāhole Plan) with the intent of developing the area. The Keāhole Plan serves as an implementing tool for the General Plan of the County of Hawai'i and as a sub-regional plan and developmental framework for the West Hawai'i Plan.

The County contracted R.M. Towill Corporation to prepare the Keāhole Plan, and in 1990 adopted it to serve as a guide for future infrastructure and land uses in the region. The Hawai'i County Council in 1991 amended the plan to incorporate electricity and telephone accommodations that would allow improvements as demand increased. HELCO estimated at the time that full development could entail an additional 100 megawatts of power.

### 5.15.1 Goals and Objectives of the Keāhole to Kailua Plan

The goal of the Keāhole Plan was to develop a mixed residential, commercial, resort, industrial, and recreational community, with appropriate shoreline uses, public facilities, and infrastructure, which would be built in phases over the course of 20 years.

The objectives were to: (1) develop a plan for an integrated community that can be served by the required infrastructure in phases and provide a mix of land uses; (2) develop design guidelines for critical visual aspects; (3) develop an efficient, safe and pleasing road network over the next 10-20 years; (4) identify all areas subject to flood and tsunami inundation and develop a

comprehensive flood control system; (5) develop a water system with 6 mgd capacity to serve land uses; (6) develop area-wide system of sewage facilities with 6 mgd capacity; (7) develop adequate solid-waste facilities; (8) develop recreational facilities that would meet the rise of new residents; (8) develop a financing approach that provides infrastructure financing, feasible land development, and feasible level of County capital expenditures.

Four alternative concept plans were slated for the area. A regional center; residential development; elementary, middle and high schools; university site; community, district, and waterfront parks; municipal golf course; regional sports complex; industrial; judiciary, hospital; fire station, and cemetery were included in these plans.

### **5.15.2 Land Use Plan for the Area**

The major growth assumptions of the plan were that (1) the Keāhole to Kailua area would be the location for a new “Civic and Business Center” with civic and commercial uses; (2) 4,500 new residential units would be built between 1990 and 2010; (3) a number of facilities were planned that would serve a much larger region, including a municipal golf course, regional sports complex, and University of Hawai‘i - West Hawai‘i College; and (4) the project area would accommodate resort development in the range of 1,500 visitor units.

A flexible land use plan was developed for the area to provide a framework for future growth, infrastructure costs, public-private implementation of major infrastructure projects, and State and County action on designating lands for urban development. However, more importantly than specific boundaries, the plan emphasized that four major development themes should guide the planning and development of the area: (1) three major development zones; (2) new civic and business center; (3) major new roadways; and (4) regional greenbelt system.

### **5.15.3 Current and Projected Resident Population in West Hawai‘i**

The population in the North Kona region increased 62 percent in 1980-1990 from 13,748 to 22,284, and 28 percent in 1990-2000 from 22,284 to 28,543. (U.S. Census 2000). The following table shows the numbers as of 2000 and the projected population to the year 2020.

**Table 5-6: PROJECTION OF RESIDENT POPULATION BY DISTRICT  
YEAR 2000 TO 2020**

District	2000	2005	2010	2015	2020
North Kohala	6,038	6,622	7,917	9,446	11,273
South Kohala	13,131	15,659	18,184	21,072	24,426
North Kona	28,543	30,467	34,024	37,922	42,275
South Kona	8,589	10,253	11,414	12,681	14,092
Ka'ū	5,827	6,443	7,050	7,698	8,408
	64,128	71,449	80,599	90,834	102,494

Economic Assessment, PKF Hawaii, January 2000  
U.S. Census, 2000  
Hawai'i County Department of Research and Development

According to the County of Hawai'i General Plan, various resort and resort-residential complexes are currently under construction or are planned for construction in the near future. Most of these developments are concentrated in West Hawai'i in the Kohala and Kona Districts, which will continue to accommodate the majority of the visitor market within the County. Visitor accommodation units within the County totaled 9,655 units in 1998, up from 8,952 units in 1990. Bed and Breakfast units, although not a significant part of the total visitor unit count, have been the fastest growing segment of the industry, growing from 55 units in 1990, to 171 units in 1998.

#### **5.15.4 The Applicant's Conformance and Support of the Keāhole to Kailua Plan**

The Kula Nei project conforms to the goal of the plan to provide a significant number of new residential units in the planning area. As the project area is designated for low density urban, the project is consistent with the plan. The project also includes the extension of Holoholo Street and the development of a new regional potable well, storage reservoir and transmission system.

#### **5.15.5 Kona Community Development Plan**

The Hawai'i County General Plan requires that community development plans be adopted by the County Council for each judicial district in the county. The Kona Community Development Plan is intended to be first of the new plans and will serve as a model for the remaining districts.

It is intended to provide detail to the elements presented in the General Plan and emphasize those elements most relevant to the issues and conditions of the specific plan area.

As of the writing of this EIS, a series of Working Groups has been established to identify issues to be addressed in the Kona Community Development Plan. In January 2007, the planning consultant published the Kona Regional Profile for the plan.

According to Nancy Passichio,<sup>7</sup> the Kona Liason for the plan, issues that have emerged from the working groups include “connectivity,” village-oriented development, and affordable housing. She indicated that the draft plan is presently anticipated to be completed in “mid-summer.”

Given the anticipated schedule, it presently appears that this EIS will precede publication of the Draft Kona Community Development Plan. As we are unable to determine at this time what issues and concerns will be presented in the draft plan, it is difficult to offer educated comments or analysis. Therefore, for the purposes of this EIS, the Kona Community Development Plan is identified as an Unresolved Issue. Should publication of the plan occur during the review and comment period for this EIS, the authors will make every attempt to address the plan in the Final EIS for the Kula Nei project.

#### **5.15.6 Keāhole to Honaunau Regional Circulation Plan (2006)**

As presented in the Planning Department’s report,

“Traffic congestion in Kona is bad and growing worse. The congestion is fueled by the rapid growth and exacerbated [sic] by the road network (lack of connectivity that funnels traffic to main arterials) and land use patterns (affordable housing being pushed to the outskirts resulting in more and longer commutes). The congestion and commuting is deteriorating Kona’s quality of life. Road improvements have not kept pace with development. Past development has eliminated or compromised future roadway corridor options. Major road improvements take a long time and limited financial resources need to be prioritized and

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<sup>7</sup> Telephone interview April 14, 2007, 9:50am.

supplemented by innovative funding sources. The scope of this action plan is to address these problems.”

The report includes an action strategy. Following are the strategies that are relevant to the Kula Nei project.

<b>Keāhole to Honaunau Regional Circulation Plan</b>	<b>RATING</b>
<b>A = actively supportive C = conforms I = goal is inconsistent with applicant’s objectives NA = goal is not applicable</b>	
Strategy #2: Improve connectivity with a road network that spreads the traffic rather than funneling all the traffic to the major arterials.	A
<b>COMMENTARY: The Kula Nei project is consistent with this strategy. The inclusion of a Holoholo Street extension as part of the project contributes towards the implementation of this strategy.</b>	
Strategy #2-D: Kalaoa Connector Roads. Between two major subdivisions in Kalaoa (Kona Palisades and Coastview), internal roads extend to the subdivision boundaries in anticipation of connection, but have never been connected, thereby forcing traffic onto Māmalahoa Highway. Through a combination of private development and County action, four connections will be established to Kaiminani Drive: Nana-Holoholo, Ahiahi-Kauhale, Holu-Keokeo, and Iliili-Kiekie.	A
<b>COMMENTARY: The Kula Nei project is consistent with this strategy. The inclusion of a Holoholo Street extension as part of the project contributes towards the implementation of this strategy.</b>	
Strategy #5: Reduce commuting needs by directing growth to existing compact urban areas; encouraging affordable housing with these core urban areas; and mixing land uses so that jobs and/or daily requirements are within walking distances.	A
<b>COMMENTARY: Kula Nei’s affordable housing component is supportive of this strategy.</b>	
Strategy #5-B: ...manage growth in fringe areas in a manner that balances private property rights and furthers public interests in infrastructure management, agricultural/cultural/ecological resource protection, and rural character preservation.	A
<b>COMMENTARY: The attributes of the Kula Nei project, including the proposed Holoholo Street extension, the preservation of Homestead Road, and the low density proposed for the project, are all consistent with the intent of this strategy.</b>	
Strategy #6: Implement a concurrency system.	A
<b>COMMENTARY: The applicant supports the concept of a concurrency system so long as it provides for complicated multi-party negotiations in instances where several land owners and/or agencies are involved.</b>	
Strategy #6-A: ...projects that provide affordable housing or increase infrastructure capacity should be allowed to proceed even if the transportation infrastructure may not be adequate on the basis that such developments reduce demand (i.e., housing closer to jobs thereby reducing commuting) or build important connector roads.	A
<b>COMMENTARY: The Kula Nei project’s affordable housing component and its inclusion of a Holoholo Street extension both fulfill the intent of this strategy.</b>	



## **6 CHAPTER SIX: CONTEXTUAL**

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### **6.1 RELATIONSHIP BETWEEN SHORT-TERM USES AND MAINTENANCE OF LONG-TERM PRODUCTIVITY (SUSTAINABILITY ANALYSIS)**

The Shopoff Group proposes the reclassification of its property in North Kona from the State Agricultural District to the State Urban District, and subsequent rezoning to allow its development as a low density urban community. These actions would commit the property to residential use as they would require the provision of infrastructure in the form of new roadways; a potable water well, reservoirs, and a transmission system; a WWTP and collection system supplemented by individual wastewater treatment (septic) systems; and electrical and telecommunications utilities.

As the property is presently classified as State Agricultural and zoned for 5-acre agriculture lots, its current potential use is generally limited to agricultural uses including cultivation, animal husbandry, and agricultural dwellings. However, the relatively poor quality of the soil, together with the fact that the property is bordered on three sides by existing or planned residential subdivisions, has tended to discourage agricultural activity from occurring on the property in recent years. Consequently, it has remained unutilized and vacant, constituting an open space area for the surrounding communities.

Its undeveloped character has positive and negative consequences. On the positive side, the lack of any active use means that the property will not generate impacts associated with human activity for its neighbors.

On the negative side, because the overgrown character of the vegetation tends to block views from its perimeters, the value of the property as open space is actually quite limited. Thus, the distinction between “open space” and “vacant” is an important consideration.

As uncultivated land, the property is also susceptible to invasion by aggressive exotic plant species as well as remaining a habitat for undesired fauna such as rats and pigs. In either instance, the presence of undesirable species becomes a nuisance for surrounding property owners.

Development of the property as a residential community constitutes a permanent commitment that would remove the property from the inventory of available agricultural land. This action is consistent with the State and County plans for the area. The region of North Kona between Keāhole and Kailua-Kona is intended to function as a residential and commercial center for West Hawai‘i. Reclassification of the property to the Urban District is consistent with that intent.

As the subject property is surrounded on three sides by existing or planned residential subdivisions, residential development of the subject property is essentially infill. The two oldest existing subdivisions are classified as State Agricultural, but are urban in character. The proposed Kaloko Heights subdivision abutting the south side of Kula Nei is classified as State Urban District.

A critical element in the economy of West Hawai‘i is the increased availability of affordable housing, as well as market priced housing, to meet the demand of a growing population. Thus, the availability of housing becomes a matter of sustainability from the perspective of economic prosperity. Given the needs of the community and the character of the land, it can be argued that residential is the highest and best use of the property.

Socioeconomic benefits would accrue to the State and the County in the form of added revenue resulting from economic activity that would otherwise not occur on the property.

## **6.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

Development of the subject property as a residential community will permanently alter the use and character of the land:

Soil: Terrain consisting of 'a'a and *pāhoehoe* lava will be crushed and graded to allow the construction of roads that comply with county road design standards. The land abutting the roads will be terraced to accommodate home sites. Aggregate rock and topsoil will be imported to the Primary Project Area.

Quarry material: High quality aggregate rock is an important natural resource in an island environment. As the subject property is not considered to be a source of potential quarry material (grade-A basalt), there will be no loss of this particular natural resource by reclassifying the property from Agricultural to Urban. However, development of the project will require large amounts of aggregate rock for the construction of roadbeds and house foundations, and the production of concrete and asphalt.

Flora: Much of the existing flora will be removed (grubbed) prior to site development. Residential properties will eventually be landscaped with new plant material, including where practicable drought-tolerant species.

Fauna and avifauna: Existing fauna and avifauna will be displaced during the development process. With the exception of rats and pigs, most displaced species of fauna and avifauna will likely return once the property has been re-landscaped.

Cultural Resources: Archaeological sites and cultural resources determined to be significant under State criteria will be preserved. Homestead Road will be preserved as a pedestrian trail. Sites identified for data collection will be further analyzed and recorded in an effort to increase our understanding of the historical use of the area. Once this process is completed in accordance with the requirements of the SHPD, and has an approved mitigation plan, those sites together with sites that have been determined to require no further study, will be lost.

Development of the project will require the expenditure of energy in the form of fuel for construction vehicles and equipment and the consumption of natural and man-made resources in the form of construction materials (metal, glass, wood, plastic, etc.). Construction of the project will also require the consumption of potable water. However, some of the water used for dust control will percolate back into the soil while the remainder will evaporate.

The project will require the investment of human labor that might otherwise be employed elsewhere.

The so-called operational phase of the project, that is to say once the project is completed and the homes have been built and occupied, will require an ongoing commitment of potable water, electrical energy, and fuel for privately owned vehicles and motorized equipment.

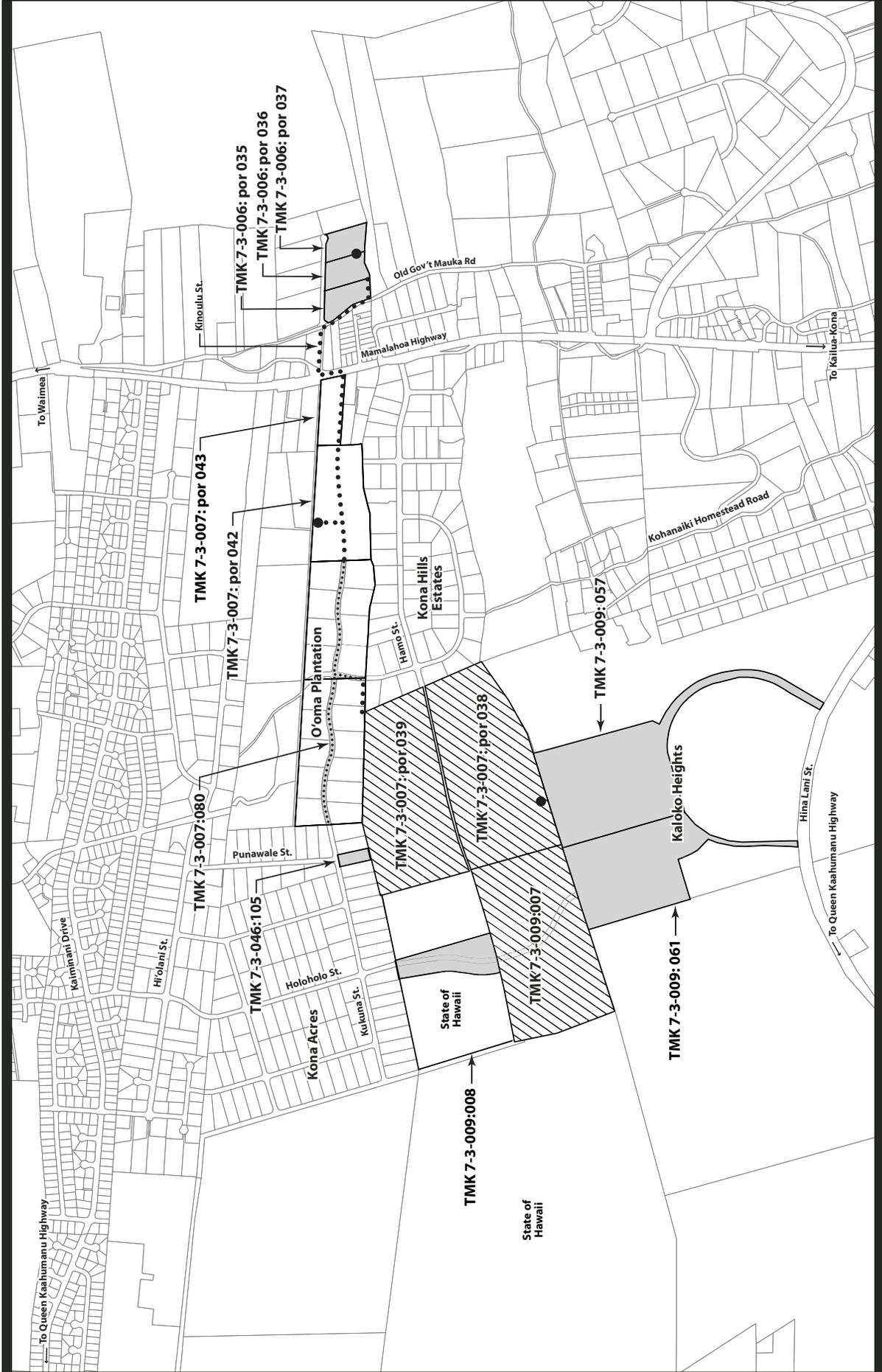
### **6.3 OFFSETTING CONSIDERATIONS OF GOVERNMENTAL POLICIES**

The proposed project is consistent with State policies that identify the property and its surrounding area as Urban Expansion to support economic growth in West Hawai‘i. The project is also consistent with the County General Plan’s designation of Low Density Residential. Other policies of the State and County promote the preservation of agricultural land. However, because the subject property is not considered to be prime agricultural land, due to its poor soil quality, its proposed development for residential use is not inconsistent with the goal of preserving important agricultural resources.

### **6.4 UNRESOLVED ISSUES**

The following issues remain unresolved at the time this document is being prepared:

**Kaloko Heights:** The proposed residential project abutting the south side of Kula Nei has secured State land use reclassification, zoning approval, and bulk-lot subdivision approval. Tax Map Parcel 7-3-009:057 (Figure 6-1) depicts a large “flag” lot with access to Hina Lani Street. It is presumed that the “pole” portion of the lot would contain the right-of-way for the future Holoholo Street extension. However, the alignment of the Holoholo Street extension across the remainder of parcel 57 is unknown. The timing and status of the Kaloko Heights project development is also unknown. A similar situation exists for parcel 61 (Figure 6-1). The bulk lot obtains access from Hina Lani Street, but it is unknown when, where and how a roadway connection between Hina Lani Street and Kula Nei across parcel 61 might be implemented.



**Figure 6-1**  
**PRIMARY PROJECT AREA AND ACCESSORY AREA**  
 Kula, Hawaii  
 North Kona, Hawaii  
 Environmental Impact Statement  
 Prepared for The Shopoff Group  
 September 2007

**LEGEND**

- ..... Existing Water Line
- ..... Proposed Water Line
- Proposed Reservoir
- ▨ Primary Project Area
- Accessory Area

0 500 1000 1500  
 SCALE IN FEET

NORTH

Belt Collins



Homestead Road: ~~While it has been determined that the County of Hawai‘i owns and has jurisdiction over Homestead Road, it is not known whether the County will grant an easement to Kula Nei for pedestrian access or will require the roadway property to be purchased. The County and the State disagree over which jurisdiction has ownership and jurisdiction over Homestead Road. The applicant is working with both the County and State to resolve this issue, and they have expressed a willingness to cooperate with the applicant so that the applicant can go forward with its plans for improvements to be made to the said roadway.~~

Kona Community Development Plan: It is likely that this EIS will be published for public and agency review and comment prior to the publication of the first draft of the Kona Community Development Plan. Thus, the content of the plan is unknown.

Concurrency Ordinance: At the time this EIS is being prepared the Hawai‘i County Council is considering a bill for an ordinance that would require the concurrent development of project-related infrastructure. It is unknown if the ordinance will be adopted, what its final language might contain, when it might become effective, and if it might impact the Kula Nei project.

County Roadway Design Standards: At the time this EIS is being prepared, the roadway design standards that will be applicable to the internal roadway network within the Kula Nei project (as well as other proposed developments in the vicinity) have not been finalized by the County of Hawai‘i Planning Department and Public Works Department. It is our understanding that discussions regarding the design standards are on going.

County Council Deferred Action on Rezoning: In early 2007, the Hawaii County Council adopted a resolution calling to defer action on any rezonings prior to adoption of the Kona Community Development Plan. It is unknown when and how this resolution might impact the Kula Nei project.

## 6.5 SECONDARY IMPACTS

The term “secondary impact” means effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. These impacts may include

growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems including ecosystems.

The Kula Nei project's primary impacts include population growth (the Kula Nei project is estimated to create homes for about 650 people), increased traffic, and demand for potable water and energy. The project's secondary impacts are effects that are induced by these primary impacts, such as the additional jobs created in the economy, and the effects resulting from the Kula Nei residents' demand for goods and services. The project's socio-economic impacts, including induced effects are fully discussed in Section 4.8 of this document.

## **6.6 CUMULATIVE IMPACTS**

Cumulative impacts are defined as impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Kula Nei represents a relatively small part of a much larger "landscape": that being the emergence of the city of Kailua-Kona. Over the past 40 years, Kailua-Kona has grown from a small sport-oriented fishing community to a regional growth center, with much of the growth occurring in the past 10 years.

The construction of the Queen Ka'ahumanu Highway in the early 1970s led to the development of several visitor destination areas along the North Kona/South Kohala coastline, including Mauna Kea Resort, Mauna Lani Resort, Waikoloa Resort, and the Hualalai Resort. The resulting demand for resort employees led the State and the County to designate the area of North Kona between Kailua-Kona and Keāhole as the primary growth area for residential and commercial development in West Hawai'i. The rapid expansion of commercial centers, including the Kona Coast Shopping Center, Makalapua Center, and the Kaloko Industrial Park clearly demonstrate the demand for new goods and services generated by an expanding residential population.

Continuing residential expansion is evidenced by two projects immediately adjacent to Kula Nei that have been approved for development: O‘oma Plantation and Kaloko Heights. Kula Nei constitutes about one fifth of the number of residential units that have been approved (but not yet built) at Kaloko Heights.

Unfortunately, the pace of commercial and residential growth has exceeded the development of transportation infrastructure to accommodate it, leaving traffic conditions along the principal arterials (Queen Ka‘ahumanu Highway and Māmalahoa Highway) to deteriorate. The rapid emergence of this “crisis” has caught many residents and community leaders by surprise, leading for calls to carefully examine the future of the area.

However, Kailua-Kona is already on a path of growth fueled by an abundance of developable land, lack of existing housing stock, a highly desirable climate, and a constant supply of visitors to West Hawai‘i. Noticeably, the commercial and population expansion around Kailua-Kona parallels the health of the visitor industry. Since recovering from the downturn of visitor arrivals in the early 1990s, the visitor industry has enjoyed a decade of expansion. Economic cycles are inevitable and a resolution of the traffic “crisis” will likely occur when the current visitor industry cycle ends and a downturn in visitor arrivals allows the gap between roadway capacity and travel demand to narrow. The challenge facing taxpayers at that time will be the courage to support public investment in infrastructure during an economic downturn. However, that is precisely when jobs will be needed the most.

As a primary market residential development, the cumulative impact of the Kula Nei project will be its contribution to the long term stability of the resident population of the city of Kailua-Kona. New communities like Kula Nei, O‘oma Plantations, and Kaloko Heights help to fulfill the goal of a strong and healthy West Hawai‘i economy.



# CHAPTER SEVEN: PARTIES CONSULTED AND THOSE WHO PARTICIPATED IN THE PREPARATION OF THIS EIS

## 7.1 CONSULTED PARTIES, EISPN COMMENTS AND RESPONSES

The Shopoff Group, ~~L.P.~~ on November 27, 2006 submitted a *Petition for Land Use District Boundary Amendment; Verification; Exhibits "1 to 22"*; Certified of Service to the State of Hawaii LUC. A copy of The Shopoff Group's *Environmental Impact Statement Preparation Notice* (EISPN) was attached to the Petition as Exhibit 8. Additional copies of the EISPN, together with the *Office of Environmental Control (OEQC) Bulletin Publication Form* and *EISPN Distribution List* were also provided to the LUC for forwarding to the OEQC, State DOH. The OEQC on December 23, 2006 published in its Bulletin a summary of the EISPN to officially notify the public of The Shopoff Group's *Petition for Land Use District Boundary Amendment*.

The following parties, in addition to the LUC and the OEQC, have either received copies of the EISPN and/or will be receiving a copy of the ~~Draft~~ Final EIS for participation in the EIS process.

Respondents and Distribution		Received Nov 2006 EISPN	Comments Received on EISPN	Received DEIS	Comments Received on DEIS	Will Receive FEIS
<b>A. Federal Agencies</b>						
	Department of Housing and Urban Development (HUD)	X	X	X		X
	US Army Corps of Engineer	X				
	US Fish and Wildlife Service (USFWS)	X		X		X
	US Natural Resources Conservation Service	X				
<b>B. State Agencies</b>						
	Department of Accounting and General Services			X	X	X
	Department of Agriculture	X				
	Department of Business, Economic Development and Tourism (DBEDT)	X		X		X
	- Hawai'i Housing and Finance Development Corporation	X				
	- Land Use Commission (LUC)	X		X		X
	- Office of Planning	X	X	X		X
	- Strategic Industries Division	X		X	X	X

<b>Respondents and Distribution</b>	<b>Received Nov 2006 EISPN</b>	<b>Comments Received on EISPN</b>	<b>Received DEIS</b>	<b>Comments Received on DEIS</b>	<b>Will Receive FEIS</b>
<u>Department of Defense</u>			X	X	X
Department of Education (DOE)	X	X	X	X	X
Department of Hawaiian Home Lands (DHHL)	X		X		X
Department of Health (DOH)	X	X	X		X
Department of Labor and Industrial Relations	X				
Department of Land & Natural Resources (DLNR)	X		X		X
- <u>Commission on Water Resource Management</u>				X	X
- Engineering Division		X		X	X
- Historic Preservation Division	X	X	X		X
- Land Division		X		X	X
- <u>Na Ala Hele</u>	X		X	X	X
Department of Public Safety	X				
Department of Transportation (DOT)	X	X	X	X	X
Hawai'i Public Housing Authority	X		X		X
Office of Environmental Quality Control (OEQC)	X	X	X	X	X
Office of Hawaiian Affairs	X	X	X		X
Office of the Governor	X				
University of Hawai'i – Environmental Center	X		X	X	X
University of Hawai'i – Hilo Campus (see Libraries)	X	X			
University of Hawai'i at Manoa	X				
<u>University of Hawaii at Manoa – Water Resources Research Center</u>			X		X
<b>C. County of Hawai'i</b>					
Civil Defense Agency		X	X		X
Department of Environmental Management	X	X	X	X	X
- Solid Waste Division	X	X			
- Wastewater Division	X	X			
- <u>Technical Services</u>			X	X	X
Department of Parks and Recreation	X		X	X	X
- Parks Maintenance Division	X				
- Recreation Division	X				
Department of Public Works	X		X		X
- Building Division	X				
- Engineering Division	X				
- Highway Maintenance Division	X				
- Traffic Division	X		X		X
Department of Research and Development	X	X	X	X	X
Department of Water Supply	X	X	X	X	X
Finance Department	X		X		X
- Public Access, Open Space, and Natural Resource Preservation Commission	X				
- Real Property Tax Division	X				
Fire Department	X	X	X	X	X
Mass Transit Agency	X				
Office of Housing and Community Development	X		X		X
Office of the Mayor	X				
Planning Department	X	X	X		X

<b>Respondents and Distribution</b>		<b>Received Nov 2006 EISPN</b>	<b>Comments Received on EISPN</b>	<b>Received DEIS</b>	<b>Comments Received on DEIS</b>	<b>Will Receive FEIS</b>
	Police Department	X	X	X	X	X
<b>D. Elected Officials</b>						
	Councilmember: County District 6	X	X	X	X	X
	Councilmember: County District 7	X		X		X
	Councilmember: County District 8	X		X		X
	Councilmember: County District 9	X		X		X
	<u>The Honorable Mayor Harry Kim</u>			X		X
	US Representative <del>Ed Case</del> <u>Mazie Hirono</u>	X				
	US Senator Daniel Akaka	X				
	US Senator Daniel Inouye	X				
<b>E. News Media</b>						
	Hawai'i Tribune Herald	X		X		X
	Honolulu Advertiser	X		X		X
	Honolulu Star Bulletin	X		X		X
	West Hawai'i Today	X		X		X
<b>F. Public Libraries and Depositories</b>						
	Bond Memorial Public Library	X				
	<u>City and County of Honolulu Department of Customer Services, Municipal Reference Library</u>			X		X
	DBEDT Library	X		X		X
	Hawai'i State Main Library	X		X		X
	Hilo Public Library	X				
	Holualoa Public Library	X				
	Kailua-Kona Public Library	X		X		X
	Kealahou Public Library	X				
	Legislative Reference Bureau Library	X		X		X
	Thelma Parker Memorial Public/School Library	X				
	UH Hilo Library	X		X		X
	<u>University of Hawaii – Hamilton Library</u>	X		X		X
<b>G. Community Organizations, Associations, and Other Groups</b>						
	Concerned Citizens of Kona	X				
	General Contractors Association of Hawai'i	X				
	Hawai'i Island Economic Development Board	X				
	Hawai'i Island Board of Realtors	X				
	Hawai'i Island Chamber of Commerce	X				
	Hawai'i Island Community Development Corporation	X				
	Hawai'i Leeward Planning Conference	X				
	Kona Board of Realtors	X				
	Kona Community Development Plan Steering Committee	X				
	Kona Hills Estates Community Association	X				
	Kona-Kohala Chamber of Commerce	X				
	Kona Traffic Safety Committee	X	X	X		X
	Kuakini Hawaiian Civic Club	X				
	People's Advocacy for Trails Hawai'i (PATH)	X				

Respondents and Distribution		Received Nov 2006 EISPN	Comments Received on EISPN	Received DEIS	Comments Received on DEIS	Will Receive FEIS
<b>H. Local Utilities</b>						
	Hawaii Electric Light Company, Inc. - Hilo	X		X		X
	Hawaiian Electric Company, Inc. - Honolulu	X		X		X
	Oceanic Time Warner Cable	X				
	Hawaiian Telecom, Inc.	X				
<b>I. Other</b>						
	<u>Stanford Carr Development Corporate Offices</u>			X		X
	<u>Ms. Barbara Scott</u>			X		X

## 7.2 ORGANIZATIONS AND INDIVIDUALS WHO ASSISTED IN THE PREPARATION OF THIS ENVIRONMENTAL IMPACT STATEMENT

### 7.2.1 Belt Collins Hawaii, Ltd.

Anne Mapes, Principal

Sue Sakai, Director of Planning

Lee Sichter, Principal Planner and Project Manager

Mary O'Leary, Senior Planner

Gene Yong, Senior Planner

John Kirkpatrick, Senior Socio-economic Analyst

Diane Yamamoto, Graphic Designer

Alexa Jacroux Biggs, GIS Project Manager

Walter Billingsley, Civil Infrastructure Consultant

Daughn O'Neill, Word processor/Editor

### 7.2.2 Subconsultants

Steve Bowles, Hydrology Consultant

Philip L. Bruner, Avifaunal and Feral Mammal Environmental Consultant

John Ford, Cave Biology Consultant

Dick Kaku, Traffic Consultant

Barry D. Neal, Air Quality Consultant

Bruce Plasch, Soils and Agriculture Consultant

Bob Rechtman, Archaeology and Cultural Resources Consultant

Art Whistler, Ph.D., Botanical Consultant



# **EISPN LETTERS**





U.S. Department of Housing and Urban Development

Honolulu Field Office – Region IX  
500 Ala Moana Boulevard, Suite 3A  
Honolulu, Hawaii 96813-4918  
www.hud.gov  
espanol.hud.gov

RECEIVED

2006 DEC 28 AM 11:00

DECEMBER

27 2006

BELT COLLINS HAWAII

Mr. Gene Young  
Belt Collins Hawaii Ltd.  
2153 North King Street, Suite 200  
Honolulu, HI 96819

Dear Mr. Young:

SUBJECT: Request for Comments on Proposed Action  
Kula Nei Project, O'oma, North Kona, Island of Hawaii

Thank you for advising HUD of the proposed action. The HUD Honolulu Field Office has no comments regarding the proposed action. We appreciate the efforts of your company to keep this office informed of activities that may have an impact on the citizens and residents of Hawaii and request that you continue to include this office on your distribution list for such notices.

If you need any additional information, please contact Mr. Richard L. Knight, Community Planning and Development Representative, at (808) 522-8180, extension 263.

Sincerely,

Mark A. Chandler  
Director  
Office of Community Planning  
and Development

cc:  
Office of Environmental Quality Control  
235 South Beretania Street, Suite 702  
Honolulu, HI 96813

Land Use Commission  
P.O. Box 2359  
Honolulu, HI 96804-2359



May 31, 2007  
2006.33.1300 / 07P-176

Mr. Mark A. Chandler, Director  
Office of Community Planning and Development  
U.S. Department of Housing and Urban Development  
Honolulu Field Office – Region IX  
500 Ala Moana Boulevard, Suite 3A  
Honolulu, HI 96813-4918

Dear Mr. Chandler:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your letter of December 27, 2006. We acknowledge that your office has no comment regarding the proposed project. Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

MJO:lf

*The Super 75 Group*



2007 JAN 5 PM 12 32

PLANNING DEPARTMENT  
COUNTY OF HAWAII

STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P.O. BOX 2360  
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

January 4, 2007

Mr. Christopher J. Yuen  
Planning Director  
County of Hawaii  
101 Pauahi Street, Suite 3  
Hilo, Hawai'i 96720

Dear Mr. Yuen:

Subject: State Land Use Boundary Amendment for the Kula Nei Project, O'oma, North Kona, TMK 7-3-7: 38 & 39 and 7-3-9: 7 (A06-770, PD No. 06-000006)

The Department of Education (DOE) has reviewed the application for a boundary amendment and the Environmental Impact Statement Preparation Notice (EISPN) for the Kula Nei Project in North Kona. The DOE believes that the project will generate additional students for the Kealakehe complex of schools. The estimates of student enrollment would be approximately 89 elementary students; 46 intermediate students, and 25 high school students.

Listed below are recent enrollment figures, facility capacity calculations, and an estimate of enrollment in the 2011-2012 school year. The estimated enrollment figures in future years do not specifically include the students expected to reside in Kula Nei but do take into account current trends in enrollment at the Kealakehe schools.

Kealakehe Schools	SY 02-03	SY 03-04	SY 04-05	SY 05-06 Facility Capacity	SY 05-06 enroll.	SY 06-07 enroll.	# of 2006 students over 2005 capacity	2011-2012 projected enroll.	# of 2011 students over 2005 capacity
<b>Enrollments</b>									
Kealakehe Elementary	965	965	989	983	960	983	0	1118	135
Kealakehe Intermediate	1014	1023	1052	1055	965	933	-122	874	-181
Kealakehe High School	1437	1440	1450	1480	1530	1567	87	1395	-85

023827

Mr. Christopher Yuen  
Page 2  
January 4, 2007

The enrollment figures indicate that enrollment has been stable at Kealakehe Elementary, but is expected to increase enough that in the 2011-2012 school year, the enrollment will exceed the 2005-2006 facility capacity calculation by 135 students. Enrollment at Kealakehe Intermediate has declined over the past five years and is expected to continue declining. The present enrollment and projected enrollment can be accommodated in the existing facility. Finally, the enrollment in the high school has grown in recent years but is projected to decline by 2011-2012.

The DOE requests the imposition of a school fair-share contribution on the project as a condition of land use approval. The standard language is as follows:

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 building permits for any aspect of the project.

The DOE appreciates this opportunity to review this application and EISPN. If you have any questions, please call Heidi Meeker of the Facilities Development Branch at (808) 733-4862.

Very truly yours,



Patricia Hamamoto  
Superintendent

PH:jmb

c: Randolph Moore, Acting Assistant Superintendent, OBS  
Duane Kashiwai, Public Works Manager, FDB  
Art Souza, CAS, Honokaa/Kealakehe/Kohala/Konawaena Complex Areas  
Genevieve Salmonson, OEQC  
Anthony Ching, SLUC  
Gene Yong, Belt Collins



May 31, 2007  
2006.33.1300 / 07P-181

Ms. Patricia Hamamoto, Superintendent  
Department of Education  
State of Hawaii  
P.O. Box 2360  
Honolulu, HI 96804

Dear Ms. Hamamoto:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

Thank you for the opportunity for our project team to meet with Stanford Beppu and Heidi Meeker of the Department of Education on August 30, 2006 and for your January 4, 2007 comment letter to Mr. Christopher Yuen regarding the above project. Following are our responses to your comments in the order they were presented in your letter.

1. The Department of Education believes that the total DOE student enrollment from Kula Nei will, when the project is fully built out, come to:
  - a. 89 ELEMENTARY
  - b. 46 INTERMEDIATE
  - c. 25 HIGH SCHOOL

Based on local household sizes, historical levels of enrollment of young people from the surrounding area in public versus private schools, and housing purchase trends, we estimate that the total DOE enrollment would amount to 126 pupils, or 79% of the DOE estimate.

We note that total enrollment is not the same as total impact: most of the Kula Nei students in DOE schools will already be enrolled, and may be enrolled in the same schools.

Thank you for providing enrollment figures and facility capacity calculations for the Kealakehe School complex. We recognize that DOE projections indicate that Kealakehe Elementary will have some 135 students above its recent capacity by 2011-2012. Kealakehe Intermediate and Kealakehe High School are expected to have lower enrollments by that year than they do now, and will be below capacity. School enrollments at or beyond capacity are a serious concern for residents.

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

2. The Shopoff Group 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 The Shopoff Group and the Department of Education prior to obtaining final subdivision approval. This language will be explicitly stated in the forthcoming Draft Environmental Impact Statement (EIS). Based on our meeting on August 30, 2006, it is our understanding that the Kula Nei project's fair share contribution can be met with payment of school fees and that contribution of land will not be required for the Kula Nei project.

The Kula Nei units subject to the DOE fair share calculation involve the approximately 220 single-family housing units and 50 affordable multi-family housing units.

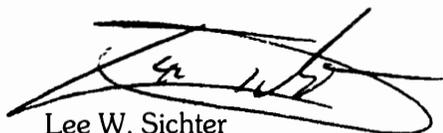
Non-residential development components of Kula Nei, such as the preservation areas, trails and open space are not subject to the DOE fair share calculations.

Fair share contributions are unresolved at this time. The Shopoff Group will work with the Department of Education to determine the final fair share contribution to be paid in fees.

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.



Lee W. Sichter  
Principal Planner

MJO:lf

G. Yong -

PHONE (808) 594-1888



RECEIVED

FAX (808) 594-1865

2007 JAN 16 PM 1:52

BELT COLLINS HAWAII

**STATE OF HAWAII**  
**OFFICE OF HAWAIIAN AFFAIRS**  
711 KAPI'OLANI BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813

HRD06/2851

January 8, 2007

Gene Yong  
Project Planner  
Belt Collins Hawaii, Ltd.  
2153 North King Street, Suite 200  
Honolulu, HI 96819-4554

**RE: Environmental Impact Statement Preparation Notice (EISPN) for the Kula Nei Project, North Kona, Hawai'i Island, TMKs: 7-3-007:038 & 039, 7-3-009:007**

Dear Gene Yong,

The Office of Hawaiian Affairs (OHA) is in receipt of your December 15, 2006, request for comments on the above-referenced, proposed project, which would include low-density residential development. OHA offers the following comments.

Should the project go forward, we recommend use of the smallest (lightest) construction equipment possible, based on your description of subterranean conditions, which indicate the possible presence of underground voids and/or lava tubes. These landforms may contain significant traditional Hawaiian cultural resources, including rare artifacts and/or burials. There have been recent breaches of these kinds of features on the Big Island. We recommend extreme caution in clearing, grading and grubbing the project area. We also recommend consultation with our Kona Community Resources Coordinator, Ruby McDonald (address below), if you have not already done so.

OHA understands that the archaeological inventory survey will be included in the Draft Environmental Impact Statement (DEIS), both of which we look forward to reviewing. We also request the opportunity to review other historic-preservation documents for submission to the State Historic Preservation Division (DLNR), including the burial treatment plan, preservation plan and data recovery plan.

Gene Yong  
Project Planner  
January 8, 2007  
Page 2

OHA further requests your assurances that if this project goes forward, should iwi kūpuna or Native Hawaiian cultural or traditional deposits be found during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment, and we look forward to providing a more detailed review of the forthcoming DEIS. If you have further questions, please contact Jesse Yorck, Policy Advocate – Native Rights, at (808) 594-0239 or [jessey@oha.org](mailto:jessey@oha.org).

Sincerely,



Clyde W. Nāmu'o  
Administrator

C: Ruby McDonald  
Community Resources Coordinator  
OHA – Kona Office  
75-5706 Hanama Place, Suite 107  
Kailua-Kona, HI 96740

Office of Environmental Quality Control  
235 South Beretania Street, Suite 702  
Honolulu, HI 96813

Land Use Commission  
P.O. Box 2359  
Honolulu, HI 96819



May 31, 2007  
2006.33.1300 / 07P-187

Mr. Clyde W. Namuo, Administrator  
Office of Hawaiian Affairs  
State of Hawaii  
711 Kapiolani Boulevard, Suite 500  
Honolulu, HI 96813

Dear Mr. Namuo:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your letter of January 8, 2007 to Mr. Gene Yong regarding the above project. Following are our responses to your comments in the order they were presented in your letter.

1. A geotechnical reconnaissance study for the subject parcel has been conducted to determine the location of lava tubes, caves, and voids. Care will be taken when grading in the vicinity of these features. Ms. Ruby MacDonald, Kona Community Resources Coordinator for the Office of Hawaiian Affairs, was consulted in preparation of the Draft EIS. She was one of those interviewed for the Cultural Impact Assessment for the proposed project.
2. An archaeological inventory survey and a cultural impact assessment will be included in the Draft EIS. In the event that other historic preservation documents are submitted to the State Historic Preservation Division (DLNR), a copy of those documents will also be submitted to the Office of Hawaiian Affairs.
3. The developer will be responsible to ensure that work will cease and the appropriate agencies will be contacted pursuant to applicable law should iwi kupua or Native Hawaiian cultural or traditional deposits be found during ground disturbance activities.

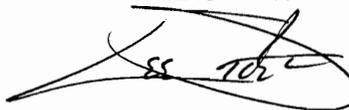
Honolulu  
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Philippines  
Seattle  
Singapore  
Thailand

Mr. Clyde W. Namuo  
May 31, 2007  
2006.33.1300 / 07P-187  
Page 2

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read "Lee W. Sichter", written over a horizontal line.

Lee W. Sichter  
Principal Planner

MJO:lf

LINDA LINGLE  
GOVERNOR OF HAWAII



RECEIVED

2007 JAN 11 PM 2:04

BELT COLLINS HAWAII

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

PETER T. YOUNG  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
DEPUTY DIRECTOR - LAND

DEAN NAKANO  
ACTING 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 8, 2007

Mr. Gene Young Project Manager  
Belt Collins Hawaii LTD  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819

LOG NO: 2006.4282  
DOC NO: 0701MK09  
Archaeology

Dear Mr. Young:

**SUBJECT: Chapter 6E-42 Historic Preservation Review [County] -  
Environmental Impact Statement Preparation Notice and Request for Consultation  
Kula Nei Project  
Ooma 1<sup>st</sup> and 2<sup>nd</sup> Ahupuaa, North Kona District, Island of Hawaii  
TMK: (3) 7-3-007:038 and 039 and 7-3-009:007**

Thank you for the notification and request for consultation on the above mentioned project. We look forward to reviewing the draft document, and participating in the consultation process for this project.

We note in your text that archaeological inventory surveys have been conducted on the subject parcel, and that preservation plans and burial treatment plans may have already been prepared in advance of the draft Environmental Impact Statement (EIS). Please ensure that a copy of the archaeological inventory survey, and preservation plan(s), are included in the draft EIS along with all former correspondence with SHPD pertaining to same project.

Please direct any questions or concerns to the Maui Office Annex of the State Historic Preservation Division at (808) 243-5169 or (808) 243-4641.

Aloha,

  
Melanie Chinen, Administrator  
State Historic Preservation Division

MK:kf



May 31, 2007  
2006.33.1300 / 07P-177

Ms. Melanie Chinen, Administrator  
State Historic Preservation Division  
Department of Land and Natural Resources  
State of Hawaii  
601 Kamokila Boulevard, Room 555  
Kapolei, HI 96707

Dear Ms. Chinen:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your letter of January 8, 2007 to Mr. Gene Yong regarding the above project. Following are our responses to your comments in the order they were presented in your letter.

1. Archaeological inventory survey reports and a cultural impact assessment will be included in the Draft EIS. Three of the four reports are awaiting approval by the State Historic Preservation Division.
2. Preservation plans and burial treatment plans cannot be included in the Draft EIS because they cannot be prepared until all the archaeological inventory surveys are approved by SHPD.
3. All relevant correspondence with SHPD pertaining to this project will be included in the Draft EIS.

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

MJO:lf

Honolulu  
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Philippines  
Seattle  
Singapore  
Thailand

LINDA LINGLE  
GOVERNOR OF HAWAII

2007 JAN 31 AM 10 40



PLANNING DEPARTMENT  
COUNTY 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  
  
ROBERT K. MASUDA  
DEPUTY DIRECTOR  
  
DEAN NAKANO  
ACTING DEPUTY DIRECTOR - WATER  
  
AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

December 8, 2006

MEMORANDUM

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

RECEIVED  
LAND DIVISION  
2007 JAN 9 P 2:40  
NATURAL RESOURCES  
STATE OF HAWAII

FROM: Russell Y. Tsuji  
SUBJECT: State Land use Boundary Amendment A06-770  
LOCATION: North Kona, Hawaii, TMK: (3) ~~3-7-9-38~~, 39 and ~~3-7-9-7~~  
APPLICANT: The Shopoff Group, L.P. 7-3-9:38,39 7-39:7

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by January 9, 2007.

A copy of the document is available for your review in Land Division office, Room 220.

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

Attachments

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

Signed: *[Signature]*  
Date: 1/8/07

2007 JAN 31 AM 10 40

DEPARTMENT OF LAND AND NATURAL RESOURCES  
PLANNING AND PERMITTING DIVISION  
ENGINEERING DIVISION  
COUNTY OF HAWAII

LA/RYT

Ref.: SLUBdryAmendNkona  
Hawaii.344

COMMENTS

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

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

- ( ) Mr. Robert 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. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.
- ( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
- ( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments: \_\_\_\_\_  
\_\_\_\_\_

( ) Other: \_\_\_\_\_  
\_\_\_\_\_

Should you have any questions, please call Ms. Alyson Yim of the Planning Branch at 587-0259.

Signed: Eric T. Hirano  
ERIC T. HIRANO, CHIEF ENGINEER  
Date: 1/29/07



May 31, 2007  
2006.33.1300 / 07P-183

Mr. Eric T. Hirano, Chief Engineer  
Engineering Division  
Department of Land and Natural Resources  
State of Hawaii  
P.O. Box 621  
Honolulu, HI 96809

Dear Mr. Hirano:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your letter of January 9 regarding the above project. We acknowledge that your office confirms that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone X. The Flood Insurance Program does not have any regulations for development within Zone X.

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read 'Lee W. Sichter'.

Lee W. Sichter  
Principal Planner

MJO:lf

Honolulu  
Guam  
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LINDA LINGLE  
GOVERNOR OF HAWAII

2007 JAN 31 AM 10 40



PLANNING DEPARTMENT  
COUNTY 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

ROBERT K. MASUDA  
DEPUTY DIRECTOR

DEAN NAKANO  
ACTING 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 29, 2007

County of Hawaii  
Planning Department  
101 Pauahi Street Suite 3  
Hilo, Hawaii 96720

Attention: Norman Hayashi

Gentlemen:

Subject: The Shopoff Group, L.P. State Land Use Boundary Amendment, North Kona, Hawaii, Tax Map Key: (3) 7-3-7:38, 39 and 7-3-9:7

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

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

Sincerely,

Russell Y. Tsuji  
Administrator

Cc: Central Files

024616



May 31, 2007  
2006.33.1300 / 07P-194

Mr. Russell Y. Tsuji, Administrator  
Land Division  
Department of Land and Natural Resources  
State of Hawaii  
P.O. Box 621  
Honolulu, HI 96809

Dear Mr. Tsuji:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your letter of January 29, 2007 to County of Hawaii Planning Department regarding the above project. We acknowledge your comment that, other than the Engineering Division, the Department of Land and Natural Resources has no other comments to offer on the subject matter.

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

MJO:lf

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

Gene Yang

LINDA LINGLE  
GOVERNOR OF HAWAII



RECEIVED  
GENEVIEVE SALMONSON  
DIRECTOR

2007 JAN 23 PM 2:35

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

BELT COLLINS HAWAII

235 SOUTH BERETANIA STREET  
SUITE 702  
HONOLULU, HAWAII 96813  
TELEPHONE (808) 586-4185  
FACSIMILE (808) 586-4186  
E-mail: oeqc@health.state.hi.us

January 16, 2007

Mr. Anthony Ching, Executive Officer  
State Land Use Commission  
235 South Beretania Street, 4th Floor  
Honolulu, Hawai'i 96813

Dear Mr. Ching:

Subject: EISPN for Kula Nei Project, Island of Hawai'i

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

1. Describe where will the residents shop. Is the nearest shopping area within walking distance?
2. The impacts of the private wastewater treatment plant should be fully disclosed in the EIS.
3. Please describe ongoing and future projects in the vicinity of this development and describe the cumulative impacts in the EIS

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

Sincerely,

Genevieve Salmonson  
Director

for

c: Shopoff  
Belt Collins



May 31, 2007  
2006.33.1300 / 07P-190

Ms. Genevieve Salmonson, Director  
Office of Environmental Quality Control  
State of Hawaii  
235 South Beretania Street, Suite 702  
Honolulu, HI 96813

Dear Ms. Salmonson:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your letter of January 16, 2007 to Mr. Anthony Ching regarding the above project. Following are our responses to your comments in the order they were presented in your letter.

1. The Draft EIS will address the issues raised in your letter including, but not limited to, a description of the proposed private wastewater treatment system, potential impacts and mitigative measures; and a discussion of projects in the vicinity of the Kula Nei project and potential cumulative impacts and mitigative measures.

With regard to a description of where people will shop, it must be assumed that the shopping habits of future Kula Nei residents will depend largely upon their specific needs and the location of retail and wholesale outlets that best serve those needs. The nearest existing shopping areas are not within walking distance of the Kula Nei project.

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

MJO:lf

2007 JAN 19 4 26 PM 12 24  
GOVERNOR OF HAWAII

PLANNING DEPARTMENT  
COUNTY 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:

EPO-7-002

January 19, 2007

Mr. Christopher J. Yuen, Director  
County of Hawaii  
Planning Department  
101 Pauahi Street, Suite 3  
Hilo, Hawaii 96720-3043

Dear Mr. Yuen:

SUBJECT: State Land Use Boundary Amendment A06-770 (PD No. 06-000006) and  
Environmental Impact Statement Preparation Notice for Kula Nei Project at  
O'oma, North Kona, Island of Hawaii, Hawaii  
TMK: (3) 7-3-007: 038 and 039  
(3) 7-3-009: 007

Thank you for allowing us to review and comment on the subject documents. The documents were routed to the various branches of the Environmental Health Administration. We have the following Wastewater Branch, Safe Drinking Water Branch and Clean Water Branch comments.

Wastewater Branch

We have reviewed the subject notice which proposes a 270 lot low density residential development, with approximately 220 single-family home sites as well as the number of affordable housing units needed to conform to the County's affordable housing requirements

The subject project is located in the Critical Wastewater Disposal Area (CWDA) with five (5) acres exception as determined by the Hawaii County Wastewater Advisory Committee. Lots that are five (5) acres or more in size are eligible to utilize non-treatment individual wastewater systems ((IWSs) such as cesspools.

The preparation notice did not provide details of how wastewater generated from the project is to be collected, treated and disposed of other than to state a combination of onsite systems as well as private wastewater treatment facility will be used. Please be aware that the minimum lot size to utilize an onsite wastewater system is 10,000 square feet. A limit on the number of onsite wastewater systems is also contained in Hawaii Administrative Rules, Chapter 11-62. Exceeding this limit can only be accomplished by variance from our rule.

024498

Mr. Yuen  
January 19, 2007  
Page 2

In addition, HRS, Section 343-5(a)(9) may trigger an environmental assessment if a wastewater treatment facility is utilized. This matter is also in need of being addressed.

We further encourage the developer to utilize recycled wastewater for irrigation and other non-potable water purposes in open space and landscaping areas whenever possible.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater System." 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 (808) 586-4294.

#### Safe Drinking Water Branch

We have reviewed the EIS Preparation Notice for the subject project (270 residential units in North Kona). We understand the applicant is proposing to construct its own source, storage, and transmission network for its potable water requirements and upon completion will dedicate it to the Hawaii County Department of Water Supply. All projects that propose development of new sources of portable water serving or proposed to serve a public water system must comply with the terms of Section 11-20-29 of the Hawaii Administrative Rules, Title 11, Chapter 20, titled Rules Relating to Potable Water Systems. This section requires that all new public water system sources be approved by the Director of Health prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.

The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses for all regulated contaminants, performed by a laboratory certified by the State Laboratories Division of the state of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this submittal or additional tests required upon his or her review of the information submitted.

Furthermore, all sources of public water systems must undergo a source water assessment which will delineate a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the source of drinking water.

The document does not mention if the applicant plans to use brackish and/or reclaimed water for non-potable water uses such as irrigation. However if the applicant proposes the use of dual water systems or the use of a non-potable water system in proximity to an existing potable water

Mr. Yuen  
January 19, 2007  
Page 3

system to meet irrigation or other needs, he or she must be careful in the design and operation of these systems to prevent the cross-connection of these systems and prevent the possibility of backflow of water from the non-potable system to the potable system. The two systems must be clearly labeled and physically separated by air gaps or reduced pressure principle backflow prevention devices to avoid contaminating the potable water supply. In addition backflow devices must be tested periodically to assure their proper operation. Further, all non-potable spigots and irrigated areas should be clearly labeled with warning signs to prevent inadvertent consumption of non-potable water. Compliance with Hawaii Administrative Rules, Title 11, Chapter 11-21 titled Cross Connection and Backflow Control is required.

Should you have any questions regarding the potable water system, please contact Mr. Kumar Bhagavan of the SDWB Compliance Section at 586-4258 in Honolulu.

Injection wells used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under Hawaii 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 operating 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.

A UIC permit can have a valid duration of up to 5 years. Permit renewal is needed to keep an expiring permit valid for another term.

Questions about UIC may be directed to Mr. Chauncey Hew at 586-4258.

#### Clean Water Branch

The Department of Health (DOH), Clean Water Branch (CWB) has reviewed the limited information contained in the subject document and offers the following comments:

1. The Army Corps of Engineers should be contacted at (808) 438-9258 for this project. Pursuant to Federal Water Pollution Control Act (commonly known as the "Clean Water Act" (CWA) Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) 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..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40, Code of Federal Regulations (CFR), Section 122.2; and Hawaii Administrative Rules (HAR), Chapter 11-54.

Mr. Yuen  
January 19, 2007  
Page 4

2. In accordance with HAR, Sections 11-55-04 and 11-55-34.05, the Director of Health may require the submittal of an individual permit application or a Notice of Intent (NOI) for general permit coverage authorized under the National Pollutant Discharge Elimination System (NPDES).
  - a. An application for an NPDES individual permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at:  
<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html>.
  - b. An NOI to be covered by an NPDES general permit is to be submitted at least 30 days before the commencement of the respective activity. A separate NOI is needed for coverage under each NPDES general permit. The NOI forms may be picked up at our office or downloaded from our website at:  
<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.
    - i. Storm water associated with industrial activities, as defined in Title 40, CFR, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi). [HAR, Chapter 11-55, Appendix B]
    - ii. 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.** [HAR, Chapter 11-55, Appendix C]
    - iii. Discharges of treated effluent from leaking underground storage tank remedial activities. [HAR, Chapter 11-55, Appendix D]
    - iv. Discharges of once through cooling water less than one (1) million gallons per day. [HAR, Chapter 11-55, Appendix E]
    - v. Discharges of hydrotesting water. [HAR, Chapter 11-55, Appendix F]
    - vi. Discharges of construction dewatering effluent. [HAR, Chapter 11-55, Appendix G]
    - vii. Discharges of treated effluent from petroleum bulk stations and terminals. [HAR, Chapter 11-55, Appendix H]
    - viii. Discharges of treated effluent from well drilling activities. [HAR, Chapter 11-55, Appendix I]

Mr. Yuen  
January 19, 2007  
Page 5

- ix. Discharges of treated effluent from recycled water distribution systems. [HAR, Chapter 11-55, Appendix J]
  - x. Discharges of storm water from a small municipal separate storm sewer system. [HAR, Chapter 11-55, Appendix K]
  - xi. Discharges of circulation water from decorative ponds or tanks. [HAR, Chapter 11-55, Appendix L]
3. In accordance with HAR, Section 11-55-38, the applicant for an NPDES permit is required 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. If applicable, please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.
4. Any discharges related to project construction or operation activities, with or without a Section 401 WQC or NPDES permit coverage, shall comply with the applicable State Water Quality Standards as specified in HAR, Chapter 11-54.

The Hawaii Revised Statutes, Subsection 342D-50(a), requires that "[n]o person, including any public body, shall discharge any water pollutants into state waters, or cause or allow any water pollutant to enter state waters except in compliance with this chapter, rules adopted pursuant to this Chapter, or a permit or variance issued by the director."

If you have any questions, please contact Mr. Alec Wong, Supervisor of the Engineering Section, CWB, at (808) 586-4309.

We strongly recommend that you review all of the Standard Comments on our website: [www.state.hi.us/health/environmental/env-planning/landuse/landuse.html](http://www.state.hi.us/health/environmental/env-planning/landuse/landuse.html). Any comments specifically applicable to this application should be adhered to.

Mr. Yuen  
January 19, 2007  
Page 6

If there are any questions about these comments please contact Jiakai Liu with the Environmental Planning Office at 586-4346.

Sincerely,



KELVIN H. SUNADA, MANAGER  
Environmental Planning Office

c: EPO  
WWB  
SDWB  
CWB  
EH-Hawaii, Larry Shiro



May 31, 2007  
2006.33.1300 / 07P-192

Mr. Kelvin H. Sunada, Manager  
Environmental Planning Office  
Department of Health  
State of Hawaii  
P.O. Box 3378  
Honolulu, HI 96801-3378

Dear Mr. Sunada:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your letter of January 19, 2007 to Mr. Christopher Yuen regarding the above project. Following are our responses to your comments in the order they were presented in your letter.

**Wastewater Branch**

1. The Draft Environmental Impact Statement (EIS) will describe the proposed private wastewater treatment system and related infrastructure improvements. The document will address how the wastewater generated from the project will be collected, treated, and disposed.
2. The Draft EIS will discuss the use of recycled wastewater or other non-potable water for irrigation and use in open space and landscaping areas.
3. The Draft EIS will provide details regarding how wastewater generated from the project is to be collected, treated, and disposed.
4. We acknowledge your office's comment that all wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater System."

**Safe Drinking Water Branch**

5. The Draft Environmental Impact Statement (EIS) will describe the proposed water source, storage, and transmission network for the project's potable water requirements. The developer intends to dedicate the water system to the county.

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

6. We acknowledge your office's comment that all projects that proposed development of new sources of potable water serving or proposed to serve a public water system must comply with the terms of Section 11-20-29 of the Hawaii Administrative Rules, Title 11, Chapter 20, titled Rules Relating to Potable Water Systems. All new public water system sources must be approved by the Director of Health prior to its use. An engineering report which addresses the requirements set forth in Section 11-20-29 will be submitted to the Department of Health at the appropriate time in the development process.
7. We acknowledge your office's comment that all sources of public water systems must undergo a source water assessment which will delineate a source water protection area.
8. A dual water system is not proposed.
9. No injection wells are proposed.

**Clean Water Branch**

10. The proposed project will not result in any discharge into navigable waters.
11. NPDES permits will be obtained from the Hawaii Department of Health for storm water discharges from construction activities. Best management practice plans to control erosion during construction will be a component of the NPDES permits.

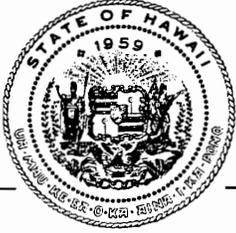
Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.



Lee W. Sichter  
Principal Planner



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BELT COLLINS HAWAII

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

LINDA LINGLE  
GOVERNOR  
THEODORE E. LIU  
DIRECTOR  
MARK K. ANDERSON  
DEPUTY DIRECTOR  
LAURA H. THIELEN  
DIRECTOR  
OFFICE OF PLANNING

**OFFICE OF PLANNING**

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

Telephone: (808) 587-2846  
Fax: (808) 587-2824

Ref. No. P-11627

2006: 1218003

January 23, 2007

Mr. Gene Yong  
Belt Collins Hawaii Ltd.  
2153 N. King Street, Suite 200  
Honolulu, Hawaii 96819

Dear Mr. Yong:

Subject: Environmental Impact Statement Preparation Notice (EISPN)  
Project Name: Kula Nei Project (The Shopoff Group)  
State Land Use Commission Docket No. A06-770  
Location: Ooma, North Kona, Island of Hawaii  
TMK: 7-3-007: 38 & 39  
7-3-007: 007

We have reviewed the EISPN pertaining to a total project area of 150 acres which includes a State Land Use Commission (LUC) Petition Area of 127.94 acres.

The applicant, the Shopoff Group, plans to develop 270 residential units including approximately 220 single-family home sites and approximately 50 affordable multi-family units. Rental units may also be included in the affordable housing proposal.

We have the following comments regarding areas of State concern.

Regional Planning

The County General Plan and Land Use Pattern Allocation Guide (LUPAG) map should be discussed in relation to the compatibility of the proposed project.

Transportation

The Petition Area is adjacent to residential subdivisions which are situated both within the State Agricultural District and Urban District. Primary access to the subject property is proposed via the future Holoholo Street extension to Hina Lani Street through the Kaloko Heights subdivision. Secondary access will be provided through a second access road through the Kaloko Heights subdivision as well as a further extension of Holoholo Street.

Since there are no public roads directly abutting the subject property, we recommend early consultation with the State Department of Transportation (DOT) Highways Division to incorporate the

Mr. Gene Yong  
Page 2  
January 23, 2007

County Action Plan, Keahole to Honaunau Regional Circulation Plan dated August 14, 2006, which is mentioned in the EISPN.

Water Resources

The adequacy of groundwater resources to service the proposed project should be thoroughly discussed based on potable and non-potable (landscape irrigation) requirements.

Archaeological/Cultural Resources

According to the EISPN, nine burials have been located on the subject property. The EISPN also states that a number of lava tube segments were found, especially in the lower portions of the property. We assume that most of the burials were located in the tube segments. Therefore, the location of lava tubes should be clearly delineated and mitigation measures proposed in consultation with the State Historical Preservation Division (SHPD).

Flora/Fauna

The EISPN states that many native plants are present including two plant species with United States Fish and Wildlife Service (USFWS) designations of "species of concern" and "candidate endangered species". The locations of these species should be noted and should be incorporated in the landscape plan if possible.

Cave fauna within the subject property included 29 species of cave arthropods. Although none of the cave invertebrates found are listed as Candidate, Threatened, or Endangered Species by the USFWS, a preservation plan should be prepared if burials or other cultural resources are involved in the caves.

Accessory Areas

"Accessory Areas" are needed for access to the Petition Area and total approximately 11.4 acres. Other "Accessory Areas" also include approximately 10.2 acres on portions of ten parcels and three roads to provide the water system for the Petition Area. All of the "Accessory Areas" should be clearly delineated and the status of each area should be described to meet transportation and water objectives.

Please send us copies of all comment letters. Should you have any questions, please call the Land Use Division at 587-2842.

Sincerely,



Laura H. Thielen  
Director

c: Anthony Ching, LUC  
Genevieve Salmonson, OEQC



May 31, 2007  
2006.33.1300 / 07P-193

Ms. Laura H. Thielen, Director  
Office of Planning  
Department of Business, Economic Development & Tourism  
State of Hawaii  
235 South Beretania Street, 6th Floor  
Honolulu, HI 96813

Dear Ms. Thielen:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

Thank you for meeting with members of our project team on September 14, 2006 and for your January 23, 2007 letter to Mr. Gene Yong regarding the above project. Following are our responses to your comments in the order they were presented in your letter.

**Regional Planning**

1. The Draft Environmental Impact Statement (EIS) will address the County General Plan and Land Use Pattern Allocation Guide map.

**Transportation**

2. The State Department of Transportation and the County Action Plan, Keahole to Honaunau Regional Circulation Plan (August 14, 2006) will be consulted in preparation of the Draft EIS.

**Water Resources**

3. The Draft Environmental Impact Statement (EIS) will address groundwater resources and the proposed potable water source, storage and transmission system.

**Archaeological/Cultural Resources**

4. The locations of all lava tubes are clearly delineated in the archaeological surveys presented in the DEIS. Three of the nine identifies burials associated with lava tubes. The general location of all burials is also presented. Upon approval of the archaeological inventory surveys by the State Historic

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Seattle  
Singapore  
Thailand

Preservation Division, the project archaeologist will prepare preservation plans and burial treatment plans for review and approval by SHPD.

**Flora/Fauna**

5. The location of the identified species of concern and candidate endangered species is disclosed in the botanical inventory survey included in the DEIS, together with recommendations for their treatment. The main lava tube feature onsite is recommended for preservation. Burial treatment plans will be prepared for all burials.

**Accessory Areas**

6. The Draft EIS will address the "Accessory Areas" for the Kula Nei project. Maps and graphics will clearly delineate their location and the status of each area will be described in terms of transportation and water objectives.

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.



Lee W. Sichter  
Principal Planner

MJO:lf

LINDA LINGLE  
GOVERNOR

2007 FEB 1 AM 8 55

PLANNING DEPARTMENT  
COUNTY OF HAWAII



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

BARRY FUKUNAGA  
INTERIM DIRECTOR

Deputy Directors  
FRANCIS PAUL KEENO  
BRENNON T. MORIOKA  
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.2394

January 24, 2007

Mr. Gene Yong  
Belt Collins Hawaii Ltd.  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819

Dear Mr. Yong:

Subject: The Shopoff Group, L.P.  
Kula Nei Project  
Environmental Impact Statement Preparation Notice (EISPN)  
TMK: 7-3-7: 38 & 39 and 7-3-9: 7

We have the following comments in response to your request for our review of the subject residential development project:

1. The project is anticipated to have an impact by contributing its traffic on county roads connecting to our two highways (Queen Kaahumanu and Mamalahoa) that will be used by the Kula Nei Project for its access.
2. A traffic impact analysis report (TIAR) covering the project's impacts and the project's contribution to the cumulative traffic impact should be prepared by the applicant and included in the Draft EIS. The TIAR should also describe the traffic mitigation measures and roadway improvements necessary to address the project and cumulative impacts. We will be particularly interested in the impacts and recommendations at and around our highway intersections.
3. We are an interested party and look forward to receiving at least four (4) copies of the forthcoming Draft EIS. In the Draft EIS, the project should be discussed relative to future development projects and growth in the area.

024661

Mr. Gene Yong  
Page 2  
January 24, 2007

STP 8.2394

We appreciate the opportunity to provide our comments.

Very truly yours,



BARRY FUKUNAGA  
Interim Director of Transportation

c: Genevieve Salmonson, Office of Environmental Quality Control  
Land Use Commission  
Christopher Yuen, Hawaii Planning Department



May 31, 2007  
2006.33.1300 / 07P-179

Mr. Barry Fukunaga, Interim Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, HI 96813-5097

Dear Mr. Fukunaga:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your letter of January 24, 2007 to Mr. Gene Yong regarding the above project. Following are our responses to your comments in the order they were presented in your letter.

1. The traffic impact analysis report (TIAR) for the Kula Nei project will be discussed and included in full in the Draft Environmental Impact Statement (EIS). The TIAR and the Draft EIS will discuss traffic conditions, potential impacts and mitigation measures, including roadway improvements. The TIAR will address traffic on county roads connecting to the two highways—Queen Kaahumanu and Mamalahoa.
2. The Draft EIS will address the Kula Nei project and future development projects and growth in the area.
3. Four copies of the Draft EIS will be sent to your office.

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read 'Lee W. Sichter', written over a horizontal line.

Lee W. Sichter  
Principal Planner

MJO:lf

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BELT COLLINS HAWAII

February 5, 2007

Mr. Gene Young, Project Planner  
Belt Collins Hawaii, Ltd.  
2153 North King Street, Suite 200  
Honolulu, HI 96819-4554

Aloha Mr. Young:

In reference to the copy of the Environmental Impact Statement Preparation Notice (EISPN) for the Kula Nei Project sent for my review, please be informed that due to an erroneous mailing address, I was unable to make your January 22, 2007 review deadline.

I greatly appreciate your consideration in the consultation review process for this and other Environmental Impact Statement and regulatory submissions. Please include us on your mailing list when the draft and final EIS for this and other submissions to the OECQ are made available.

Mahalo piha,

Helen Wong Smith, MLIS, CA  
Librarian, Hawaiian Collection and Mookini Library Archivist

*Edwin H. Mookini Library*

200 W. KAWILI STREET  
HILO, HAWAII 96720-4091  
PHONE: (808) 974-7759  
FAX: (808) 974-7329



May 31, 2007  
2006.33.1300 / 07P-191

Ms. Helen Wong Smith, MLIS, CA  
Librarian, Hawaiian Collection and  
Mookini Library Archivist  
University of Hawaii – Hilo  
200 West Kawili Street  
Hilo, HI 96720-4091

Dear Ms. Smith:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your letter of January 24, 2007 to Mr. Gene Yong regarding the above project. We apologize for the erroneous mailing address for the EISPN. The mailing address has been corrected and you will receive a copy of the Draft Environmental Impact Statement.

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

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PLANNING DEPARTMENT  
COUNTY OF HAWAII

**Hayashi, Norman**  
**From:** Engelhard, Patricia  
**Sent:** Thursday, December 07, 2006 11:23 AM  
**To:** Hayashi, Norman  
**Cc:** Komata, James; Mizuno, Pamela  
**Subject:** Shopoff Group Ag to Urban Request TMK 7-3-7:38 & 39 and 7-3-9:7

Hi Norman,

This regards the Shopoff Group Kula Nei Project application for change of zoning from Ag to Urban, Planning memo dated 12/5/06. Comments due 1/9/07.

One comment I have is that the park is too small at 2.5 acres. If they ever intend for P&R to take it over and maintain it, we need at least 5 usable acres with a little league sized field, fenced, a soccer field, fenced, a pavilion/restroom building, a preferably fenced tot lot, and parking, all of which should be ADA accessible. If they intend to maintain the park themselves into the next millennium, then we won't comment on what they need, unless they ask.

Another comment is that they state that they will contact P&R Maintenance and Recreation at the very least during their EIS Preparation Notice. At the very least, they need to contact P&R Administration, first, before Parks Maint and Recreation.



May 31, 2007  
2006.33.1300 / 07P-182

Mr. Norman Hayashi  
Planning Department  
County of Hawaii  
101 Pauahi Street, Suite 3  
Hilo, HI 96720-3043

Dear Mr. Hayashi:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to an e-mail sent on December 7, 2006 to you from Ms. Patricia Engelhard regarding the above project. Following are our responses to your comments in the order they were presented in your letter.

1. At this time, the applicant does not intend to dedicate to the County the proposed park (presently estimated to be three acres) within the Kula Nei development. The park will be privately maintained by the Kula Nei homeowners' association.
2. The County of Hawaii Parks and Recreation Administration office will be consulted in addition to the Parks and Recreation Maintenance office.

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Seattle  
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Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read 'Lee W. Sichter', written over a horizontal line.

Lee W. Sichter  
Principal Planner

MJO:lf

Harry Kim  
Mayor



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PLANNING DEPARTMENT  
COUNTY OF HAWAII

Lawrence K. Mahuna  
Police Chief

Harry S. Kubojiri  
Deputy Police Chief

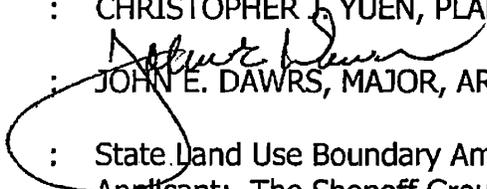
## County of Hawaii

### POLICE DEPARTMENT

349 Kapiolani Street • Hilo, Hawaii 96720-3998  
(808) 935-3311 • Fax (808) 961-2389

December 20, 2006

TO : CHRISTOPHER J. YUEN, PLANNING DIRECTOR

FROM :  JOHN E. DAWRS, MAJOR, AREA II OPERATIONS

SUBJECT : State Land Use Boundary Amendment A06-770 (PD No. 06-006)  
Applicant: The Shopoff Group, L.P.  
Request: Agricultural to Urban  
Tax Map Key: 7-3-7:38 & 39 and 7-3-9:7

Staff has reviewed the above-reference application and submits the following comments.

Staff has serious concerns with the applicant's request for a State Land Use Boundary Amendment from Agricultural to Urban for the proposed development. The applicant has identified its primary access route through the proposed Holoholo Street extension to Hina-Lani Street, through the Kaloko Heights Subdivision, which presently remains non-existent. Staff maintains that until such time that the proposed primary access route is completed, any additional development will cause adverse impact to existing infrastructure. Further, that such adverse effect shall include, but not be limited to, the potential cumulative impact or individual developments, each one of which taken in itself might not have a substantial adverse effect.

Staff believes that proposed access route should first be completed before any development begins, thus preserving the objective of future street extensions. Staff maintains that until such time as adequate roads are built to support the ever-growing population, construction, and additional vehicles on our roadways, additional development must adhere to the County's proposed policy on the principle of concurrency.

Should you have any questions, please contact Captain Paul Kealoha, Commander of the Kona District, at 326-4646, ext. 249.



May 31, 2007  
2006.33.1300 / 07P-178

Mr. John E. Dawrs, Major  
Area II Operations  
Police Department  
County of Hawaii  
349 Kapiolani Street  
Hilo, HI 96720-3998

Dear Major Dawrs:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

I am writing to respond to your memo of December 20, 2006 to Christopher Yuen regarding State Land Use Boundary Amendment A06-770.

Please be assured that the project's proposed Holoholo Street extension is an integral part of the development. It is the applicant's desire to construct the portion connecting the project area to Holoholo Street before any of the proposed homesites are granted a Certificate of Occupancy. This will, however, require approval by the State of Hawai'i as the proposed extension must cross State-owned land. Thus, its timely completion is contingent upon the cooperation of the State. The remainder of the proposed extension must connect to Hina Lani Drive across property proposed for development as the Kaloko Heights Subdivision. The owner of that property, Stanford Carr, has not yet indicated when his project will commence construction. However, we are hopeful that construction of the Hina Lani connection will be completed within the next several years, corresponding to the time required for the Kula Nei project to secure its development permits.

We are unclear about the statement in your letter that "...any additional development will cause adverse impact to existing infrastructure." While we presume that you are referring to traffic-related impacts, we are unable to determine whether you intended the comment to address other types of infrastructure as well (wastewater, water, utilities, etc.). Therefore, our response is limited to traffic-related impacts.

The Draft EIS includes a traffic impact analysis report that concludes that the implementation of several recommended measures, including the installation of a traffic signal at the intersection of Holoholo Street and Kaiminani Drive, will mitigate identified adverse impacts to Level of Service D at all but one intersection in the vicinity of the project. The implementation of these recommended measures must include participation by the applicant as

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Philippines  
Seattle  
Singapore  
Thailand

Mr. John E. Dawrs, Major  
May 31, 2007  
2006.33.1300 / 07P-178  
Page 2

well as other landowners/developers on a fair-share basis. The applicant stands ready to contribute to that effort and believes that improving traffic conditions in the region is a common goal. Please note that the traffic study addresses the effect of the proposed project, as well as the cumulative effect of continuing population growth in the region, in order to determine the best methods for mitigating adverse negative impacts on traffic. We look forward to your comments once you have had an opportunity to review the traffic study.

With regard to the proposed "concurrency" legislation presently being considered by the County Council, we are confident that you recognize that it is not possible for the applicant to commit to complying with a conceptual policy at a time when its final form and content is unknown. While the applicant generally supports the principle, the applicant believes that the success of "concurrency" will require the mutual cooperation of all parties involved and distribution of development costs on a fair-share basis.

Thank you for your participation in the agency and public review process. As the proposed project is in the early stages of planning, we are confident that a continuing dialogue with the Planning Department, the Police Department, other affected agencies, elected and appointed decision-makers, as well as surrounding property owners will result in a development plan for the Kula Nei project that satisfactorily addresses the concerns raised.

Sincerely,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read "Lee W. Sichter", written over a horizontal line.

Lee W. Sichter  
Principal Planner

MJO:lf

Harry Kim 2006 DEC 28 AM 7 47  
Mayor



Barbara Bell  
Director

Nelson Ho  
Deputy Director

PLANNING DEPARTMENT  
COUNTY OF HAWAII

# County of Hawaii

## DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Aupuni Street, Room 210 • Hilo, Hawaii 96720-4252  
(808) 961-8083 • Fax (808) 961-8086

### MEMORANDUM

**Date :** December 21, 2006  
**To :** CHRISTOPHER YUEN, Planning Director  
**From:** BARBARA BELL, Director *BB*  
**Subject:** State Land Use Boundary Amendment A06-770 (PD No. 06-000006)  
Applicant: The Shopoff Group, L.P.  
Request: Agricultural to Urban  
TMK: 7-3-7:38 & 39 and 7-3-9:7

We have reviewed the subject application and offer the following recommendations:

DEPARTMENT COMMENTS: \_\_\_\_\_

#### WASTEWATER COMMENTS:

- No comments
- Require connection of existing and/or proposed structures to the public sewer in accordance with Section 21-5 of the Hawaii County Code.
- Require Council Resolution to approve sewer extension in accordance with Section 21-26.1 of the Hawaii County Code. Complete D.E.M. Sewer Extension Application.
- Require extension of the sewer system to service the proposed subdivision in accordance with Section 23-85 of the Hawaii County Code.
- Other: \_\_\_\_\_

TECHNICAL SERVICES COMMENTS: None

#### SOLID WASTE COMMENTS:

- No comments
- Commercial operations, State and Federal agencies, religious entities and non-profit organizations may not use transfer stations for disposal.
- Aggregates and any other construction/demolition waste should be responsibly reused to its fullest extent.
- Ample and equal room should be provided for rubbish and recycling.
- Greenwaste may be transported to the green waste sites located at the Kailua and Hilo transfer stations, or other suitable diversion programs.
- Construction and demolition waste is prohibited at all County Transfer Stations.
- Submit Solid Waste Management Plan in accordance with attached guidelines.
- Existing Solid Waste Management Plan is to be followed. Provide update to the department on current status.
- Other: \_\_\_\_\_

cc: SWD

**Harry Kim**  
*Mayor*



**Barbara Bell**  
*Director*

**Michael Dworsky P.E.**  
*Solid Waste Division Chief*

**County of Hawai'i**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
25 Aupuni Street, Room 210 • Hilo, Hawai'i 96720-4252  
(808) 961-8083 • Fax (808) 961-8086

June 6, 2006

**SOLID WASTE MANAGEMENT PLAN**  
**Guidelines**

**INTENT AND PURPOSE**

This is to establish guidelines for reviewing solid waste management plans, for which special conditions are placed on developments. The solid waste management plan will be used to: (1) encourage recycling and recycling programs, (2) predict the waste generated by the proposed development to anticipate the loading on County transfer stations, landfills and recycling facilities, and (3) predict the additional traffic being generated because of waste and recycling transfers.

**REPORT**

The consultant's report will contain the following:

1. Description of the project and the potential waste it may be generating: i.e. analysis of anticipated waste volume and composition. This includes waste generated during the construction and operational phases. Greenwastes will be included in this report for both construction grubbing and future operational landscape maintenance.
2. Description and location of the possible sites for waste disposal or recycling. We will not allow the use of the County transfer stations for any commercial development; commercial development as defined under the policies of the Department of Environmental Management, Solid Waste Division.
3. Since the Department of Environmental Management promotes recycling, indicate onsite source separation facilities by waste stream; i.e. source separation bins of glass, metal, plastic, cardboard, aluminum, etc. Provide ample and equal space for rubbish and recycling.
4. Identification of the proposed disposal site and transportation methods for the various components of the waste disposal and recycling system, including the number of truck traffic and the route that truck will be using to transport the waste and recycled materials.

Solid Waste Management Plan Guidelines  
Page 2 of 2

5. The report will include any impacts to County waste and recycling facilities, and the appropriate mitigation measures. All recommendations and mitigation measures will be addressed.
6. Description of the waste reduction component that analyzes techniques to be employed to achieve a reduction goal.
7. Analysis will be based on the highest potential use or zoning of the development.

REQUIREMENTS AND CONDITIONS

1. A solid waste management plan will be done for all commercial developments, as defined under the policies of the Department of Environmental Management, Solid Waste Division.
2. We will require the developer to provide or resolve all recommendations and mitigation measures as outlined in the report; besides any conditions placed on the applicant by the Department of Environmental Management.
3. A licensed environmental or civil engineer will draft and certify the solid waste management plan.

CONCUR:



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Barbara Bell  
DIRECTOR

10/13/03  
Revised 06/06/06

Harry Kim  
Mayor



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Barbara Bell  
Director

2006 DEC 29 AM 11:28 Nelson Ho  
Deputy Director

BELT COLLINS HAWAII  
**County of Hawaii**

**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

25 Aupuni Street, Room 210 • Hilo, Hawai'i 96720-4252  
(808) 961-8083 • Fax (808) 961-8086  
email: [cohdem@co.hawaii.hi.us](mailto:cohdem@co.hawaii.hi.us)

December 27, 2006

Mr. Gene Yong, Project Planner  
Belt Collins Hawai'i Ltd.  
2153 North King St., Suite 200  
Honolulu, HI 96819-4554

RE: EISPN Kula Nei Project, North Kona, Hawai'i

Dear Mr. Yong,

The Solid Waste Division of the County of Hawai'i Department of Environmental Management is in receipt of the copy of the Environmental Impact Statement Preparation Notice (EISPN) for the Kula Nei Project.

Our recommendation is to include in the Draft Environmental Impact Statement (EIS) the items in the attached guidelines for a solid waste management plan into the contents of the Draft EIS. This will save time later in the preparation of a separate Solid Waste Management Plan, and will incorporate many of the same components.

Thank you for providing us the opportunity to comment. For further information, please contact me at (808) 961-8515.

Regards,

A handwritten signature in black ink, appearing to read "Michael Dworsky".

Michael Dworsky, P.E.  
CHIEF, SOLID WASTE DIVISION

Attachment: Solid Waste Management Plan Guidelines

**Harry Kim**  
*Mayor*



**Barbara Bell**  
*Director*

**Michael Dworsky P.E.**  
*Solid Waste Division Chief*

**County of Hawai'i**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
25 Aupuni Street, Room 210 • Hilo, Hawai'i 96720-4252  
(808) 961-8083 • Fax (808) 961-8086

June 6, 2006

**SOLID WASTE MANAGEMENT PLAN**  
**Guidelines**

**INTENT AND PURPOSE**

This is to establish guidelines for reviewing solid waste management plans, for which special conditions are placed on developments. The solid waste management plan will be used to: (1) encourage recycling and recycling programs, (2) predict the waste generated by the proposed development to anticipate the loading on County transfer stations, landfills and recycling facilities, and (3) predict the additional traffic being generated because of waste and recycling transfers.

**REPORT**

The consultant's report will contain the following:

1. Description of the project and the potential waste it may be generating: i.e. analysis of anticipated waste volume and composition. This includes waste generated during the construction and operational phases. Greenwastes will be included in this report for both construction grubbing and future operational landscape maintenance.
2. Description and location of the possible sites for waste disposal or recycling. We will not allow the use of the County transfer stations for any commercial development; commercial development as defined under the policies of the Department of Environmental Management, Solid Waste Division.
3. Since the Department of Environmental Management promotes recycling, indicate onsite source separation facilities by waste stream; i.e. source separation bins of glass, metal, plastic, cardboard, aluminum, etc. Provide ample and equal space for rubbish and recycling.
4. Identification of the proposed disposal site and transportation methods for the various components of the waste disposal and recycling system, including the number of truck traffic and the route that truck will be using to transport the waste and recycled materials.

Solid Waste Management Plan Guidelines  
Page 2 of 2

5. The report will include any impacts to County waste and recycling facilities, and the appropriate mitigation measures. All recommendations and mitigation measures will be addressed.
6. Description of the waste reduction component that analyzes techniques to be employed to achieve a reduction goal.
7. Analysis will be based on the highest potential use or zoning of the development.

REQUIREMENTS AND CONDITIONS

1. A solid waste management plan will be done for all commercial developments, as defined under the policies of the Department of Environmental Management, Solid Waste Division.
2. We will require the developer to provide or resolve all recommendations and mitigation measures as outlined in the report; besides any conditions placed on the applicant by the Department of Environmental Management.
3. A licensed environmental or civil engineer will draft and certify the solid waste management plan.

CONCUR:



---

Barbara Bell  
DIRECTOR

10/13/03  
Revised 06/06/06



May 31, 2007  
2006.33.1300 / 07P-175

Ms. Barbara Bell, Director  
Department of Environmental Management  
County of Hawaii  
25 Aupuni Street, Room 210  
Hilo, HI 96720-4252

Dear Ms. Bell:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your letters of December 21, 2006 to Mr. Christopher Yuen and December 27, 2006 to Mr. Gene Yong regarding the above project. Following are our responses to your comments in the order they were presented in your letter.

1. Regarding wastewater, your office has no comments.
2. Regarding solid waste, a Solid Waste Management Plan will be submitted in accordance with County of Hawaii guidelines that were attached to your letter. The issue of solid waste will be discussed in greater detail in the forthcoming Draft Environmental Impact Statement.

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read 'Lee W. Sichter', written over a horizontal line.

Lee W. Sichter  
Principal Planner

MJO:lf



**DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII**

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720  
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

January 10, 2007

**TO:** Mr. Christopher J. Yuen, Planning Director  
Planning Department

**FROM:** Milton D. Pavao, Manager

**SUBJECT:** STATE LAND USE BOUNDARY AMENDMENT A06-770 (PD NO. 06-000006)  
APPLICANT – THE SHOPOFF GROUP, L.P.  
REQUEST: AGRICULTURAL TO URBAN  
TAX MAP KEY 7-3-007:038 AND 039; 7-3-009:007

We have reviewed the subject application and have the following comments and conditions.

The current water availability conditions in the area, which are subject to change without notice, provide for the same number of water units as the number of lots or dwelling units allowable under the current zoning, not to exceed a maximum of 50 units of water, per existing lot of record. Six (6) additional units of water are available, per existing lot of record, if a change of zone application is approved. For your information, one unit of water is equal to a maximum daily usage of 600 gallons per day, which is suitable for only one single-family dwelling.

Therefore, the Department's existing water system facilities cannot support the proposed approximately 270-unit residential development at this time. Extensive improvements and additions would be required, which may include, but not be limited to, additional source, storage, booster pumps, transmission, and distribution facilities. Currently, funding is not available from the Department for such improvements and no time schedule is set. However, the developer may enter into a Water Agreement with the Department to ensure that the required water system improvements are constructed to support the proposed development.

Should there be any questions, you may contact Mr. Finn McCall of our Water Resources and Planning Branch at 961-8070, extension 255.

Sincerely yours,

Milton D. Pavao, P.E.  
Manager

FM:dfg

copy – The Shopoff Group, L.P.  
Imanaka, Kudo, and Fujimoto, LLC ✓



*... Water brings progress...*



RECEIVED

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII 2:54

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720

TELEPHONE (808) 961-8050 • FAX (808) 961-8657 BELT COLLINS HAWAII

January 29, 2007

Belt Collins Hawaii Ltd.  
ATTENTION: MR. GENE YOUNG  
2153 North King Street, Suite 200  
Honolulu, HI 96819

**ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE**

**PROJECT: KULA NEI**

**APPLICANT – THE SHOPOFF GROUP, L.P.**

**TAX MAP KEY 7-3-007:038 AND 039; 7-3-009:007**

This is in response to your Environmental Impact Statement Preparation Notice dated December 15, 2006.

The current water availability conditions in the area, which are subject to change without notice, provides for the same number of water units as the number of lots or dwelling units allowable under the current zoning, not to exceed a maximum of 50 units of water, per existing lot of record. Six (6) additional units of water are available, per existing lot of record, if a change of zone application is approved. For your information, one unit of water is equal to a maximum daily usage of 600 gallons per day, which is suitable for only one single-family dwelling.

Therefore, the Department's existing water system facilities cannot support the proposed approximately 270-unit residential development at this time. Extensive improvements and additions would be required, which may include, but not be limited to, additional source, storage, booster pumps, transmission, and distribution facilities. Currently, funding is not available from the Department for such improvements and no time schedule is set. However, the developer may enter into a Water Agreement with the Department to ensure that the required water system improvements are constructed to support the proposed development.

Should there be any questions, you may contact Mr. Finn McCall of our Water Resources and Planning Branch at 961-8070, extension 255.

Sincerely yours,

Milton D. Pavao, P.E.  
Manager

FM:dfg

copy – State of Hawai'i, Office of Environmental Quality Control  
State of Hawai'i, Land Use Commission

*... Water brings progress...*



May 31, 2007  
2006.33.1300 / 07P-189

Mr. Milton D. Pavao, P.E., Manager  
Department of Water Supply  
County of Hawaii  
345 Kekuanaoa Street, Suite 20  
Hilo, HI 96720

Dear Mr. Pavao:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

Thank you for meeting with members of our project team on July 27, 2006, October 10, 2006, and January 24, 2007, and for your January 10, 2007 letter to Mr. Christopher Yuen and January 29, 2007 to Belt Collins Hawaii regarding the above project.

The Draft Environmental Impact Statement will discuss the proposed potable water source, storage, and transmission and distribution system to be developed by The Shopoff Group, in coordination with the County of Hawaii's Department of Water Supply.

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read 'Lee W. Sichter'.

Lee W. Sichter  
Principal Planner

MJO:lf

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

2007 JAN 16 PM 3 52  
Mayor

PLANNING DEPARTMENT  
COUNTY OF HAWAII



Darryl J. Oliveira  
Fire Chief

Glen P. I. Honda  
Deputy Fire Chief

## County of Hawai'i

### FIRE DEPARTMENT

25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720

(808) 961-8297 • Fax (808) 961-8296

January 16, 2007

TO : CHRISTOPHER J. YUEN, PLANNING DIRECTOR

FROM : DARRYL OLIVEIRA, FIRE CHIEF

SUBJECT: STATE LAND USE BOUNDARY AMENDMENT A06-770  
(PD. NO. 06-000006)  
APPLICANTS: THE SHOPOFF GROUP, L.P.  
REQUEST: AGRICULTURAL TO URBAN  
TAX MAP KEY: 7-3-7:38 & 39 AND 7-3-9:7

---

We have no comments to offer at this time in reference to the above-mentioned State Land Use Boundary Amendment request.

Handwritten signature of Darryl Oliveira.

DARRYL OLIVEIRA  
Fire Chief

PBW:lpc

024283



**Harry Kim**  
Mayor



RECEIVED

**Darryl J. Oliveira**  
Fire Chief

2007 JAN 23 PM 2: 20

**Glen P. I. Honda**  
Deputy Fire Chief

**County of Hawai'i**

**FIRE DEPARTMENT**

25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720

(808) 961-8297 • Fax (808) 961-8296

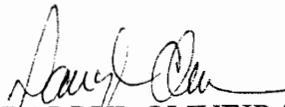
January 17, 2007

Mr. Gene Yong  
Belt Collins Hawaii Ltd.  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE  
KULA NEI PROJECT  
O'OMA, NORTH KONA, ISLAND OF HAWAI'I

---

We have no comments to offer at this time in reference to the above-mentioned Environmental Impact Statement Preparation Notice.

  
**DARRYL OLIVEIRA**  
Fire Chief

PBW:lpc





May 31, 2007  
2006.33.1300 / 07P-188

Mr. Darryl Oliveira, Fire Chief  
Fire Department  
County of Hawaii  
25 Aupuni Street, Suite 103  
Hilo, HI 96720

Dear Chief Oliveira:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your January 16, 2007 letter to Mr. Christopher Yuen and January 17, 2007 to Mr. Gene Yong regarding the above project. We acknowledge that your department has no comment to offer at this time regarding the Kula Nei project.

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read 'Lee W. Sichter', written over a horizontal line.

Lee W. Sichter  
Principal Planner

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

MJO:lf

**Harry Kim**  
Mayor



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**Christopher J. Yuen**  
Director

2007 JAN 18 PM 3:08

**Brad Kurokawa, ASLA**  
LEED® AP  
Deputy Director

**County of Hawaii**  
**PLANNING DEPARTMENT**

101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-3043  
(808) 961-8288 • FAX (808) 961-8742

January 16, 2007

Mr. Gene Yong  
Belt Collins Hawaii Ltd.  
2153 North King Street, Suite 200  
Honolulu, HI 96819-4554

Dear Mr. Yong:

Kula Nei Project  
Environmental Impact Statement Preparation Notice  
Ooma, North Kona, Hawaii  
TMK: 7-3-007: 038 and 039; 7-3-009: 007

Thank you for providing us an opportunity to comment on the Environmental Impact Statement (EIS) Preparation Notice for the proposed Kula Nei Project. Please include or address the following in the draft EIS document:

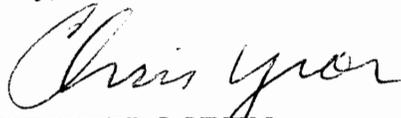
1. Land Use Designation: The project site is situated in the State Land Use Agricultural District, and zoned Agricultural - 5 acres (A-5a) by the County. The General Plan Land Use Pattern Allocation Guide Map (LUPAG) designates the project area as Low Density Urban. The project site is not located in the Special Management Area (SMA).
2. Master plan of the proposed development.
3. Time frame for the development of the project.
4. According to the preparation notice, accesses to the property will be through the adjacent Kaloko Heights development to the south and the State land to the north. Authorization to gain accesses from both landowners should be secured. Alternative accesses should be discussed, if permission is not obtained from both adjacent landowners.

Mr. Gene Yong  
Page 2  
January 16, 2007

5. Discussion on the system for sewage disposal, including the plan to treat certain lots via a private wastewater treatment plant and others via individual wastewater systems (IWS).
6. Detail description and maps that will explain how potable water will be provided to the project.

Thank you for the opportunity to provide preliminary comments on the proposed project. We reserve the right to provide further comments during the DEIS review period. Please forward us a copy of the DEIS upon its availability. If you have any questions, please contact Norman Hayashi of this department at 961-8288, x205.

Sincerely,



CHRISTOPHER J. YUEN  
Planning Director

NH:syw  
p:\wpwin60\ch343\2007\LSshopoffEISPN.doc



May 31, 2007  
2006.33.1300 / 07P-195

Mr. Christopher Yuen, Director  
Planning Department  
County of Hawaii  
101 Pauahi Street, Suite 3  
Hilo, HI 96720-3043

Dear Mr. Yuen:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

Thank you for meeting with members of our project team on May 31, 2006 and for your January 16, 2007 comment letter to Mr. Gene Yong regarding the above project.

The Draft Environmental Impact Statement (EIS) will address the items identified in your letter including, but not limited to:

- The proposed development in relationship to State and County land use designations and the County's General Plan Land Use Pattern Allocation Guide Map.
- A master plan of the proposed development.
- The time frame for the development of the project.
- Access to and through the property, as well as the status of authorization for access from adjacent landowners.
- The proposed wastewater treatment system.
- The proposed potable water source, storage, and transmission and distribution system, including maps and graphics.

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read 'Lee W. Sichter', written over a stylized line graphic.

Lee W. Sichter  
Principal Planner

MJO:lf

Harry Kim  
Mayor



RECEIVED

Jane H. Testa  
Director

707 JAN 25 PM 1:58

Diane L. Ley  
Deputy Director

BELT COLLINS HAWAII

## County of Hawaii

### DEPARTMENT OF RESEARCH AND DEVELOPMENT

25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252  
(808) 961-8366 • Fax (808) 935-1205  
E-mail: chresdev@co.hawaii.hi.us

January 19, 2007

TO: Office of Environmental Quality Control  
235 South Beretania Street, Suite 702  
Honolulu, HI 96813

Land Use Commission  
P. O. Box 2359  
Honolulu, HI 96804-2359

✓ Mr. Gene Yong  
Belt Collins Hawai'i Ltd.  
2153 North King Street, Suite 200  
Honolulu, HI 96819

FR: Diane Ley,   
Deputy Director

RE: Environmental Impact Statement Preparation Notice  
Kula Nei Project  
O'oma, North Kona, Island of Hawai'i

On behalf of the County of Hawai'i's Department of Research and Development, thank you for the opportunity to provide comments regarding the proposed Kula Nei Project.

Over the past year, the Department has been engaged with the Hawai'i County Planning Department in providing the community process piece for the development of the North and South Kona Community Development Plan (CDP). Through this process there has been a wealth of information gathered relative to the community's concerns and desires for the future of the region. It is recommended that the CDP website be visited for information that may be relevant to the planning process for the Kula Nei Project. The website is [www.hawaiiislandplan.com](http://www.hawaiiislandplan.com), or contact the Planning Department for further details.

Additionally, it is recommended that research be conducted to mitigate the demand for electricity and minimize monthly electrical bills for individual residential units and project-wide auxiliary service components. Considerations may include setting minimum standards for energy efficiency with the U.S. Environmental Protection Agency's Energy Star rating program, installation of radiative barriers in roofs and walls, and the installation of net-metered photovoltaic systems.

Finally, it is recommended that landscaping and green space initiatives include the utilization of drought-tolerant plants, mulch and irrigation with discharge from any wastewater treatment facility.

Again, we appreciate this opportunity to share our comments.

CC: Harry Kim, Mayor County of Hawaii



May 31, 2007  
2006.33.1300 / 07P-186

Ms. Diane Ley, Deputy Director  
Department of Research and Development  
County of Hawaii  
25 Aupuni Street, Room 109  
Hilo, HI 96720-4252

Dear Ms. Ley:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your January 19, 2007 letter to Mr. Gene Yong regarding the above project. Following are our responses to your comments in the order they were presented in your letter.

1. We appreciate you bringing to our attention your office's work on the North and South Kona Community Development Plan.
2. The Draft Environmental Impact Statement (EIS) will address potential mitigation measures regarding the demand for electricity associated with the proposed project.
3. The Draft EIS will include discussions of the proposed landscaping plan, the use of drought-tolerant plants, and the proposed irrigation water system.

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read 'Lee W. Sichter', enclosed within a hand-drawn oval.

Lee W. Sichter  
Principal Planner

MJO:lf

**BOB JACOBSON**  
Councilmember

*Chair, Environmental Management Committee*  
*Vice-Chair, Finance Committee*



333 Kilauea Avenue, Second Floor  
Ben Franklin Building, Hilo, Hawai'i 96720

Mailing Address: 25 Aupuni Street, Suite 200  
Phone: (808) 961-8263  
Fax: (808) 961-8912  
E-Mail: jacobs@co.hawaii.hi.us

**HAWAI'I COUNTY COUNCIL**

*County of Hawai'i*

January 19, 2007

Gene Yong, Project Planner  
Belt Collins Hawai'i, Ltd.  
2153 North King Street, Suite 200  
Honolulu, Hawai'i 96819-4554

OFC OF ENVIRONMENTAL  
QUALITY CONTROL

07 JAN 23 PM 12:14

RECEIVED

Re: Comments Relating to the Kula Nei EIS Preparation Notice

Aloha,

I look forward to receiving the Draft Environmental Impact Statement upon its completion. Please consider the following for inclusion in the Draft:

- **A development timetable**  
This may be needed to provide clarity as to the duration with which surrounding area residents will be required to tolerate the inconveniences often associated with construction. A timetable will also provide consumers with a realistic idea of when these residences will be available.
- **Further explanation as to why no mitigating action is planned to best preserve the 'ohe makai and the ko'oko'olau,**  
As both species have United States Fish & Wildlife Service (USFWS) designations and I cannot see how a mitigation plan can be deemed unnecessary.
- **Consultation of affected area residents**  
I am unclear as to why the Kona Hill Estates Community Association is listed as the only Property Owner and Resident to be consulted when their subdivision will not be providing any access to and from the proposed project.

As previously stated I anticipate the arrival of the DEIS; upon review I will be able to provide you with more specific opinions on the project.

Mahalo,

Bob Jacobson, Council Member  
District 6, Hawai'i County Council

BJ/mf

cc: Office of Environmental Quality Control  
Hawai'i State Land Use Commission

*District 6 ~ Upper Puna, Ka'u, and South Kona*  
*Hawai'i County Is An Equal Opportunity Provider And Employer*



May 31, 2007  
2006.33.1300 / 07P-184

Honorable Bob Jacobson  
Chair, Environmental Management Committee  
Vice-Chair, Finance Committee  
District 6, Hawaii County Council  
25 Aupuni Street, Suite 200  
Hilo, HI 96720

Dear Councilmember Jacobson:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your January 19, 2007 letter to Mr. Gene Yong regarding the above project. Following are our responses to your comments in the order they were presented in your letter.

1. A discussion of the proposed development timetable will be included in the Draft Environmental Impact Statement (EIS).
2. A discussion of the results of a botanical survey for the project area will be included in the Draft EIS, including recommendations concerning species of concern.
3. Meetings have been conducted with the following:
  - a. Ruby MacDonald, Office of Hawaiian Affairs
  - b. Barbara Scott, Chair, Kona Traffic Safety Committee
  - c. Rick Vidgen, member, West Hawaii Governor's Advisory Board
  - d. Joel Gimbel, member, Kona Traffic Safety Committee
  - e. Serena Chamberlain, President, Peoples Advocacy for Trails Hawaii
  - f. Mami Herkes, community advocate
  - g. Barbara Kossow, County of Hawaii Deputy Managing Director
  - h. Andy Smith, West Hawaii Governor's Liaison
  - i. Vivian Landrum, Executive Director, Kona-Kohala Chamber of Commerce and Holoholo Street resident
  - j. Mark McGuffie, Executive Director, Hawaii Island Economic Development Board
  - k. Kona Palisades: Richard Schankel, Community Association Manager

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

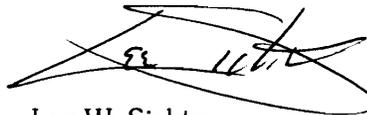
Honorable Bob Jacobson  
May 31, 2007  
2006.33.1300 / 07P-184  
Page 2

- l. Kona Hills Estates: Ben Sosna, Association President, Joan Giles,  
Association Secretary
- m. Stanford Carr Development

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read "Lee W. Sichter", written over a horizontal line.

Lee W. Sichter  
Principal Planner

MJO:lf

✓

Harry Kim  
Mayor

2007 FEB 2 PM 1 35



Troy M. Kindred  
Administrator

PLANNING DEPARTMENT  
COUNTY OF HAWAII

# County of Hawai'i

## CIVIL DEFENSE AGENCY

920 Ululani Street • Hilo, Hawai'i 96720-3958  
(808) 935-0031 • Fax (808) 935-6460

TO: Christopher Yuen, Director, Department of Planning  
Attention: Norman Hayashi

FROM: Troy Kindred, Civil Defense Administrator 

DATE: January 29, 2007

SUBJECT: State Land Use Boundary Amendment A06-770 (PD No. 06-000006))  
Applicant: The Shopoff Group, L.P.  
Request: Agriculture to Urban  
Tax Map Key: 7-3-7:38 & 39 and 7-3-9:7

We have reviewed the above application in regards to hazards and believe the following items are somewhat of a concern and items to be considered.

### ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE

#### Section 5.10. Natural Hazards:

- The proposed project is located in an area that is prone to brushfires.
- The nearest hazard siren is approximately a mile away and would not be audible.

If you have any questions, please call Neil Gyotoku or me at 935-0031.





May 31, 2007  
2006.33.1300 / 07P-185

Mr. Troy Kindred, Administrator  
Civil Defense Agency  
County of Hawaii  
920 Ululani Street  
Hilo, HI 96720-3958

Dear Mr. Kindred:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

This is in response to your January 29, 2007 letter to Mr. Christopher Yuen regarding the above project.

We acknowledge your office's comment that the project area is located in an area that is prone to brushfires and that the nearest hazard siren is approximately one mile away and, in your office's opinion, would not be audible. The applicant recognizes that ongoing residential development properties surrounding the Kula Nei project may result in the addition of a new hazard siren closer to the project. The applicant will participate in a fair-share contribution to the provision of additional siren(s) if they are warranted at the time the project is ready for occupancy.

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read 'Lee W. Sichter'.

Lee W. Sichter  
Principal Planner

MJO:lf

2007 JAN 9 AM 9 48

**Dacayanan, Melissa**

PLANNING DEPARTMENT  
COUNTY OF HAWAII

**From:** ALOHAFIDLR [alohafidlr@aol.com]  
**Sent:** Monday, January 08, 2007 5:49 PM  
**To:** planning@co.hawaii.hi.us; roy\_takemoto@co.hawaii.hi.us  
**Cc:** Hoffmann, Pete; Pilago, K. Angel  
**Subject:** Shopoff Group Application for SLU Boundary Amendment

Dear Mr. Yuen:

Attached please find the Kona Traffic Safety Committee's comments on the subject application. Thank you for the opportunity to comment.

Alaho,

Joel Gimpel  
Chair, Public Affairs

023908

# KONA TRAFFIC SAFETY COMMITTEE

73-4686 Hina Lani Street  
Kailua-Kona, HI 96740

January 9, 2007

Mr. Chris Yuen, Planning Director  
County of Hawaii Planning Department  
101 Pauahi St., Suite 3  
Hilo, HI 96740

Subject: SLU Amendment A06-770 (PD No. 06-000006)  
The Shopoff Group  
TMK: 7-3-3:38 and 7-3-9:7

Dear Mr. Yuen:

The Kona Traffic Safety Community has reviewed the subject application to the State Land Use Committee for a land use boundary amendment from Ag to Urban to permit residential development of more than 220 single-family home sites and additional "affordable" units on 127.94 acres in North Kona. We understand that the northern boundary is adjacent to a vacant, 45-acre state land parcel; the Kona Acres subdivision is north of the state land; the mauka (eastern) boundary abuts Kona Hills Estates; the future Kaloko Heights (Stanford Carr) development abuts the southern boundary; and the makai (western) boundary abuts vacant state land.

We also acknowledge the applicant's recognition that the project will affect traffic in the area, in that traffic generated by the project, which will use Kaiminani Drive and Hina Lani Street (mauka-makai collector roads), Hwys 19 and 190 (north-south regional arterials), and future secondary roads (e.g., Holo Holo Street extension, Kealakehe Pkwy extension, Henry Street extension, etc.). Although the applicant is preparing a TIAR, we estimate, conservatively, that the project will generate at least 1250 vehicle trips each day on roads and at intersections already operating at or near capacity, and believe that access to the collector roads and arterials from the project, via secondary roads, will raise safety concerns.

We're especially concerned regarding the use of Holo Holo through the Kona Acres and Palisades subdivisions to Kaiminani, and other secondary roads through the Kaloko Heights subdivision to Hina Lani. In that regard, we note that the Kaloko Heights developer has requested a variance from several road design standards that will surely affect the proposed loop roadway in that subdivision, which will serve as the primary access road for the subject subdivision.

Furthermore, the traffic generated by the project will greatly affect the intersections of Kaiminani with Holo Holo, Hwys 19 and 190, and Hina Lani with Hwys 19 and 190. The service at the intersections with Hwys 19 and 190 is already at low levels, and the Holo Holo/Kaiminani intersection will probably require a traffic control (4-way stop or signalization) because of the steep grade on Kaiminani at that point..

We also urge you to seek comments from residents of Kona Acres and Palisades given the anticipated volume of traffic on residential streets in those subdivisions.

In conclusion, until our traffic-related concerns are satisfactorily addressed by a TIAR based upon accurate findings, reasonable and appropriate recommendations to mitigate those concerns are implemented, and more is known about the nature of the variances from road design standards sought by Kaloko Heights, we must oppose this application.

Sincerely yours,

Joel Gimpel  
Chair, Public Affairs

Cc: Pete Hoffman  
Angel Pilago



May 31, 2007  
2006.33.1300 / 07P-180

Mr. Joel Gimpel, Chair  
Public Affairs  
Kona Traffic Safety Committee  
73-4686 Hina Lani Street  
Kailua-Kona, HI 96740

Dear Mr. Gimpel:

**Review of EISPN for  
Kula Nei Project, Ooma, North Kona, Island of Hawaii**

Thank you for meeting with a member of our project team on December 4, 2006 and for your January 9, 2007 comment letter to Mr. Christopher Yuen regarding the above project. A member of our project team also met with Barbara Scott of Kona Traffic Safety committee on May 16, 2007 to discuss the Kula Nei project. Following are our responses to your comments in the order they were presented in your letter.

1. The Draft Environmental Impact Statement (EIS) will contain the traffic impact assessment report (TIAR). A discussion of the existing conditions, potential impacts and mitigation measures regarding traffic will be in the Draft EIS.
2. Meetings have been conducted with the following:
  - a. Ruby MacDonald, Office of Hawaiian Affairs
  - b. Barbara Scott, Chair, Kona Traffic Safety Committee
  - c. Rick Vidgen, member, West Hawaii Governor's Advisory Board
  - d. Joel Gimbel, member, Kona Traffic Safety Committee
  - e. Serena Chamberlain, President, Peoples Advocacy for Trails Hawaii
  - f. Marni Herkes, community advocate
  - g. Barbara Kossow, County of Hawaii Deputy Managing Director
  - h. Andy Smith, West Hawaii Governor's Liaison
  - i. Vivian Landrum, Executive Director, Kona-Kohala Chamber of Commerce and Holoholo Street resident
  - j. Mark McGuffie, Executive Director, Hawaii Island Economic Development Board
  - k. Kona Palisades: Richard Schankel, Community Association Manager
  - l. Kona Hills Estates: Ben Sosna, Association President, Joan Giles, Association Secretary

Honolulu  
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Thailand

Mr. Joel Gimpel, Chair  
May 31, 2007  
2006.33.1300 / 07P-180  
Page 2

Thank you for participating in the public and agency review of the above document.

Sincerely,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read "Lee W. Sichter", written over a horizontal line.

Lee W. Sichter  
Principal Planner

MJO:lf

## **Draft EIS LETTERS**



-----Original Message-----

From: Engelhard, Patricia [<mailto:PENGELHARD@co.hawaii.hi.us>]

Sent: Friday, June 22, 2007 5:19 PM

To: Hayashi, Norman; Honolulu Belt Collins

Cc: Komata, James; Mizuno, Pamela

Subject: Kula Nei Project Draft Env. Impact Statement TMK 7-3-7-:038, 39, por 7-3-9:07 and others

Aloha

We are in receipt of the 3 volume DEIS for the subject project.

We would comment that

- \* with 270 units, a 3 acre parcel for a passive park will not adequately serve the active recreational needs of a community this size. Members of the community will, therefore, use other gym and field space in the district. These other facilities are already overburdened with more users than there is space available.
- \* the developer will develop and maintain the park after the housing is built out. Parks and Recreation is amenable to the concept of local maintenance.
- \* the County would not accept any archaeological or lava tube sites for maintenance.
- \* Locating the park next to affordable housing is a good idea.
- \* P & R recommends at least 5 acres of park, at a minimum, with a restroom/pavilion, grassed and fenced baseball (little league size) and soccer fields, a children's playground and parking for at least 25, with 2 disabled spaces. Picnic tables under trees and water fountains would be nice but accessible sidewalks connecting features are a necessity.

Thank you for allowing our input.

Patricia G. Engelhard

Director of Parks and Recreation



September 14, 2007  
2006.33.1300 / 07P-343

Ms. Patricia G. Englehard, Director  
Department of Parks and Recreation  
County of Hawaii  
101 Pauahi Street, Suite 6  
Hilo, HI 96720

Dear Ms. Englehard:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response to the comments you provided on June 25, 2007 via email to Belt Collins for the above document. Our responses are presented in the order of your comments.

1. The applicant will comply with the standards for providing park space as set forth in Sections 8-6 and 8-7 of the Hawaii County Code.
2. We acknowledge your comment that the Department of Parks and Recreation “is amenable to the concept of local maintenance.” However, it is anticipated that while the park will be open to the public, it will not be dedicated to the County. The park will be maintained by a Home Owners’ Association (HOA).
3. We acknowledge your comment that “the County would not accept any archaeological or lava tube sites for maintenance.”
4. We acknowledge your comment that “locating the park next to affordable housing is a good idea.”
5. As stated above, the applicant will comply with the requirements of Sections 8-6 and 8-7 of the Hawaii County Code concerning park dedication. Using the calculation set forth in Section 8-7, we calculate that the total park dedication required is 4.375 acres. Pursuant to Sections 8-8 and 8-10 of the Hawaii County Code, the applicant may contribute a monetary fee in lieu of dedicating land. It is the applicant’s intent to dedicate at least 3 acres for a private park and provide a monetary fee to satisfy the remainder of the requirement if adequate land is not available.

Honolulu  
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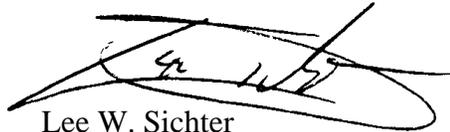
Ms. Patricia G. Englehard  
September 14, 2007  
2006.33.1300 / 07P-343  
Page 2

The applicant will comply with applicable standards set forth in Section 8-10 (Chapter 8 of the Hawaii County Code) for parking, comfort stations and applicable park amenities. The provision of active play fields is not consistent with the applicant's objectives for the proposed park. The applicant is committed to working with the Parks Department to ensure that the applicant's obligations are met.

Again, thank you for your participation in the Chapter 343 comment and review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read "Lee W. Sichter", is written over a horizontal line.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf

LINDA LINGLE  
GOVERNOR

MAJOR GENERAL ROBERT G. F. LEE  
DIRECTOR OF CIVIL DEFENSE

EDWARD T. TEIXEIRA  
VICE DIRECTOR OF CIVIL DEFENSE



PHONE (808) 733-4300  
FAX (808) 733-4287

**STATE OF HAWAII**  
**DEPARTMENT OF DEFENSE**  
**OFFICE OF THE DIRECTOR OF CIVIL DEFENSE**  
3949 DIAMOND HEAD ROAD  
HONOLULU, HAWAII 96816-4495

July 2, 2007

Mr. Lee Sichter, Principal Planner  
Belt Collins Hawaii Ltd.  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819

Dear Mr. Sichter:

Draft Environmental Impact Statement - Kula Nei Project

Thank you for the opportunity to comment on this Draft Environmental Impact Statement (Draft EIS). Having reviewed the Draft EIS, it is requested that the project developer install a solar-powered siren near the northwest corner of the park as described in the Attachment.

It is further recommended that evacuation routes be clearly identified and signage be located at the park site and along the designated route to allow for quick evacuation in the event of any natural or man-made hazards in the area.

If you have any questions, please call Mr. Norman Ogasawara, State Civil Defense Assistant Telecommunications Officer, at (808) 733-4300, ext. 531.

Sincerely,

  
EDWARD T. TEIXEIRA  
Vice Director of Civil Defense

Attch.

c: Anthony Ching, Executive Officer, State Land Use Commission  
Office of Environmental Quality Control  
Troy Kindred, Administrator, County of Hawaii Civil Defense Agency  
State Civil Defense Radio Shop

**STATE CIVIL DEFENSE REVIEW COMMENTS  
FOR  
KULA NEI PROJECT  
DRAFT ENVIRONMENTAL IMPACT STATEMENT  
JUNE 2007**

**1. PURPOSE**

A copy of Volumes 1 through 3 of the Draft Environmental Impact Statement for the **Kula Nei Project** was forwarded by Belt Collins Hawaii Ltd. for review and comment. Our review focused on the planned project development plan as it involved the impact of natural disasters involving evacuation routes, need for emergency sirens, as well as potential for injury and damage from these events when the project is fully built out.

**2. DISCUSSION**

The Kula Nei Project plans 270 single family dwelling units on lot sizes from 7,500 SF to half an acre in the planned 150-acre development. This development adds to the projected growth of Hawaii County of 280 or more residential households annually in the North Kona area, not including off-shore demand. The total demand could reach 400 to 450 units as described in the Draft EIS.

**3. POTENTIAL DISASTER MITIGATION IMPACTS**

The addition of 270 residential units to the North Kona area could have the following impacts on the general population (this is not a complete listing and primarily involves those impacts related to our mission statement):

- A solar powered 119-decibel emergency siren should be installed by the developer near the northeast corner of the park approximately 150 feet from the boundary property line and ten feet from Homestead Road.
- Evacuation routes for Kula Nei will need to be studied and the selected routes posted. As noted in the Draft EIS, these routes may need to use the extended Holoholo Street across State land to the existing Holoholo Street within the Kona Acres subdivision for access to the major highways. This should be further reviewed for alternate solutions that would avoid expected congestion in an emergency evacuation situation. Mitigation measures should be carefully considered in further study.
- The impact of the planned adjacent Kaloko Heights subdivision on local traffic along with that of general area growth anticipated traffic should be considered along with the Kula Nei residential traffic projections in arriving at the most effective traffic congestion mitigation measures.



September 14, 2007  
2006.33.1300 / 07P-344

Mr. Edward T. Teixeira  
Vice Director of Civil Defense  
Department of Defense  
State of Hawaii  
3949 Diamond Head Road  
Honolulu, HI 96816-4495

Dear Mr. Teixeira:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response to the comments you provided on July 2, 2007 for the above document. Our responses are presented in the order of your comments.

1. The developer agrees to install a solar-powered 119-decibel emergency siren. The final location for the emergency siren will take into consideration your recommendations.
2. Once the project's roadway network has been finalized, the developer will identify an appropriate evacuation route and provide the requested signage.

Honolulu  
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Seattle  
Singapore  
Thailand

Again, thank you for your participation in the Chapter 343 comment and review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf

Harry Kim  
Mayor



RECEIVED Bobby Jean Leithead-Todd  
Director

2007 JUL -9 PM 2:39 Nelson Ho  
Deputy Director

BELT COLLINS HAWAII

## County of Hawaii

### DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Aupuni Street, Hilo, Hawaii 96720-4252  
(808) 961-8083 • Fax (808) 961-8086  
email: [cohdem@co.hawaii.hi.us](mailto:cohdem@co.hawaii.hi.us)

July 3, 2007

Mr. Lee Sichter, Principal Planner  
Belt Collins Hawai'i, Ltd.  
2153 North King Street, Suite 200  
Honolulu, HI 96819

Re: Draft Environmental Impact Statement  
Kula Nei Project  
O'oma, North Kona, Island of Hawai'i

Dear Mr. Sichter,

Thank you for allowing us the opportunity to review the subject Draft Environmental Impact Statement. The department's comments are enclosed.

Bobby Jean Leithead-Todd  
DIRECTOR

cc: Mr. Anthony Ching, Executive Officer, State Land Use Commission  
Office of Environmental Quality Control

enclosure

9/6/07



**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
**TECHNICAL SERVICES SECTION**

COUNTY OF HAWAII - 108 RAILROAD AVENUE - HILO, HI 96720-4252  
(808) 961-8028 - FAX (808) 961-8644

**MEMORANDUM**

**DATE:** July 2, 2007

**TO:** Bobby Jean Leithead-Todd, DEM Director

**FROM:** Dora Beck, TSS Chief 

**SUBJECT: Comments on Draft Environmental Impact Statement (EIS)**  
**Kula Nei Project**  
**O'oma, North Kona, Hawai'i**  
**TMK 7-3-007:038 & 039 and 7-3-009:007**

---

Thank you for the opportunity to review the Draft EIS for the proposed Kula Nei Project. TSS offers the following comments regarding the subject document:

1. TSS notes that as per HAR 11-62-31.1, installation of Individual Wastewater Systems (IWS) are allowable under certain conditions, including the total development of an area shall not exceed fifty single family residential lots or fifty dwelling units except for developments consisting of one dwelling unit per acre or greater. Since more than 50 units are proposed for Kula Nei, TSS recommends that wastewater generated from all 270 lots be diverted to the proposed on-site wastewater treatment plant for treatment and disposal.
2. DEM-Technical Services Section (TSS) will be installing sewer infrastructure from Kealakehe Parkway to Hina Lani Street and effluent reuse infrastructure from Kealakehe Parkway to Kohanaiki in conjunction with the State Department of Transportation's (DOT's) Queen Ka'ahumanu Widening Project (Phase II-Kealakehe Parkway to Keahole Airport). Plans for installing additional sewer and reuse infrastructure to service the North Kona Area and upgrades of the Kealakehe Wastewater Treatment Plant (KWWTP) to provide R-1 reuse water are to be performed in additional phases. Additional information regarding this project can be found online at: [http://co.hawaii.hi.us/env\\_mng/kwtp.htm](http://co.hawaii.hi.us/env_mng/kwtp.htm).
3. The County of Hawai'i is also in the process of developing a Community Development Plan (CDP) for Kona and, as part of this process, has conceptual plans which may result in a new decentralized wastewater treatment plant above Queen Ka'ahumanu Highway and makai of the subject properties. Thus, public wastewater treatment facilities to serve the Kaloko area may be available sometime in the future. More information regarding the general location and proposed service area of this decentralized wastewater treatment plant can be found on the previously referenced website.

4. The KWWTP is not currently accepting septage from medium and large private wastewater treatment plants due to the effect of highly concentrated septage loads on the treatment process. DEM has already requested (letter of March 22, 2007) that the Hawaii State Department of Health (DOH) require sludge dewatering facilities at all new medium to large private wastewater treatment plants constructed in the County of Hawai`i.

Should you have any questions regarding our comments, please contact Ms. Dora Beck, P.E., Technical Services Chief at (808) 961-8028 or by email at [dbeck@co.hawaii.hi.us](mailto:dbeck@co.hawaii.hi.us).



September 14, 2007  
2006.33.1300 / 07P-345

Ms. Bobby Jean Leithead-Todd, Director  
Department of Environmental Management  
County of Hawaii  
25 Aupuni Street  
Hilo, HI 96720-4252

Ms. Dora Beck, Chief  
Technical Services Section  
Department of Environmental Management  
County of Hawaii  
108 Railroad Avenue  
Hilo, HI 96720-4252

Dear Mses. Leithead-Todd and Beck:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response to the comments you provided on July 3, 2007 for the above document. Our responses are presented in the order of your comments.

1. We acknowledge your comments regarding the Hawaii Department of Health's limit of 50 residential lots or dwelling units using individual wastewater systems for developments with less than one dwelling unit per acre. The Department of Health has indicated that they will allow the use of on-site individual wastewater systems for this project, provided that the lots are a minimum of 10,000 square feet in size and each subdivision request consists of not more than 50 lots or dwelling units. The project will be built out over a span of several years and we intend to phase the project in subdivisions with 50 units or less.
2. Thank you for the information and website address regarding infrastructure improvements for sewer collection, treatment, and disposal/reuse being undertaken by the County in North Kona. We understand that the County has no firm schedule for installation of the planned improvements and that the subject project is outside of the area to ultimately be served by the Kealakehe Wastewater Treatment Plant.

Honolulu  
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Singapore  
Thailand

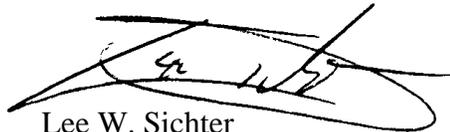
Ms. Bobby Jean Leithead-Todd  
Ms. Dora Beck  
September 14, 2007  
2006.33.1300 / 07P-345  
Page 2

3. Thank you for the information and website address regarding the Kona Community Development Plan and related conceptual plans for a potential new decentralized wastewater treatment plant above Queen Kaahumanu Highway. We understand that the County has no firm schedule for installation of the planned decentralized wastewater treatment plant and the associated sewer collection system that could potentially serve all or part of the subject project.
4. We acknowledge your comments regarding the Kealakehe Wastewater Treatment Plant. The proposed Kula Nei Wastewater Treatment Plant (WWTP) will have a capacity of approximately 30,000 gallons per day, which is below the WWTP capacity of 100,000 gallons per day that the County has established as the upper WWTP size limit for disposal of wastewater sludge at the County plant.

Again, thank you for your participation in the Chapter 343 comment and review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read "Lee W. Sichter", written over a horizontal line.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf

Harry Kim  
Mayor



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2007 JUL 12 PM 2:41

BELT COLLINS HAWAII

Jane H. Testa  
Director

Diane L. Ley  
Deputy Director

## County of Hawaii

### DEPARTMENT OF RESEARCH AND DEVELOPMENT

25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252  
(808) 961-8366 • Fax (808) 935-1205  
E-mail: chresdev@co.hawaii.hi.us

July 6, 2007

TO: Mr. Lee Sichter, Principal Planner  
Belt Collins Hawai'i Ltd.  
2153 North King Street, Suite 2000  
Honolulu, HI 96819

FR: Diane Ley   
Deputy Director

RE: Draft Environmental Impact Statement  
Kula Nei Project  
O'oma, North Kona, Island of Hawai'i

On behalf of the County of Hawai'i's Department of Research and Development, thank you for the opportunity to provide comments on the Draft Environmental Impact Statement for the proposed Kula Nei Project.

We note that the document identifies systems and methods to reduce energy consumption as an "Alternative Analysis" rather than addressing such initiatives as the "Preferred Alternative." Both the State Energy Functional Plan and the County General Plan recommend and support the implementation of energy conservation and efficiency initiatives. Additionally, it is widely held that the implementation of conservation and efficiency initiatives not only mitigate the demand for electricity, but also effectively minimize monthly electrical bills for individual residential units and community held buildings and facilities. Again, our department recommends that strong consideration be given to include the installation of solar water heaters on all residential units, setting minimum standards for energy efficiency with the U.S. Environmental Protection Agency's Energy Star rating program, installation of radiative barriers in roofs and walls, and the installation of net-metered photovoltaic systems.

Again, we appreciate this opportunity to share our comments.

CC: Harry Kim, Mayor County of Hawai'i  
Office of Environmental Quality Control  
Anthony Ching, Executive Officer Land Use Commission



September 14, 2007  
2006.33.1300 / 07P-346

Ms. Diane Ley, Deputy Director  
Department of Research and Development  
County of Hawaii  
25 Aupuni Street, Room 109  
Hilo, HI 96720-4252

Dear Ms. Ley:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response to the comments you provided on July 6, 2007 for the above document. The developer will incorporate energy-saving design into the proposed project to the extent feasible.

Again, thank you for your participation in the Chapter 343 comment and review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read "Lee W. Sichter", written over a horizontal line.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand



ALLAN A. SMITH  
INTERIM CHAIRPERSON  
MEREDITH J. CHING  
JAMES A. FRAZIER  
NEAL S. FUJIWARA  
CHIYOME L. FUKINO, M.D.  
DONNA FAY K. KIYOSAKI  
LAWRENCE H. MIKE, M.D., J.D.  
STEPHANIE A. WHALEN  
KEN C. KAWAHARA, P.E.  
DEPUTY DIRECTOR

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
**COMMISSION ON WATER RESOURCE MANAGEMENT**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

July 2, 2007

RECEIVED  
LAND DIVISION  
2007 JAN -2 P 3:00  
DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

TO: Russell Tsuji, Administrator  
Land Division  
FROM: Ken C. Kawahara, P.E., Deputy Director  
Commission on Water Resource Management  
SUBJECT: Draft EIS for Kula Nei Project  
FILE NO.:

R

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore, all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at <http://www.hawaii.gov/dlnr/cwrm>.

Our comments related to water resources are checked off below.

- 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
- 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- 3. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

Permits required by CWRM: Additional information and forms are available at [www.hawaii.gov/dlnr/cwrm/forms.htm](http://www.hawaii.gov/dlnr/cwrm/forms.htm).

- 4. The proposed water supply source for the project is located in a designated ground-water management area, and a Water Use Permit is required prior to use of ground water.
- 5. A Well Construction Permit(s) is (are) required before the commencement of any well construction work.
- 6. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.

- 7. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 8. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 9. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a stream channel.
- 10. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.
- 11. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 12. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.
- 13. We recommend that the report identify feasible alternative non-potable water resources, including reclaimed wastewater.
- OTHER:

If there are any questions, please contact Ryan Imata at 587-0255.



September 14, 2007  
2006.33.1300 / 07P-347

Mr. Ken C. Kawahara, P.E., Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
P.O. Box 621  
Honolulu, HI 96809

Dear Mr. Kawahara:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response to the comments you provided on July 2, 2007 for the above document. Our responses are presented in the order of your comments.

1. The developer has met with the Hawaii County Department of Water Supply to determine the necessary onsite and offsite water system improvements required for the development. A copy of the Department's August 13, 2007 comment letter on the Draft EIS is enclosed herein for your information.
2. A well construction permit has been submitted and is anticipated to be issued in the near future.
3. A pump installation permit(s) will be applied for prior to the development of the well as a source of water supply.

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

Again, thank you for your participation in the Chapter 343 comment and review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf

Encl: August 13, 2007 letter from Hawaii County Department of Water Supply



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2007 AUG 17 PM 2:20

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720  
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

August 13, 2007

Belt Collins Hawaii Ltd.  
ATTENTION: MR. LEE SICHTER  
2153 North King Street, Suite 200  
Honolulu, HI 96819

**DRAFT ENVIRONMENTAL IMPACT STATEMENT**  
**PROJECT: KULA NEI**  
**APPLICANT – THE SHOPOFF GROUP, L.P.**  
**TAX MAP KEY 7-3-007:038 AND 039; 7-3-009:007**

We have reviewed the subject Draft Environmental Impact Statement (DEIS) and have the following comments.

Please be informed that the Department has met with the developer, The Shopoff Group, L.P., to determine the necessary offsite and onsite water system improvements required for the development. As indicated in the subject DEIS, the necessary offsite improvements will include, but not be limited to, the development of a new well, concrete storage tanks, pressure reducing valve stations, and transmission lines. The necessary onsite water system improvements will include, but not be limited to, distribution facilities and fire hydrants. All elements of the offsite and onsite water system improvements must be designed and constructed in accordance with the Department's Water System Standards, 2002, as amended.

The developer will also be required to enter into an agreement with the Water Board, which describes the necessary offsite water system improvements and the allocation of water commitments from the new well. Further, water service within the proposed development will not be granted until the necessary offsite and onsite water system improvements are completed and accepted by/dedicated to the Water Board.

The Department will also note that it is our understanding that the developer has, or will, purchase the proposed well and reservoir site, located at Tax Map Key 7-3-006:036 (Portion), and 037 (Portion), from a Mr. Ronald Brown with whom the Department had a previous agreement to convey a portion of that property for a well and reservoir site. The Department anticipates that the developer will fulfill Mr. Brown's obligation to convey the aforementioned site as they have, or will, assume ownership of the property.

Should there be any questions, you may contact Mr. Finn McCall of our Water Resources and Planning Branch at 961-8070, extension 255.

Sincerely yours,



Milton D. Pavao, P.E.  
Manager

FM:dfg

copy – State of Hawai'i, Office of Environmental Quality Control  
State of Hawai'i, Land Use Commission

*... Water brings progress...*

**DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION**

**LA/RYT**

**Ref.: DEISKulaNei  
Hawaii.356**

**COMMENTS**

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

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

- ( ) Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
  - ( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
  - ( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
  - ( ) Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.
- ( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.
  - ( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments: \_\_\_\_\_  
\_\_\_\_\_

- (X) **Other: Our comments dated January 9, 2007 to the State Land Use Boundary Amendment A06-770 document, which was responded and attached to the Draft Environmental Impact Statement, still apply.**

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

Signed:   
ERIC T. HIRANO, CHIEF ENGINEER

Date: 2/6/07



September 14, 2007  
2006.33.1300 / 07P-348

Mr. Eric T. Hirano, Chief Engineer  
Engineering Division  
Department of Land and Natural Resources  
State of Hawaii  
P.O. Box 621  
Honolulu, HI 96809

Dear Mr. Hirano:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343 (HRS) public and agency review process. Your July 6, 2007 comment letter states that the comments your office provided on the Environmental Impact Statement Notice of Preparation (EISP) still apply. We acknowledge that your office confirmed in its January 9, 2007 letter on the EISP that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone X. The Flood Insurance Program does not have any regulations for development within Zone X.

Again, thank you for your participation in the Chapter 343 comment and review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read "Lee W. Sichter", written over a horizontal line.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf

Honolulu  
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Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

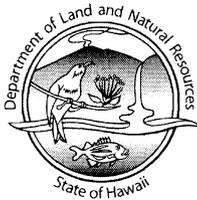
LINDA LINGLE  
GOVERNOR OF HAWAII



ALLAN A. SMITH  
INTERIM CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
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2007 JUL 20 AM 11: 27

BELT COLLINS HAWAII



**STATE OF HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**  
**LAND DIVISION**

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

July 18, 2007

Belt Collins Hawaii Ltd.  
2153 North King Street Suite 200  
Honolulu, Hawaii 96819

Attention: Mr. Lee Sichter

Gentlemen:

Subject: Draft Environmental Impact Statement, Kula Nei Project, North Kona,  
Hawaii

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji  
Administrator

LINDA LINGLE  
GOVERNOR OF HAWAII



ALLAN A. SMITH  
INTERIM CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION**

75 Aupuni Street, Room 204  
Hilo, Hawaii 96720  
PHONE: (808) 974-6203  
FAX: (808) 974-6222

July 12, 2007

TO: Russell T. Tsuji, Land Administrator  
DLNR-Land Division

FROM: Wesley T. Matsunaga, Land Agent  
Hawaii District Land Office

A handwritten signature in black ink, appearing to read "Wesley T. Matsunaga".

SUSPENSE DATE: July 26, 2007

SUBJECT: Request for Comments, Draft Environmental Impact Statement for the Kula Nei Project, Ooma, North Kona, Hawaii, Tax Map Key: 3<sup>rd</sup>/ 7-3-09: portion of 8

Hawaii District Land Office staff has reviewed the above draft environmental impact statement and has no objections to the Shopoff Group's plan to develop the Kula Nei Subdivision or to construct the Holoholo Street Extension.

The Draft EIS identified proposal to construct a Holoholo Street Extension, which will traverse a portion of State-owned lands identified as Tax Map Key: 3<sup>rd</sup>/ 7-3-09: portion of 8, to provide vehicular accesses to its Kula Nei Subdivision. The proposed roadway will be constructed to county dedicable standards and is to be transferred to the County of Hawaii upon completed construction.

Please be informed that although we have no objections to the project, approvals are required from the Board of Land and Natural Resources prior to entry onto the State property, commencement of any work activity to construct the Holoholo Street Extension, and dedication of the subject roadway to the County, as only the Land Board has the authority to grant such actions.



September 14, 2007  
2006.33.1300 / 07P-349

Mr. Russell Y. Tsuji, Administrator  
Land Division  
Department of Land and Natural Resources  
State of Hawaii  
P.O. Box 621  
Honolulu, HI 96809

Mr. Wesley T. Matsunaga, Land Agent  
Hawaii District Land Office  
Land Division  
Department of Land and Natural Resources  
State of Hawaii  
75 Aupuni Street, Room 204  
Hilo, HI 96720

Dear Messrs. Tsuji and Matsunaga:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response to the comments you provided on July 12, 2007 for the above document.

We acknowledge that your office has no objections to the proposed project. We are aware that approvals are required from the Board of Land and Natural Resources prior to entry onto State property, commencement of any work activity to construct the Holoholo Street extension, and dedication of the Holoholo Street extension to the County.

Again, thank you for your participation in the Chapter 343 comment and review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf

Harry Kim  
Mayor



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2007 JUL 23 PM 2:04

Darryl J. Oliveira  
Fire Chief

Glen P.I. Honda  
Deputy Fire Chief

BELT COLLINS HAWAII  
**County of Hawai'i**  
**HAWAII FIRE DEPARTMENT**  
25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720  
(808) 981-8394 • Fax (808) 981-2037

July 19, 2007

Mr. Lee W. Sichter  
Belt Collins Hawaii Ltd.  
2153 North King Street  
Suite 200  
Honolulu, Hawaii 96819

**SUBJECT:** DRAFT ENVIRONMENTAL IMPACT STATEMENT  
KULA NEI PROJECT  
O'OMA, NORTH KONA, ISLAND OF HAWAII

---

In regards to the above-mentioned draft environmental impact statement, the following shall be in accordance:

Fire apparatus access roads shall be in accordance with UFC Section 10.207:

**"Fire Apparatus Access Roads**

**"Sec. 10.207. (a) General.** Fire apparatus access roads shall be provided and maintained in accordance with the provisions of this section.

**"(b) Where Required.** Fire apparatus access roads shall be required for every building hereafter constructed when any portion of an exterior wall of the first story is located more than 150 feet from fire department vehicle access as measured by an unobstructed route around the exterior of the building.

**"EXCEPTIONS:** 1. When buildings are completely protected with an approved automatic fire sprinkler system, the provisions of this section may be modified.

"2. When access roadways cannot be installed due to topography, waterways, nonnegotiable grades or other similar conditions, the chief may require additional fire protection as specified in Section 10.301 (b).



"3. When there are not more than two Group R, Division 3 or Group M Occupancies, the requirements of this section may be modified, provided, in the opinion of the chief, fire-fighting or rescue operations would not be impaired.

"More than one fire apparatus road may be required when it is determined by the chief that access by a single road may be impaired by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

"For high-piled combustible storage, see Section 81.109.

"(c) **Width.** The unobstructed width of a fire apparatus access road shall meet the requirements of the appropriate county jurisdiction.

"(d) **Vertical Clearance.** Fire apparatus access roads shall have an unobstructed vertical clearance of not less than 13 feet 6 inches.

**"EXCEPTION:** Upon approval vertical clearance may be reduced, provided such reduction does not impair access by fire apparatus and approved signs are installed and maintained indicating the established vertical clearance.

"(e) **Permissible Modifications.** Vertical clearances or widths required by this section may be increased when, in the opinion of the chief, vertical clearances or widths are not adequate to provide fire apparatus access.

"(f) **Surface.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities." (20 tons)

"(g) **Turning Radius.** The turning radius of a fire apparatus access road shall be as approved by the chief." (45 feet)

"(h) **Turnarounds.** All dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with approved provisions for the turning around of fire apparatus.

"(i) **Bridges.** When a bridge is required to be used as access under this section, it shall be constructed and maintained in accordance with the applicable sections of the Building Code and using designed live loading sufficient to carry the imposed loads of fire apparatus.

"(j) **Grade.** The gradient for a fire apparatus access road shall not exceed the maximum approved by the chief." (15%)

"(k) **Obstruction.** The required width of any fire apparatus access road shall not be obstructed in any manner, including parking of vehicles. Minimum required widths and clearances established under this section shall be maintained at all times.

"(l) **Signs.** When required by the fire chief, approved signs or other approved notices shall be provided and maintained for fire apparatus access roads to identify such roads and prohibit the obstruction thereof or both."

Water supply shall be in accordance with UFC Section 10.301(c):

"(c) **Water Supply.** An approved water supply capable of supplying required fire flow for fire protection shall be provided to all premises upon which buildings or portions of buildings are hereafter constructed, in accordance with the respective county water requirements. There shall be provided, when required by the chief, on-site fire hydrants and mains capable of supplying the required fire flow.

"Water supply may consist of reservoirs, pressure tanks, elevated tanks, water mains or other fixed systems capable of providing the required fire flow.

"The location, number and type of fire hydrants connected to a water supply capable of delivering the required fire flow shall be protected as set forth by the respective county water requirements. All hydrants shall be accessible to the fire department apparatus by roadways meeting the requirements of Section 10.207.

Buildings under construction, alteration or demolition shall comply with the provisions of UFC Article 87.

  
DARRYL OLIVEIRA  
Fire Chief

PBW:lpc



September 14, 2007  
2006.33.1300 / 07P-350

Mr. Darryl J. Oliveira, Fire Chief  
Hawai'i Fire Department  
County of Hawaii  
25 Aupuni Street, Suite 103  
Hilo, HI 96720

Dear Chief Oliveira:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response to the comments you provided on July 19, 2007 for the above document.

Fire apparatus access roads within the proposed Kula Nei project will be designed and constructed in accordance with the Uniform Fire Code (1988 as amended) Section 10.207.

The water supply system within the proposed Kula Nei project will be designed and constructed in accordance with the Uniform Fire Code (1988 as amended) Section 10.301(c).

Again, thank you for your participation in the Chapter 343 comment and review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

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LWS:MJO:lf

Harry Kim  
Mayor



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Lawrence K. Mahuna  
Police Chief

2007 JUL 27 PM 1:41

Harry S. Kubojiri  
Deputy Police Chief

BELT COLLINS HAWAII

## County of Hawaii

### POLICE DEPARTMENT

349 Kapiolani Street • Hilo, Hawaii 96720-3998  
(808) 935-3311 • Fax (808) 961-2389

July 24, 2007

Mr. Lee Sichter  
Principal Planner  
Belt Collins Hawaii Ltd.  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819

Dear Mr. Sichter:

Our Kona staff has reviewed the Draft Environmental Impact Statement for the Kula Nei Project and submits the following comments:

1. Staff maintains that until such time as adequate roads are built to support the ever-growing population, construction, and additional vehicles on the roadways, additional development must adhere to the County's proposed policy on the principle of concurrency.
2. The proposed primary access route for this development is via Kaiminani Drive and a "yet to be acquired" extension of Holoholo Street. The plan suggests that Holoholo Street might continue south through Kaloko Heights for a possible connection with Hina Lani Street. As of this date, there is no confirmation on the exact ingress/egress for the Kula Nei Project. Staff notes the following known factors:
  - A. Currently, Queen Kaahumanu Highway is at gridlock between downtown Kailua and Keahole Airport for extensive periods of the day.
  - B. There is no definite schedule as to when the widening of Queen Kaahumanu Highway between Kealakehe Parkway and Keahole Airport will be completed.
  - C. The current gridlock situation on Queen Kaahumanu Highway has created problems with police and rescue response.

Mr. Lee Sichter  
Principal Planner  
Belt Collins Hawaii Ltd.  
Page 2

- D. The gridlock on Queen Kaahumanu Highway will play an important factor in any tsunami evacuation.
- E. Any added residential living in this area will add to the gridlock on Queen Kaahumanu Highway and will hamper tsunami evacuations.
- F. If the State grants the access and extension of Holoholo Street and Kaloko Heights has not committed to and constructed a connector road from Holoholo Street to Kaiminani Drive, the developer will have constructed another cul-de-sac subdivision in Kona with only one way in and one way out, which does not allow for emergency ingress/egress should this single access be blocked.
- G. A traffic light at the intersection on Kaiminani Drive and Holoholo Street will do nothing to mitigate the current traffic problem and is more likely to create additional traffic problems.

The following recommendations should help ameliorate the aforementioned problems:

1. That the developer work out a plan with both the State and Kaloko Heights for the extension of Holoholo Street through to Hina Lani Street prior to developing the property.
2. That prior to the sale of any lots or homes in the Kula Nei Project or the Kaloko Heights project, that the connector road be both built and dedicated to the County.
3. That in addition to the connector road, the Holoholo Street intersections at both Kaiminani Drive and Hina Lani Street be improved to include both right and left turning pocket lanes along with acceleration lanes.
4. That no development take place until the gridlock situation on Queen Kaahumanu Highway is resolved.

Thank you for providing us with the opportunity to comment. Should you have any questions, please contact Captain Randy Apele or Major John Dawrs at 326-4646, extension 249 or 299, respectively.

Sincerely,



LAWRENCE K. MAHUNA  
POLICE CHIEF

JED:dmv/jh



September 14, 2007  
2006.33.1300 / 07P-351

Mr. Lawrence K. Mahuna, Police Chief  
Police Department  
County of Hawaii  
349 Kapiolani Street  
Hilo, HI 96720-3998

Dear Chief Mahuna:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343, Hawaii Revised Statutes, as amended, (HRS) public and agency review process. We are writing in response to the comments you provided on July 24, 2007 for the above document. Our responses are presented in the order of your comments.

1. The applicant acknowledges the need to comply with the County's existing policy on concurrency as set forth in Ordinance 07-99. The applicant is aware that Bill 319(2006) is pending before the Planning Commission, but as such, is still subject to revision or amendment prior to final decision-making by the Planning Commission and the County Council. The project is consistent with the intent of Bill 319, and the applicant recognizes the need to mitigate traffic conditions as they relate directly to the proposed project.
- 2A. The applicant concurs.
- 2B. The applicant concurs.
- 2C. While the applicant has no direct knowledge of complications for police and rescue responses resulting from "gridlock" on Queen Ka'ahumanu Highway, the applicant defers to the judgment of the Police Department on this matter.
- 2D. The applicant concurs.
- 2E. Planning for future residential development in the North Kona area requires coordination and cooperation among a host of state and county agencies and landowners. The applicant believes that congestion on Queen Ka'ahumanu can be mitigated through proactive efforts to implement the County Planning

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Department's vision to expand the regional roadway network mauka of the highway, thereby bringing relief to Queen Ka'ahumanu Highway by providing alternate routes. More alternate routes mauka of Queen Ka'ahumanu Highway should not hamper tsunami evacuations, but rather provide more evacuation routes.

- 2F. The applicant is working with the Kaloko Heights developer to coordinate the construction of Holoholo Street through Kaloko Heights to meet the needs of both projects. In addition, the applicant has alternate secondary access for Kula Nei from Kukuna Street.
- 2G. The applicant does not agree with this statement. As evidenced in the Draft EIS, the installation of a traffic light at the intersection of Kaiminani Drive and Holoholo Street will improve traffic movement to Level of Service B.

Recommendation 1: The applicant agrees to the principal of the recommendation, but notes that the County of Hawaii must be included in such planning discussions.

Recommendation 2: The development of the proposed Holoholo Street extension is a dynamic process that requires careful planning and coordination. The applicant has been in regular contact with the developer of Kaloko Heights in order to coordinate the development of Holoholo Street and ensure timely access to Kula Nei. The applicant notes that it would be beneficial to develop the Kula Nei infrastructure and lots concurrently with the construction of the Holoholo Street extension. However, there is existing legal access to the Kula Nei property via TMK 7-3-046: 105, which fronts Kukuna Street. The applicant can make no commitments on behalf of another developer regarding the sale of lots or homes or construction of roadways in Kaloko Heights.

Recommendation 3: As noted in the text of the Draft EIS on page 4-92, signalization of the Holoholo/Kaiminani intersection will mitigate traffic flow through the intersection to Level of Service B. Right- and left-turning pocket lanes along with acceleration lanes are not warranted. The applicant's traffic consultant notes that the acceleration lanes are typically provided in lieu of traffic signals, rather than in addition to them. However, the discussion on page 4-95 indicates that

Mr. Lawrence K. Mahuna  
September 14, 2007  
2006.33.1300 / 07P-351  
Page 3

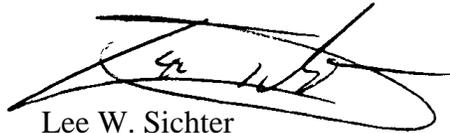
the east and westbound approaches should be constructed with separate left-turn lanes, which would be sufficient to mitigate the identified impacts.

Recommendation 4: The applicant appreciates the concerns of the County of Hawaii Police Department. The applicant has committed to providing its fair share of regional roadway improvements. The applicant understands that the State Department of Transportation is currently undertaking improvements to Queen Kaahumanu Highway.

Again, thank you for your participation in the review and comment process.

Very truly yours,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read "Lee W. Sichter", written over a horizontal line.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf

**UNIVERSITY OF HAWAII AT MANOA**  
**Environmental Center**

August 6, 2007  
RE:0764

Mr. Brian Rupp  
The Shopoff Group  
8951 Research Drive  
Irvine, CA 92618

Dear Mr. Rupp:

Draft Environmental Impact Statement  
Kula Nei Project  
O'oma, North Kona, Hawaii

The Kula Nei Project is a low-density residential subdivision with approximately 270 residential market and affordable housing units. The project will include a neighborhood park, community trails and greenbelts, an internal road network, off-site connecting roads, and infrastructure to support the proposed development, including a wastewater treatment plant, a potable water well, a regional storage reservoir and water transmission lines. The project is located in North Kona, between the existing Kona Acres, Kona Hills Estates and the future Kaloko Heights subdivisions. The project area will be accessible via an extension of Holoholo Street across state land to the existing Holoholo Street in the Kona Acres subdivision, leading to Kaiminani Drive, and to the planned road network within the future Kaloko Heights, leading to Hina Lani Street.

This review was conducted with the assistance of Brian Szuster, UHM Geography; Tom Schroeder, UHM Meteorology; and Peter Mills, UHM Anthropology.

**General Comments**

We can find no major problems with the DEIS for the proposed Kula Nei Project. Although the land is zoned agriculture under the state land use classification, it seems to be of marginal value at best. The proposed use calls for a low-density residential development in an area the county has designated for low density development. We also note that there are several other low-density developments existing and proposed for this area. However, in examining the alternatives, we find the Small-Lot Alternative, described on page 2-34 to be attractive. This alternative would create the maximum number of residences in an area where the demand for workforce housing is high. The unit cost of these houses would be less than those proposed in the preferred alternative while the impacts to the environment are relatively equal.

We also found that the cumulative impact analysis was superficial and fails to give a complete picture of what those impacts may be. As written the section describes the projects as

2500 Dole Street, Krauss Annex 19, Honolulu, Hawaii 96822-2313  
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August 6, 2007  
Page 2 of 6

a net positive impact on population stability with absolutely no attempt to address the project's contribution to negative cumulative change in any other area. We believe that a better effort should have been made to identify negative cumulative effects with means to mitigate where possible. Where it was not possible, we would like to see them listed as irreversible commitment of resources.

### Specific Comments:

#### **Dwelling Units (p. 2-7 – 2-8)**

Why cluster affordable housing units together when it would make more sense to intersperse them throughout the development so that no one is stigmatized by being segregated? Are they located there because that is where the STP will be located?

#### **Wastewater Collection and Treatment (p. 2-19)**

In this section and in several subsequent sections dealing with waste water, the preferred alternative for handling sewage is a dual system, a small scale sewage treatment plant for some of the units and individual wastewater disposal systems for others. Why not construct a sewer system to feed into the STP? This would make more water available for reuse. The preferred alternative may be the least expensive, but it may not be the best for the environment. Recycled water can be used for watering lawns, washing cars, and watering the grass in the community park. This would save on the amount of potable water used. Potable water from underground aquifers is becoming limited in many areas in the state. Reusing water where possible is a way to avoid wasting the potable supply. The time to build a dual water circulation system is before the development is built. Retrofitting a water reuse system after the development is built is expensive.

#### **Solid Waste (p. 2-20)**

It would be helpful to know the capacity of the area landfill.

#### **Landscaping (p. 2-24)**

Common areas should be landscaped using native drought tolerant species.

#### **Alternatives Analysis (p. 2-26 - 2-45)**

In section 2.6.1 (no action alternative), it states that *“while archaeological and cultural resource inventories conducted for the Kula Nei project have contributed to a greater understanding of the extent of these [archaeological and cultural] resources, data recovery and preservation of significant sites would not occur. As described above, uncontrolled*

August 6, 2007

Page 3 of 6

*vegetation growth would eventually lead to the gradual loss of these sites and decreased accessibility (p. 2-29)."* The fact that data recovery would not occur is preferable. Data recovery is a mitigation measure to lessen adverse impacts to significant cultural and archaeological resources when there is no other alternative but to destroy them in order to build needed housing and infrastructure. Passive preservation that would result from a no action alternative would certainly preserve more of the archaeological landscape than proceeding with any of the other alternatives. Thus, the best preservation alternative is the no-action alternative, and this should be stated in the DEIS.

In sections 2.6.2 and 2.6.3, when considering alternative densities of construction based on lot size, the phrase "essentially the same as the Preferred Alternative" occurs in several contexts when discussing potential impacts to archaeological sites and cultural resources. In our opinion, this is clearly not the case. A large number of archaeological sites will be adversely affected with no further planned work despite the fact that they contain information that could be significant in reconstructing traditional Hawaiian agricultural patterns and upland habitation. Although Reichtman Consulting LLC has met the requirements for inventory level surveys of these sites, other studies such as determining variations in soil chemistry in the agricultural lands could yield a great deal more information on ancient agricultural practices. If more of these sites are preserved with lower density alternatives, then the effects are not essentially the same. While the term "data recovery" is used to refer to the mitigation of adverse impacts to cultural resources, it is in no way preferred over preservation in place, and should not be implicitly presented as an equivalent to preservation.

This point is also important to consider when one identifies the large number of sites that would be subject to data recovery in TMK 7-3-009:007 alone (31). The preferred alternative places the affordable housing units in this area, and apparently the greatest degree of land modification in general. I would suggest that the FEIS contain an overlay of the proposed development alternatives with the locations of the significant sites clearly marked. One of the major roles of the DEIS is to allow meaningful consideration of alternatives to the preferred alternative. One such alternative should include project redesign to preserve a greater number of the significant archaeological and cultural sites along with the human burials.

#### **Regional Geology (p. 3-2)**

"Kohaia" might be a misspelling of "Kohala".

#### **Flood Inundation (p. 3-19)**

Flooding can be directed and focused by road systems and may spill beyond the property lines. A dramatic example of "inadvertent" flood routing was the substantial damage to the Hapuna Prince Hotel associated with Tropical Depression Orlene (September 1992). We would like to see a more specific discussion of the effects of road focused spillways in the FEIS.

August 6, 2007  
Page 4 of 6

#### **Lava Flows (p. 3-21)**

We believe you inadvertently flipped the volcano hazard scale. The number 1 should be the highest and the number 9 the lowest.

#### **Potential Impacts and Mitigation (p. 3-22)**

You quote Lockwood and Garcia to the effect that Hualalai eruptions cluster in 500-year patches. You discuss only one eruption 206 years ago. This suggests that there should be a few more. What you don't address is the issue of whether the activity will continue to be concentrated in the Northwest rift of Hualalai. If this be the case then the rather bland concluding sentence is insufficient.

#### **Wind Damage – Existing Conditions (p. 3-26)**

Tropical storm Iwi was not a hurricane when it made land fall in the islands in 1982. Iniki struck in 1992.

#### **Potential Impacts and Mitigation (p. 3-26)**

Hurricane clips are now required under the Big Island's building code.

#### **Avifauna (p. 3-41)**

You should include the scientific name for 'Puco' and 'Io' in order to be consistent.

#### **Regional Networking (p. 4-59)**

In the paragraph that begins with the word "Finally", you mention that traffic volumes will increase at approximately 5% per year. You assume by the year 2020 that traffic will increase 70% or 5% a year for 14 years. This does not take into account the effect of compounding. After 14 years at 5% a year the traffic volume will increase by more than 70%.

#### **Mitigation (p. 4-62 – 4-65)**

We were unable to have a traffic engineer review the DEIS and were not able to analyze the technical information provided in the document. However, we find it hard to believe that the level of service can be improved by the additions of traffic signals to several intersections. Traffic lights may help egress from feeder streets unto arterials, but they often slow down traffic on the arterials. Other methods such as traffic circles and lane widening move traffic along in all directions, but those methods don't seem to be considered.

August 6, 2007  
Page 5 of 6

#### Noise (p. 4-145)

Immediately following the chart, you state that "Except in class A zoning, the maximum permissible noise at night is 10dBA less than during the day. A quick glance at Table 4-24 shows that there is a 10 dBA difference between the daytime and night time allowable noise levels for Class A and Class B but not for class C. There may be an error in either the statement or the table.

#### Wastewater System Design, Potential Impacts and Mitigation (p. 4-184 – 4-193)

Again, we believe the preferred alternative is certainly the cheapest but may not be the best. Having all the houses hooked into an onsite system could make it possible to recycle much of the wastewater for onsite irrigation. This would be an environmental plus since it could save water.

#### Preferred Alternative: IWSs and Private WWTP (p. 193)

There is something wrong with the last sentence in the paragraph.

#### Solid Waste: Potential Impacts Mitigation (p. 4-195)

There should have been a discussion on the capacity of the area's landfill. Even a small amount of solid waste can disproportionately impact a landfill if it is near the end of its useful life. The significance of the amount of solid waste generated by the project at the time of full build out can only be judged if the capacity of the landfill is known.

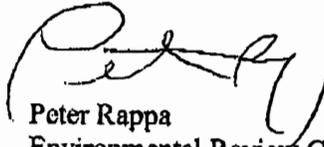
#### Labor Force Impacts (p. 4-215)

This section on the impact of the proposed development on labor force housing states that its impact will be positive. "As such housing increases, fewer workers will face unacceptable housing choices and/or difficult daily commutes." If this statement is accepted then isn't it reasonable to infer that by providing more houses in this development, there can be more benefit to the area's workforce? The small-lot alternative can provide about twice the numbers of housing units the preferred alternative does. If all things are equal, doesn't it make sense to develop more houses with this land?

August 6, 2007  
Page 6 of 6

Thank you for the opportunity to review this DEIS.

Sincerely,



Peter Rappa  
Environmental Review Coordinator

cc: OEQC  
Anthony Ching, State Land Use Commission  
Lee Sichter, Belt Collins Hawaii Ltd  
James Moncur  
Brian Szuster  
Tom Schroeder  
Peter Mills



September 14, 2007  
2006.33.1300 / 07P-352

Mr. Peter Rappa  
Environmental Review Coordinator  
Environmental Center  
University of Hawaii at Manoa  
2500 Dole Street, Krauss Annex 19  
Honolulu, HI 96822

Dear Mr. Rappa:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

We are responding to your August 6, 2007 letter commenting on the above project. We received your letter by fax on August 7. Following are our responses in the order your comments were presented.

***General Comments***

1. We are pleased that you found “no major problems” with the Draft EIS.
2. Thank you for advising us that you found the Small-Lot Alternative attractive. We are surprised, however, by your conclusion that the environmental impacts of the Small-Lot Alternative are relatively equal to the Preferred Alternative. We note that the discussion in Section 2.6.3 of the Draft EIS indicates that the Small-Lot Alternative’s impacts on soils, topography, drainage, water resources, flora, fauna, traffic, infrastructure, views, and population would all be greater than the Preferred Alternative.
3. We believe that the Draft EIS in its entirety presents an exhaustive objective analysis of the project’s primary, secondary and cumulative environmental, socio-economic, and cultural impacts. The fact that we found no negative cumulative impact should not be interpreted as a failure to address the issue or to avoid it. Rather, it is a conclusion based on the sum of our analysis.

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

***Specific Comments***

Dwelling Units: The proposed affordable housing units are clustered together in order to lower construction and maintenance costs, and in so doing, to make them affordable. Locating the affordable units near the wastewater treatment plant that is

specifically intended to serve them is eminently more practical and cost-effective than dispersing them throughout the project area. In addition, you may recall from the text that the affordable units may include multi-family units. Dispersing multi-family units throughout the project is spot-zoning which is generally discouraged. It would also greatly increase common-area maintenance costs which would further limit the developer's ability to offer them as affordable units.

Wastewater Collection and Treatment: We appreciate your suggestion that promoting the reuse of wastewater effluent for lawn watering may be good for the environment. However, the cost of constructing and operating a wastewater treatment plant to serve the entire development has been determined to be cost prohibitive. In addition, a dual water system would have to be constructed throughout the project, one for potable water and one for non-potable effluent to be used mostly for irrigation. The sum effect of reducing the number of marketable lots (to allow for a large wastewater treatment plant), combined with the costs of constructing and operating a private plant, and constructing a dual water system, would likely result in having to increase the density and/or the market pricing of the remaining lots. For these reasons, the centralization of wastewater collection and treatment is not a viable option.

Solid Waste: The information you request was presented in Appendix B, page B5, which states: "According to the 2002 Updated Integrated Solid Waste Management Plan for the County of Hawaii, the Pu'uana'hulu Landfill is estimated to have 12 million cubic yards of air space which is enough to accommodate the waste generated by West Hawaii for approximately the next 40 years."

Landscaping: The text of Section 2.4.10 has been amended to include the following statement: "The use of native drought tolerant plant species in common areas will be encouraged wherever practicable."

Alternative Analysis: We respectfully disagree with your conclusion that the no-action alternative is the best preservation alternative for archaeological sites. Our difference of opinion is essentially philosophical. We believe that the preservation of significant archaeological sites provides long-term cultural and educational value to the community. We believe that preservation should be an active rather than a passive function. Allowing uncontrolled vegetative growth to eventually destroy a significant archaeological site provides no cultural or educational value to the community. The walls lining each side of the Homestead Road provide a good example. Trees with trunks exceeding eight inches in diameter have grown up through portions of the walls, dislodging some of the dry stacked stones, to the point where some areas are not recognizable as a wall. We believe that by incorporating the walls into a pedestrian trail the preservation and restoration of the walls has a long-term benefit to the community. We believe this is preferable to allowing them to disappear forever under a tangle of growth.

Your subsequent comments concerning Sections 2.6.2 and 2.6.3 of the Draft EIS appear to reflect a similar philosophical difference of opinion. Your statements appear to indicate that you disagree with Title 13, Section 13-284-6, Hawaii Administrative Rules, which establish significance criteria for archaeological sites. You suggest that it would be preferable that sites identified for data recovery be preserved in place because "...they contain information that could be significant in reconstructing traditional Hawaiian agricultural patterns and upland habitation." We are unclear how you can arrive at the conclusion and at the same time agree that the inventory level surveys conducted on the property were adequate. The rules concerning significance criteria were formulated to assist landowners in determining the level of treatment needed for archaeological sites. In effect, the rules provide landowners with predictability when it comes to land use. We cannot agree with your suggestion that the project be redesigned "...to preserve a greater number of significant archaeological and cultural sites..." All sites determined to be significant under the above-mentioned criteria have been identified for preservation. We are now awaiting concurrence from the State Historic Preservation Division (SHPD). Once the inventory surveys have been approved, preservation plans will be submitted to the division for approval. It is unnecessary and premature to overlay lotting plans on archaeological maps before completing the approval process with the SHPD. The sites that will ultimately be preserved in accordance with Section 13-284-6 will be done so irrespective of the lotting alternative. This is why the text states that the impacts will essentially be the same.

Regional Geology: We will correct the typographical error that resulted in the misspelling of "Kohala."

Flood Inundation: The more specific discussion you requested concerning the effects of flooding (storm water runoff) can be found in the Draft EIS at Section 4.7.2.2, which discusses the project's proposed drainage system design.

Lava Flows: We have corrected the inadvertent error on page 3-21.

Potential Impacts and Mitigations: The statement concerning the eruptive frequency of Hualalai was based upon a report prepared in February 2004 by Drs. Lockwood and Garcia and included as Appendix D of the Final EIS for the Keahole Generating Station. The report stated on page 3 in its Executive Summary: "Hualalai is a geologically active volcano with clusters of eruptions occurring about every 500 years. Although the probability that Hualalai will erupt somewhere within the next few centuries is high, the odds that such an eruption will threaten the KGS [Keahole Generating Station] are low." We stated, "Thus, the probability is high that Hualalai will erupt somewhere within the next few centuries. However, the odds are low that such an eruption will threaten the subject property." The statement is based upon the conclusion of two highly respected scientists.

Wind Damage – Existing Conditions: We will revise the text on page 3-26 to correct the dates of Hurricanes Iwa and Iniki. The following clarifications are also provided: (1) Iwa was classified as a hurricane by the Central Pacific Hurricane Center as it passed through Hawaiian waters as evidenced in the Central Pacific Hurricane Center’s archives (<http://www.prh.noaa.gov/cphc/summaries/1982.php#Iwa>). (2) Iwa did not technically make landfall as its eye never crossed over land. The hurricane passed east of Kauai, through the Kauai channel as discussed in the Draft EIS.

Potential Impacts and Mitigation: Thank you for advising us that hurricane clips are now required under the Big Island’s building code.

Avifauna: The scientific names for Pueo and Io are presented in Appendix E, page 3.

Regional Networking: The five percent (5%) factor was developed by extrapolating actual growth in the area. It is a simple growth rate. If we had identified the compounded growth rate, it would have been lower but would have still reached the same level of overall growth (i.e., 70% above existing levels).

Mitigation: The traffic study prepared for the Kula Nei project provides an adequate technical assessment of the project’s impacts and provides a detailed description of mitigation measures that is consistent with current engineering practices. As discussed on page 4-64, road widening is considered as a mitigation measure for the intersection of Mamalahoa Highway and Hina Lani Street. Traffic circles were ruled out as a viable alternative due to the relatively steep grades at the intersections of interest as well as the significant land area required for traffic circles.

Noise: We have revised the text on page 4-145 to correct the typographical error.

Wastewater System Design: Please see our comment above under the section “Wastewater Collection and Treatment.”

Preferred Alternative: The last sentence in the paragraph has been revised to add the word “The” to the beginning of the sentence.

Solid Waste: Section 4.7.7.2 references Appendix B as providing a preliminary solid waste management plan. Page B5 of the appendix discusses the capacity of the Pu‘uanahulu landfill.

Labor Force Impacts: Your statement, “If all things are equal, doesn’t it make sense to develop more houses with this land?” implies that all other impacts would be “equal” even if the number of housing units were doubled. We respectfully disagree with that

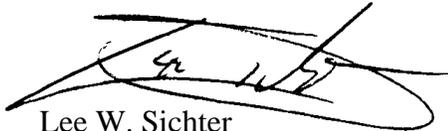
Mr. Peter Rappa  
September 14, 2007  
2006.33.1300 / 07P-352  
Page 5

conclusion. The traffic impact analysis presented in the Draft EIS indicates that the traffic impacts of the Preferred Alternative can be mitigated to acceptable levels and that adequate infrastructure can be developed to support the proposed project. Please refer to our discussion above under General Comments (#2). In addition, please note that the Draft EIS discusses the fact that the subject property is currently designated for Low Density Urban development by the Hawaii County General Plan. Doubling the number of proposed units on the property would be inconsistent with this designation and would likely require an amendment of the General Plan.

Thank you for participating in the Chapter 343 review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read 'Lee W. Sichter', is written over a horizontal line.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf

LINDA LINGLE  
GOVERNOR



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2007 AUG -7 PM 2: 16

RUSS K. SAITO  
COMPTROLLER

BARBARA A. ANNIS  
DEPUTY COMPTROLLER

(P)1186.7

STATE OF HAWAII BELT COLLINS HAWAII  
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES  
P.O. BOX 119, HONOLULU, HAWAII 96810

AUG - 3 2007

Mr. Lee Sichter, Principal Planner  
Belt Collins Hawaii, Ltd.  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819

Dear Mr. Sichter:

Subject: Draft Environmental Impact Statement, Kula Nei Project  
TMK 7-3-007:038, 39 & 7-3-009:007, O'oma, North Kona, Island of Hawaii

The project does not impact any of the Department of Accounting and General Services' projects or existing facilities and 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,

  
ERNEST Y. W. LAU  
Public Works Administrator

DD:vca

c: Mr. Anthony Ching, State Land Use Commission  
Mr. Laurence K. Lau, OEQC  
Mr. Glenn Okada, Hawaii District Office, DAGS



September 14, 2007  
2006.33.1300 / 07P-353

Mr. Ernest Y. W. Lau  
Public Works Administrator  
Department of Accounting and General Services  
State of Hawaii  
P.O. Box 119  
Honolulu, HI 96810

Dear Mr. Lau:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are in receipt of your August 3, 2007 letter and note your comments that this project does not impact any of the Department of Accounting and General Services' project or existing facilities and that you have no comments.

Again, thank you for your participation in the Chapter 343 comment and review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read "Lee W. Sichter", written over a horizontal line.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf

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2007 AUG -7 PM 2: 17

STATE OF HAWAII BELT COLLINS HAWAII  
DEPARTMENT OF EDUCATION  
P.O. BOX 2360  
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

August 3, 2007

Mr. Lee Sichter, Principal Planner  
Belt Collins Hawaii Ltd.  
2153 North King Street, Suite 200  
Honolulu, Hawai'i 96819

Dear Mr. Sichter:

Subject: Draft Environmental Impact Statement for the  
Kula Nei Project, O'oma, North Kona

The Department of Education (DOE) has reviewed the Draft Environmental Impact Statement (DEIS) for the Kula Nei Project (Project) in O'oma, North Kona. The DOE has met with representatives of the Project and we have settled on the contents of an educational contribution agreement that will provide a school fair-share contribution to the DOE. The contribution will be used to offset the school facilities impact of additional public school students residing in the Project. We expect to finalize the agreement in the next few weeks.

The DOE would like to address two misinterpretations of school information which appear in the DEIS and in your letter to me, dated May 31, 2007. First, the DOE's estimated number of students residing in the project (160) was clearly identified as the number of students expected to attend the Kealakehe complex of schools, not the total number of students. You are welcome to calculate your own estimate of the number of public school students who will reside in the project, but should not misrepresent our estimates.

Second, you state that the total student enrollment estimate of the Project is larger than the actual student enrollment impact because many of the future students will already be enrolled in Kealakehe schools before they move into the Project. The DOE's enrollment estimates are based on the number of students we expect to reside in the project. We expect that other new students will be moving into the homes that the Kula Nei residents vacate.

We estimate that there will be approximately 160 additional students in the Kealakehe schools due to the project.

Mr. Lee Sichter  
Page 2  
August 3, 2007

The DOE appreciates this opportunity to provide our comments on the DEIS. If you have any questions, please call Heidi Meeker of the Facilities Development Branch at 733-4862.

Very truly yours,



Patricia Hamamoto  
Superintendent

PH:jmb

c: Randolph Moore, Assistant Superintendent, OBS  
Duane Kashiwai, Public Works Administrator, FDB  
Art Souza, CAS, Honokaa/Kealakehe/Kohala/Konawaena Complex Areas  
Anthony Ching, State Land Use Commission  
Office of Environmental Quality Control



September 14, 2007  
2006.33.1300 / 07P-354

Ms. Patricia Hamamoto, Superintendent  
Department of Education  
State of Hawaii  
P.O. Box 2360  
Honolulu, HI 96804

Dear Ms. Hamamoto:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response to the comments you provided on August 3, 2007 for the above document.

Thank you for your explanation of the basis for the estimated student numbers associated with the project. The Final EIS text will be changed to reflect more appropriately the Department of Education's analysis.

In addition, we acknowledge that an agreement memorializing our understanding with the DOE regarding Kula Nei's contribution is forthcoming.

Again, thank you for your participation in the Chapter 343 comment and review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf

Honolulu  
Guam  
Hong Kong  
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Seattle  
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Thailand

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GOVERNOR OF HAWAII



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LAURENCE CLAIT  
ACTING DIRECTOR

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BELT COLLINS HAWAII

**STATE OF HAWAII  
DEPARTMENT OF HEALTH  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL**

235 SOUTH BERETANIA STREET  
LEIOPAPA A KAMEHAMEHA, SUITE 702  
HONOLULU, HAWAII 96813  
Telephone (808) 586-4185  
Facsimile (808) 586-4186  
Electronic Mail: [OEQC@doh.hawaii.gov](mailto:OEQC@doh.hawaii.gov)

August 7, 2007

Mr. Anthony J. H. Ching, Executive Officer  
State Land Use Commission  
235 South Beretania Street, 4<sup>th</sup> Floor  
Honolulu, Hawaii'i 96813

Dear Mr.Ching:

Subject: Draft Environmental Impact Statement (DEIS) for Kula Nei Project, O'oma, North Kona, Hawaii'i

Our office has reviewed the DEIS for the project noted above. We have the following comments:

Page 1-13, Section 1.13 Secondary and Cumulative Impacts: Please address cumulative impacts to solid waste disposal sites.

Page 1-13, Section 1.14 Proposed Mitigation Measures, paragraph 1, lines 7-10: Please address cumulative potential impacts to the aquifer from non-point sources such as the pesticides, herbicides and fertilizers which will be used at the 270 homes to be generated by this project.

Page 1-13, Section 1.14 Proposed Mitigation Measures, paragraph 2: Please address cumulative traffic impacts to Queen Ka'ahumanu Highway and Mamalahoa Highway due to increased traffic load from the numerous existing and planned residential projects in the vicinity of Kula Nei.

Page 1-14, Section 1.14 Proposed Mitigation Measures, paragraph 1 on page 1-14: Please address potential impacts to other public services such as police, fire and schools.

Page 2-8, Section 2.4.1 Dwelling Units, paragraph 3, lines 1-4: In view of your statement that the homes in the \$560,000 to \$825,000 range will be marketed as primary homes, please address the number of jobs in the Kona area which pay a salary that can support homes in this price range.

Mr. Anthony J. H. Ching, Executive Officer

August 7, 2007

Page 2

Page 2-13, Section 2.4.5 Potable and Non-Potable Water, lines 11-13: Please discuss where solids that will be separated from the effluent will be disposed.

Page 2-19, Section 2.4.6 Wastewater Collection and Treatment, paragraph 1, lines 3-5: Please address any potential odors that may emanate from the privately owned and operated wastewater treatment plant.

Page 2-19, Section 2.4.6 Wastewater Collection and Treatment, paragraph 3, lines 1-3: Please address potential aquifer contamination caused by leaching from the individual wastewater systems.

Page 3-22, Section 3.4.10.2 Potential Impacts and Mitigations, lines 3-6: Please explain the specific reasons that a potential volcanic eruption will not threaten the subject property.

Page 3-29, Section 3.5 Flora, 3.5.1 Existing Conditions, Along Homestead Road: In view of the possibility that this species may be considered protected in the future, please discuss potential measures to preserve the small patch of the *Bidens micrantha* ssp. *ctenopylla* (ko'oko'olau).

Page 3-39, Section 3.5.2 Potential Impacts and Mitigation, paragraph 2, lines 2-5: In view that the *ohe makai* (*Reynoldsia hawaiiensis*) is a "Species of Concern" that may be considered protected in the future, please discuss potential measures to preserve this species within the project area.

Page 3-43, paragraph 1, lines 1-3: Section 3.6 Fauna, 3.6.1.1 Existing Conditions, 3.6.1.1 Avifauna – Native, Migratory, and Introduced Birds, Accessory Areas: Please include a discussion concerning whether the 'Io (Hawaiian Hawk) is known to be extant in the vicinity of the proposed project. It may not have been seen at the precise moments that the field surveys were conducted.

Page 3-44, Section 3.6.1.2 Mammals, Primary Project Area, lines 3-5: Please include additional discussion concerning the possibility that the Hawaiian Hoary Bat, an endangered species, may be extant on the project site.

Page 4-1, Section 4.1 Archaeology and Historic Resources, 4.1.1 Overview of Archaeological Inventory Surveys, paragraph 2, line 2: Please correct the spelling of the word "preservation."

Page 4-2, Section 4.1.2, Summary of Oral-Historical Information, paragraph 1, line 4: Please change "residence" to "residences."

Page 4-17, Section 4.1.4.1, paragraph 1:

lines 1-2: Will the SHPD complete their review of the inventory survey for TMK 7-3-7:039 before the completion of the FEIS?

lines 2-4: Please include correspondence from the SHPD relating to the 2003 recommendation for site 23834 in the appendix of the FEIS.

paragraph 2, line 6: When will the data recovery plan be finalized?

Mr. Anthony J. H. Ching, Executive Officer

August 7, 2007

Page 3

Page 4-20, Section 4.1.4.3 Primary Project Area TMK 7-3-9:007, paragraph 3, lines 5-7: When will the data recovery plan for this TMK and the others TMK's be finalized?

Page 4-22, Section 4.1.4.5, line 1: When is the review by the SHPD anticipated?

Page 4-54, Section 4.2 Cultural Resources, 4.2.3.4 Potential Impacts and Mitigation Measures: Please describe measures, such as fencing and locked gates, to protect artifacts from unauthorized removal from their sites.

Page 4-62, Section 4.3.6 Mitigations: Please address cumulative traffic impacts to the business core of Kailua-Kona from Kula Nei and other new residential projects in North Kona.

Page 4-146, Section 4.4.3 Potential Impacts and Mitigation, paragraph 1, lines 3-4: Please address noise impacts to residences presently along Holoholo Street during the AM and PM peak periods from use by prospective residents of Kula Nei.

Page 4-159, Section 4.6 Visual Resources, 4.6.1 Existing Conditions in the Primary Project Area, paragraph 3: Please provide photos to and from the site from various locations and photo-simulations depicting the views after the Kula Nei project is completed.

Page 4-160, Section 4.6.2 Existing Conditions in the Accessory Areas, paragraph 1 on page 4-160: Please provide photos to and from the site from various locations and photo-simulations depicting the views after the potable water well and storage reservoir are completed.

Page 4-163, Section 4.6.3 Primary Project A: Potential Visual Impacts and Mitigation:

paragraph 1 on page 4-163: Please refer to the comment above for page 4-159, Section 4.6 Visual Resources, 4.6.1 Existing Conditions in the Primary Project Area, paragraph 3.

paragraph 3 on page 4-163: Please refer to the comment above for page 4-159, Section 4.6 Visual Resources, 4.6.1 Existing Conditions in the Primary Project Area, paragraph 3.

Page 4-168, Section 4.7.2.2 Drainage System Design, Potential Impacts and Mitigation, Long Term Impacts: Please refer to the comment above for Page 1-13, Section 1.14 Proposed Mitigation Measures, paragraph 1, lines 7-10.

Page 4-183, Section 4.7.3.2 Water System Design, Potential Impacts and Mitigation, Potential Impacts to Groundwater, paragraph 5 on page 4-183, lines 4-8: Please address impacts to groundwater from the use of fertilizers and pesticides at the private residences in the Kula Nei project.

Page 4-185, Section 4.7.4.2 Wastewater System Design, Potential Impacts and Mitigation, Preferred Alternative: Individual Wastewater Systems (IWSs) and OnSite Wastewater Treatment and Disposal, paragraph 1, line 1: Please address potential impacts to the aquifer from

Mr. Anthony J. H. Ching, Executive Officer

August 7, 2007

Page 4

effluent disposal from individual wastewater systems at residences on lots 10,000 square foot or larger.

Page 4-186, Section 4.7.4.2 Wastewater System Design , Potential Impacts and Mitigation, Preferred Alternative: Individual Wastewater Systems (IWSs) and OnSite Wastewater Treatment and Disposal, paragraph 2 on page 4-186: Please address cumulative impacts to solid waste capacity from weekly sludge disposal at the County WWTP.

Page 4-193, Potential Short-Term Impacts, Preferred Alternative: IWSs and a Private WWTP, paragraph 1, lines 3-5: Please refer to comment above for Page 4-185, Section 4.7.4.2 Wastewater System Design , Potential Impacts and Mitigation, Preferred Alternative: Individual Wastewater Systems (IWSs) and OnSite Wastewater Treatment and Disposal, paragraph 1, line 1.

Page 4-198, Section 4.8.1 Existing Conditions, North Kona, Economy, paragraph 1, lines 1-2: Please include a discussion in the FEIS regarding the minimum household income required to purchase both market-priced residences and “affordable housing” at Kula Nei.

Page 4-212, Section 4.8.3 Community Issues and Concerns, Project Specific Concerns, paragraph 2, lines 2-4: Please refer to the comment above for page 4-146, Section 4.4.3 Potential Impacts and Mitigation, paragraph 1, lines 3-4.

Page 4-215, Section 4.8.4 Socio-Economic Impacts, Economic Impacts, Labor Force Impacts, lines 1-2: Please refer to the comment above for page 4-198, Section 4.8.1 Existing Conditions, North Kona, Economy, paragraph 1, lines 1-2.

Page 4-220 Section 4.9 Public Services, 4.9.1 Police, Impacts: Please address cumulative impacts to police services from Kula Nei and the surrounding current and planned subdivisions. Please discuss the possibility that fair-share funds from the developers of Kula Nei and adjoining subdivisions could be used for increased police services.

Page 4-223 Section 4.9.3 Education, Impacts, first bullet on page 4-223: The Kula Nei project will create a need for more educational capacity at the elementary school level in the Kealakehe catchment area. Please address this issue in the FEIS.

Page 4-224, Section 4.9.4 Recreation, Impacts, paragraph 2: The increase of residents in North Kona from Kula Nei and the surrounding subdivisions will require the development of additional recreational facilities. The lack of availability of recreational facilities in other areas of West Hawaii is not pertinent to the increased need for such facilities in North Kona.

Page 4-225, Section 4.9.5 Health Care, Impacts, paragraph 1: Please address the cumulative impacts to health care facilities from the development of Kula Nei and adjacent subdivisions.

Mr. Anthony J. H. Ching, Executive Officer

August 7, 2007

Page 5

Page 5-8, Table 5-1 Hawai'i State Planning Act, Part 1: Please display the legend for the table (e.g. A, C, I, NA) more prominently.

Page 5-10, Section 226-6, Item #a17: Please explain the meaning of the rating term "NC."

Page 5-10, Section 226-7, Item #a2: Please explain how the project is applicable to the goal of diversified agriculture.

Page 5-10, Section 226-7, Item #b2: Please explain how this project is applicable to encouraging agriculture.

Page 5-11, Section 226-8, Item #b3: Please explain how the Kula Nei project is applicable to the goal of improving the quality of existing visitor destination areas.

Page 5-11, Section 226-8, Commentary: Please address whether visitor industry workers in the greater Kailua-Kona are able to afford the purchase of either the market range residences or the "affordable" residences at Kula Nei.

Page 5-13, Section 226-10, Commentary, paragraph 3: Please discuss the timing for the completion of the development of the Palamanui/University of Hawai'i Center as it relates to the completion of Kula Nei that is scheduled for 2017. This campus should generate a large number of higher-paying jobs. Please discuss how those who hold these jobs could provide a fertile market for Kula Nei.

Page 5-17, Section 226-17, Commentary: Please refer to the comments above for page 1-13, Section 1.14 Proposed Mitigation Measures, paragraph 2.

Page 5-19, Section 226-19, Commentary: Please refer to the comments above for page 5-11, Section 226-8, Commentary.

Page 5-20, Section 226-20, Commentary: Please refer to the comment above for page 4-185, Section 4.7.4.2 Wastewater System Design, Potential Impacts and Mitigation, Preferred Alternative: Individual Wastewater Systems (IWSs) and OnSite Wastewater Treatment and Disposal, paragraph 1, line 1.

Page 5-22, Section 226-25, Commentary: Please describe what steps will be taken to protect the archaeological resources that will be preserved in place (e.g. lava tube resources).

Page 5-35, Section 5.4.4 State Higher Education Functional Plan (1984), 5.4.4.3 Conformance with the Goals of the Plan, lines 3-6: Please refer to the comment above for page 5-13, Section 226-10, Commentary, paragraph 3.

Page 5-38, Section 5.4.6 State Energy Functional Plan (1991), 5.4.6.2 Conformance with Goals of the Plan: Please refer to the comments above for Page 1-13, Section 1.14 Proposed Mitigation Measures, paragraph 2.

Mr. Anthony J. H. Ching, Executive Officer

August 7, 2007

Page 6

Page 5-41, Section 5.4.8 State Historic Preservation Functional Plan (1991) 5.4.8.3 Conformance and Goals of the Plan: Please refer to the comment above for Page 5-22, Section 226-25, Commentary.

Page 7-1, Section 7.1 Consulted Parties, EISPN Comments and Resources, paragraph 2, line 2: Please correct the spelling of the word "receiving."

Page 7-2, Section 7.1 Consulted Parties, EISPN Comments and Resources, D. Elected Officials: Please add US Representative Mazie Hirono to the list of officials to receive a copy of the DEIS.

Should you have any questions, please call Leslie Segundo at 586-4185.

Sincerely,



George Casen

Planner

c: Mr. Lee Sichter, Principal Planner Belt Collins Hawaii, Ltd.

Mr. Brian Rupp, The Shopoff Group, LP

Mr. Benjamin A. Kudo, Esq. Imanaka Kudo & Fujimoto



September 14, 2007  
2006.33.1300 / 07P-355

Mr. George Casen, Planner  
Office of Environmental Quality Control  
Department of Health  
State of Hawaii  
235 So. Beretania Street, Suite 702  
Honolulu, HI 96813

Dear Mr. Casen:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Thank you for your letter of August 7, 2007, commenting on the above document. The following responses are presented in the order your comments were presented in your letter.

1. Chapter One is an introduction and summary. A discussion of the project's cumulative impacts to solid waste disposal sites can be found in Appendix B on page B-5 (second paragraph) and in Table B-10.
2. Chapter One is an introduction and summary. An expanded discussion of the project's cumulative impacts to the aquifer from non-point sources will be provided in Section 4.7.2.2 under Long Term Impacts as follows: "After development, vegetated surfaces and underlying soils would help to remove contaminants and purify runoff that percolates to the ground water. Landscape management practices will be applied in public areas to minimize the use of fertilizers and pesticides that could potentially enter the ground water. Products sold for domestic application to yards and gardens are biodegradable and would not be expected to affect the groundwater quality. Individual lot-owners will be provided informational materials by the Home Owners' Association to help educate them about the prudent use of pesticides and fertilizers on their property and to encourage Integrated Pest Management strategies to help ensure that no significant adverse impacts upon ground water result from their individual and collective actions. The project site is hydraulically below the existing potable water wells in the area, so water quality at such wells would not be subject to any potential effects from the project."

Honolulu  
Guam  
Hong Kong  
Philippines  
Seattle  
Singapore  
Thailand

3. Chapter One is an introduction and summary. A discussion of the project's cumulative impacts on Queen Ka'ahumanu Highway and Mamalahoa Highway is presented in Section 4.3.2 on page 4-56, Section 4.3.5 on page 4-59, Section 4.3.7 beginning on page 4-65 and in Appendix M, Section IV, beginning on page 24.
4. Chapter One is an introduction and summary. A discussion of the project's impacts on public services including police, fire, and schools is presented in Section 4.9 beginning on page 4-219.
5. We are unable to answer your question. The information you request concerning the number of jobs in the Kona area which pay a salary to support homes in the Kula Nei price range is not available. Published wage related data is based on US Census data but is not broken down below the county level.
6. As discussed in the last paragraph on page 2-20 and in the third paragraph on page 4-186, wastewater solids from the WWTP will be transported to the County's Kealakehe WWTP for further processing prior to final disposal by the County. The County currently disposes of wastewater solids at the West Hawai'i Landfill.
7. Odor control is regulated by the State Department of Health, and as discussed on page 5-15, the wastewater treatment plan will be designed to minimize impacts to the environment. There are several considerations that are relevant to the potential for odor at the proposed WWTP. 1) The collection system will be small and will be entirely gravity flow, minimizing the potential for anaerobic conditions to develop in the sewage. Anaerobic conditions that typically develop in sewer force mains are a major source of foul odors from wastewater collection and treatment systems. 2) The onsite WWTP will use aerobic biologic processes to treat the wastewater. Aerobic processes typically do not generate objectionable odors. 3) The on-site WWTP will be designed to minimize the release of foul odors, due to its proximity to residential development within Kula Nei as well as surrounding properties. One of the primary components of odorous emissions from wastewater treatment plants is hydrogen sulfide gas. Hawaii ambient air quality standards limit the concentration of hydrogen sulfide to 35 micrograms per cubic meter (23 parts per billion) for a one-hour averaging time. Thus, hydrogen sulfide emissions at locations beyond the plant boundary cannot legally exceed this concentration. Hydrogen sulfide is generally detectable at concentrations of about 5 ppb, but sensitive individuals may detect the presence of hydrogen sulfide at lower values. Any hydrogen sulfide emitted by the wastewater

treatment plant will disperse with distance from the plant. Even during adverse dispersion conditions, the concentration can be expected to decrease by a factor of at least ten within a distance of about 300 ft. Thus, if the Hawaii ambient air quality standard for hydrogen sulfide is maintained at the plant boundary, any odorous emissions from the plant should not be detectable at distances beyond about 300 ft even by individuals that are very sensitive to hydrogen sulfide.

8. The impacts of the proposed IWS on the aquifer are discussed in Section 4.7.4.2 at page 4-193 (paragraphs 2 and 3).
9. Section 3.4.10.2 discusses the potential impacts of volcanic eruptions on the property. It states that the odds are low that an eruption will threaten the property. The statement is based upon an analysis conducted by Drs. Lockwood and Garcia for the Keahole Generating Station which is less than two miles down slope from the subject property. Lockwood and Garcia evaluated the statistical likelihood of a lava flow entering a 25 square mile area around the generating station using a Poisson probability model. They observed that six lava flows have entered the 25 square mile area in the past 4,700 years. The flows were randomly distributed in time, showed no periodicity or other time-dependent trends, and by various statistical tests could be shown to follow a Poisson (random) time distribution.
10. We are unable to determine the possibility that *Bidens macrantha ssp. ctenopylla* may at some point in the future become a protected species. For that reason, the landowner does not intend to preserve the small patch that was identified. However, the applicant will recommend to future lot owners that the plant species be considered for incorporation into landscaping. Also, the applicant will consider incorporating this species into landscaping for comment open space areas.
11. The applicant has no plans to preserve the 'ohe makai within the project area. However, the applicant will recommend to future lot owners that the plant species be considered for incorporation into landscaping. Also, the applicant will consider incorporating this species into landscaping for comment open space areas.
12. The paragraph beginning at the bottom of page 3-42 states: "Based on the elevation and habit of the Hawaiian or Short-eared Owl (*Pueo*) and the 'Io or Hawaiian Hawk, these birds could potentially forage or rest on any of the Accessory Area lots." We believe this statement is adequate as to the hawk's possible existence in the vicinity of the proposed project.

13. Very little is known about the Hawaiian Hoary Bat. As it was not observed on the property at the time the survey was conducted and it is not practical to maintain a biologist on the property on a continuous basis, it is not possible to provide a discussion about the possibility that the animal may exist on Primary Project Area. The best that the consulting biologist can offer is the statement at the end of Section 3.6.1.2: "It may be possible that it [the Hawaiian Hoary Bat] may occasionally forage or roost on or around this site."
14. The spelling of "perservation" has been corrected to read "preservation."
15. The word "residence" in line 4 of the first paragraph has been corrected to read "residences."
16. We are not able to determine how long the SHPD will take to complete the review of the inventory survey for parcel 39. A copy of the SHPD approval letter for the Haun and Henry 2003 report is in Appendix G. The State Historic Preservation Office was contacted and a copy requested. The data recovery plan cannot be prepared until the inventory survey has been approved by SHPD. As we are unable to determine how long it will take SHPD to approve the inventory plan, we do not know when the data recovery plan will be finalized.
17. As we are unable to determine how long it will take SHPD to approve the revised inventory plan, we do not know when the data recovery plan will be finalized.
18. As the SHPD staff person covering Maui and the Big Island recently resigned her post, we are unable to determine when the review will begin or end.
19. As stated on page 4-54, a preservation plan will be prepared in consultation with descendants of the area. As that consultation has not yet taken place, it would be both premature and inappropriate to discuss the methods that might be utilized to protect artifacts contained within the lava tube.
20. The traffic study was prepared in accordance with industry standards. It is not feasible to assess the cumulative traffic impacts of residential developments in North Kona on the "business core of Kailua-Kona." As discussed on page 20 of the Traffic Impact Analysis Report, which is presented as Appendix M, factors considered in determining the project's trip distribution included a review of historic traffic volume data, observations of existing traffic patterns, discussions with residents, the distribution of employment and

commercial activity in the region, and the County's proposed street extension program. The resulting trip generation pattern for the project assumes that 60 percent of the traffic will travel north towards South Kohala and 40 percent will travel south towards Kailua-Kona. However, it is not feasible to estimate the ultimate destination of those trips. Thus, while 40 percent of the trips are assumed to be traveling south from the project area, it is impossible to determine how many are destined for the core of Kailua-Kona at any given point in time. Because of this uncertainty, traffic impact analysis focuses upon the impacts of traffic upon the key intersections surrounding a project area, rather than the ultimate destination of the traffic.

21. As discussed on page 4-145, maximum permissible sound levels are established to protect, control and abate noise pollution from stationary sources and from construction, industrial and agricultural equipment. Traffic noise is not a stationary source, therefore, it is not regulated by the State Department of Health. While increased traffic leads to increased traffic noise on roadways, it is the County's policy to improve the regional roadway network in North Kona as a means of reducing traffic congestion on the principal arterial roadways (Queen Ka'ahumanu Highway and Mamalahoa Highway). The Kula Nei project helps to implement the County's policy by providing new roadways to improve the regional roadway network. Population growth in North Kona consistent with State and County plans will lead to increased traffic on the roads and an increase in associated traffic noise.
22. It is not feasible to provide photos to and from the project site because the proposed roadways do not yet exist. Photo views of the project area are shown in Figure 4-22, 4-23 and 4-24. Please also refer to photos of the project area in some consultant reports in the appendices. As stated in Section 4.6.1, "Views of the project area from neighboring properties are obscured by existing vegetation. It is generally not possible to see beyond the perimeter of the property to the interior." For these same reasons, photo simulations are not possible.
23. The proposed well and reservoir site will be located on the far side of the house, beyond the tree line in the photo below. The proposed location of the well and reservoir site is presented in Figure 2-1 in the EIS. The photo below was taken from the only roadway serving the area. The applicant does not believe that the well and the reservoir will be visible from the roadway.



24. It is not feasible to provide photos and photo-simulations of the subject property from various points along the shoreline. The view to the shoreline in Figure 4-23 was presented to demonstrate the visual distance between the project area and the shoreline area. Due to the slope of the land and the character of the surrounding properties, it is very difficult to distinguish the property from the surrounding area. It is very difficult to get a clear shot of the project area. In the morning, the camera would be shooting into the morning sun and later in the day clouds have already built up around Hualalai, leaving the entire leeward slope of the mountains in shadows. This is why no photo of the project area as viewed from the Queen Ka'ahumanu Highway or the coastal area was included in the EIS. But, due to the fact that the proposed project will be located in an area designated by both the State and County for low to moderate density residential use, and the proposed development is consistent with that use, as discussed in paragraph 3 on page 4-163, no significant adverse visual impacts are anticipated. Therefore, extensive photographic analysis is not warranted.
25. Please see our response under #2 above.

26. Please see our response under #2 above.
27. The discussion of impacts on the aquifer from individual wastewater systems is presented on page 4-193 under the topic headings “Potential Short Term Impacts” and “Potential Long Term Impacts.”
28. The County’s Department of Environmental Management (DEM) included in its July 2, 2007 comment letter on the DEIS, the following comment: “The KWWTP [Kealakehe Wastewater Treatment Plant] is not currently accepting septage from medium and large private wastewater treatment plants due to the effect of highly concentrated septage on the treatment process[.]” The County defines a medium sized plant as having a capacity in excess of 100,000 gallons. The facility proposed at Kula Nei will have a capacity of about 30,000 gallons, or approximately one quarter of the size of a medium sized plant. Therefore, no significant adverse cumulative impacts upon the KWWTP are anticipated to result from the Kula Nei project.
29. Please see discussion under item #27 above.
30. It is not feasible to identify “the minimum household income required to purchase both market-priced residences and ‘affordable housing’ at Kula Nei.” The ability of a household to purchase a new home depends mostly upon the extent of their available assets. Income may be one of those assets, but it is often not the only available asset. The discussion beginning on page 4-207 of the DEIS addresses housing costs in the Kona area. A discussion of the affordability of housing is presented in Section 3.5 of the Market Assessment prepared for the project, and presented as Appendix A in the EIS.
31. See discussion under item #21 above.
32. Please see discussion under item #30 above.
33. There is no provision under current State or County law that requires developers to provide fair-share funds increased police services. The provision of County services related to public safety (police, fire and emergency services) is funded by monies from the County General fund. Real property taxes are the principal source of revenue in the General Fund. As discussed on page 4-217 of the DEIS, increased real property taxes associated with the development of Kula Nei are estimated to exceed \$1 million (2006 dollars) annually by 2011, and to reach a cumulative total of \$10.1 million through 2020.

34. As discussed on page 4-223 of the DEIS, the Kula Nei project is committed to complying with the DOE's request for a fair-share contribution to cover its share of the project's impact upon the need for new school facilities. The DOE estimates that Kula Nei's impact upon the Kealakehe complex will be a total of 160 students.
35. The discussion on page 4-224 of the DEIS is a disclosure of anticipated primary, secondary and cumulative impacts. The effect of people moving to Kula Nei from elsewhere on the island is a secondary impact and the EIS is obligated to disclose it. The applicant will comply with applicable standards set forth in Section 8-10 (Chapter 8 of the Hawaii County Code) for parking, comfort stations and applicable park amenities. The applicant is committed to working with the Parks Department to ensure that the applicant's obligations are met.
36. The discussion of impacts on health care on page 4-225 of the DEIS discloses the cumulative impacts of development in North Kona on the region's health care facilities by noting that Kula Nei's anticipated population will constitute only 4.3% of the anticipated population growth in North Kona from 2000 to 2010. The provision of new health care facilities and services is largely a function of the private sector in response to demand. There are no county or state requirements for Kula Nei to contribute health care facilities. The State of Hawaii actively participates in the process of developing new facilities. A new facility must be granted a Certificate of Need by the State Health Planning and Development Agency in order to be built. To ensure that there are adequate health care facilities to serve North Kona's anticipated population growth, the private sector must coordinate its efforts with the State agencies that regulate the provision of services.
37. The legend's font size has been increased.
38. The rating "NC" is a typo. It has been corrected to read "NA."
39. The project's applicability to the goal of diversified agriculture is discussed in the first commentary section on page 5-11 of the DEIS. As diversified agricultural is generally understood to mean locally grown agricultural products, the project's increase in population will help to create new demand for locally grown agricultural products. No agricultural crops are currently grown on the property. The Kula Nei property is marginal agricultural land that has been planned by the State and the County for residential development.

40. Policy b2 states: “Encourage agriculture by making the best use of natural resources.” As discussed in the commentary at the end of the section, the Kula Nei property is marginal agricultural land that has been planned by the State and the County for residential development. The development of the Kula Nei property, therefore, does not conflict with the vitality of the agricultural industry. In fact, it makes the best use of the land as a natural resource: hence the determination that it conforms to the stated policy.
41. The commentary at the end of the section adequately addresses how the development of the Kula Nei project is applicable to the goal of improving existing visitor destination areas. The provision of housing to support workers in the visitor industry is the cornerstone of the State’s West Hawaii Regional Plan as well as the County’s Keahole to Kailua Development Plan. The Kula Nei project will provide new housing on land identified for that purpose. The personal well being of workers is an important component of a successful visitor destination area.
42. The ability of visitor industry workers to afford market range or affordable units is dependent upon their financial assets. Thus, we are unable to determine if a given worker is able to afford a unit. However, the provision of affordable housing is intended to meet the regional demand for affordable units. It is believed that the demand includes visitor industry workers.
43. The Palamanui project has a 10-year development program (2004 – 2014). As the Kula Nei project lags behind Palamanui by several years, it is felt that Kula Nei can continue to address market demand after Palamanui is completed. The precise development schedule for the UH West Hawaii campus is not known. However, given the relative proximity of Kula Nei to the proposed campus site, the Kula Nei project will likely be attractive to prospective homebuyers employed by the University.
44. Please see discussion in item #3 above.
45. Please see discussion in item #42 above.
46. Please see discussion in item #27 above.
47. Please see discussion in item #19 above. As stated on page 4-54, a preservation plan will be prepared in consultation with descendants of the area. The specific steps that will be taken to protect the archaeological resources that will be preserved in place will be determined at the time the

Mr. George Casen  
September 14, 2007  
2006.33.1300 / 07P-355  
Page 10

Preservation Plan is prepared, reviewed, and approved by the State Historic Preservation Division, in consultation with descendants of the area.

48. Please see discussion in item #43 above.
49. Please see discussion in item #3 above.
50. Please see discussion in item #47 and #19 above.
51. The word "recieving" has been corrected to read "receiving."
52. Former US Representative Ed Case's name has been replaced with Mazie Hirono.

Thank you for participating in the Chapter 343 review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read "Lee W. Sichter", written over a horizontal line.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf

**BOB JACOBSON**  
Councilmember

*Chair, Environmental Management Committee  
Vice-Chair, Finance Committee*



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BELT COLLINS HAWAII

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## HAWAI'I COUNTY COUNCIL

*County of Hawai'i*

August 6, 2007

Gene Yong, Project Manager  
Belt Collins Hawai'i, Ltd.  
2153 North King Street, Suite 200  
Honolulu, Hawai'i 96819-4554

Re: DEIS Response

Dear Sirs,

I appreciate the opportunity to submit comments on the DEIS for the Kula Nei Project at O'oma in North Kona. It is my hope that the developer and project manager will seriously consider the responses that are received and that they work in good faith to mitigate and/or eliminate situations that remain problematic. It is also my hope that the host culture and its historical artifacts and/or burial sites in the area are afforded the utmost consideration prior to breaking ground for this project.

I have concerns with the following areas:

### *THE PROPOSED PROJECT*

- A development timetable is necessary to inform surrounding residents of when and how long they will be subject to construction related noise, dust and traffic changes as needed for the project. This is just and prudent and will demonstrate a good faith effort by the developer in acknowledging negative impacts to surrounding residents during the construction phase.
- You allude to the possibility that this developer may not develop the project and instead flip it, in the phrase on page 2-8, "The applicant or successor will secure the necessary permits". This is very disturbing to me as it has been a common practice here that has lead to several undesired developments that continue to cause discontent and anxiety to surrounding residents as well as to the larger island community.
- Housing and especially affordable housing is a critical need for our island, I appreciate that this project seems to attempt to meet some of those needs. However for you to suggest that the homes are "anticipated" for primary residences does not guarantee they will be. You will be hard pressed to regulate purchases by "snow birds" and will most likely be met with serious legal challenges if you do. Therefore I will just assume that a percentage of the "market value" homes will be seasonally occupied by part time

Gene Yong, Project Manager  
Belt Collins Hawai'i, Ltd.  
2153 North King Street, Suite 200  
Honolulu, Hawai'i 96819-4554

residents, which will not contribute to our overall housing inventory. Your attempt to address this in the DEIS is therefore without merit and misleading to the general public.

- With ground breaking anticipated in 2010 and build out by 2017 what might the affordable housing prices be by then, you only give anticipated amounts based on 2007 dollars.
- To mitigate the need for landscaping irrigation, native plants should be used where ever possible in the projects green spaces and common areas.
- The project should be designed to LEEDs building design guidelines and other minimum standards for energy efficiency with the U.S. Environmental Protection Agency's Energy Star rating program.

### ***CULTURAL IMPACTS***

- I am mystified by your plan to concentrate density on parcel 7-3-009:007 when your own Summary of Archaeological Sites (Fig. 4-5) demonstrates that this parcel has the highest concentration of identified historical sites. It seems to me that the development of larger lots on parcel 7-3-009:007 would mitigate the necessity for disturbances in the area, as opposed to smaller lots that will probably require pin to pin clearing.
- As to your proposed treatment of "lava cavities" (pg. 3-7), which are most likely old caves or remnants of old cave systems. I would like to be assured that these "cavities" will be thoroughly investigated using both manual and electronic means to ensure nothing of cultural significance is over looked and lost forever. I do understand that with the increase of seismic activities in the region it is prudent to deal with the geological characteristics in a way that will provide safe and sure foundations on which to construct all the residential units. However I feel it is just and prudent to ensure **ANY** and **ALL** cultural artifacts are found and treated as required by law. By your own admission this area was populated and cultivated from pre-contact to modern times, it seems highly likely that at least some of the "cavities" were used for burials, storage and/or habitation and therefore should be investigated to the fullest extent possible.
- In addressing your requests on pg. 2-24 to have the County quitclaim any portion of Homestead Road to the developers or any other entity, I would say that it is our responsibility as government leaders to ensure public access to and use of all public trails, maintenance is a small price to pay to guarantee this perpetual public right. I take this charge very seriously, and while your offer is honorable it does not guarantee unrestricted public access to the trail. It is interesting that you "propose" to preserve the alignment of the historic Homestead Road and that it will be used as a public trail (pg. 2-24), when it already is and shall be in perpetuity, as mandated by current prevailing laws, and any realignment by the developer or anyone else would be a violation of said laws.

### ***ROADS/INFRASTRUCTURE***

Gene Yong, Project Manager  
Belt Collins Hawai'i, Ltd.  
2153 North King Street, Suite 200  
Honolulu, Hawai'i 96819-4554

- I would suggest that you try to meet the minimal requirements that will be forthcoming in our concurrency ordinance. I should think that the Planning Department can provide some direction even though no formal ordinance has been adopted at this time. This will demonstrate a good faith effort on the part of the developer and provide a model for other developers to follow.
- I also share the concerns as stated by our Police Department, about traffic impacts and accessibility into and out of the project site. For obvious reasons our public safety providers must have unfettered access to the project.
- A contingency plan for road access from Kaiminani Road should be included in the event that you are unable to secure access through the State owned parcel. Do not assume access across state parcels.
- Will all necessary rock materials be available on site? If so what mitigations are in place for noise and dust control?
- I trust that your development will comply with all EPA standards for waste water collection and treatment. I would stress the importance of compliance to mitigate any seepage or leaching to the lands below the project site.
- Echoing the concerns of our Parks and Recreation Department I agree the Park you describe is inadequate for a "County Park". I also have concerns about your unwillingness to provide restroom facilities at the park. Even if a transfer to the County is not realized the residents and other park users should be accommodated with at least a comfort station of some kind.

#### *UNANSWERED CONCERNS*

- I responded to the EIS Preparation Notice and asked specific questions about the "ohe makai and ko'oko'lau as both species have United Fish & Wildlife Service designations yet on pg. 3-29 you argue that although ko'oko'lau has been observed and although it was once a candidate for federal listing as endangered or threatened, and that in the absence of such listing has no protective status. While this may be a legal reality what about your moral or ethical obligations?
- I also requested a development timeline which is not clear in the DEIS.

Thank you for the opportunity to provide these comments and if you would like to address any of the concerns I have please feel free to contact me anytime.

Mahalo,



Bob Jacobson, Council Member  
District 6

BJ/bl



September 14, 2007  
2006.33.1300 / 07P-356

The Honorable Bob Jacobson  
Councilmember – District 6  
Hawaii County Council  
25 Aupuni Street, Suite 200  
Hilo, HI 96720

Dear Councilmember Jacobson:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343, Hawaii Revised Statutes, as amended, (HRS) public and agency review process. We are writing in response to the comments you provided on August 6, 2007 for the above document. Our responses are presented in the order of your comments.

***The Proposed Project***

1. A preliminary development schedule was provided in Table 2-4 of the Draft EIS. As the project requires several land use approvals, including a Change of Zone, the development schedule will be updated as necessary and surrounding property owners will be notified in compliance with applicable regulations.
2. The paragraph following your reference states that at this point in time. The Shopoff Group intends to serve as the project's Master Developer, overseeing the subdivision and development of the property. The Shopoff Group is committed to working with the County of Hawaii to ensure that the proposed project is consistent with the representations made in the EIS.
3. The sale of homes cannot be restricted to a specific segment of the housing market and the applicant has no ability to control whom the eventual buyers may be. We regret that you find that the description on page 2-8 unsatisfactory. It was based upon the findings of the market analysis presented as Appendix A in Volume 2 of the EIS. The second bullet point of Key Findings on page 6 of the Market Analysis, in its conclusions about the North Kona regional housing market, states: "Buyers include both local residents and others. Offshore buyers, mostly California residents, may seek homes for vacation use, regular part-time residence, or retirement." It was

Honolulu  
Guam  
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Philippines  
Seattle  
Singapore  
Thailand

offered as a true, factual and candid statement that was not intended to mislead the public or elected officials.

4. The aforementioned Market Analysis states on page 7: “The market analysis was conducted in mid-2006. Since that time, real estate sales and prices throughout Hawaii have stabilized. The earthquake of October 15, 2006, led to some damage to property on the Big Island, but has not led to a marked change in real estate sales on the Big Island. The current slowdown can be viewed as a normal part of the real estate cycle, and in line with the trends discussed in this report. Projections developed in this report are based on multiyear trends, and hence allow for short-term changes in market volume.” While it is difficult to project future housing prices, we believe that the methodology employed by the market analyst is consistent with professional standards and offers a reasonable estimate for the near future.
5. Section 2.4.10 of the Draft EIS states: “Landscaping standards for individual single-family residential lots will be established by covenants, conditions and restrictions (CC&Rs) and enforced by the Kula Nei HOA. Native plants and drought-tolerant landscaping will be encouraged for selected areas.” We believe this statement is consistent with your recommendation.
6. We appreciate your recommendation that the project be designed to LEED building design guidelines. While the applicant cannot commit to LEED standards, the applicant is committed to the concept of promoting green building design to the extent that it does not undermine the objective of providing affordable and primary market priced housing.

### ***Cultural Impacts***

1. The proposed lotting on Parcel 7 actually takes the density of archaeological sites into account. Please note that the vast majority of the sites are agricultural in character and are not anticipated to warrant preservation. All sites recommended for preservation and confirmed for preservation by the State Historic Preservation Division will be preserved.
2. Please be assured that the project area has undergone an extensive archaeological inventory survey in an effort to identify all cultural resources, including caves and lava tubes. The term “lava cavities” on page 3-7 relates to spaces and voids that are often encountered during site development. As required by law, should any caves, lava tubes, or cultural remnants be discovered during grading, work will stop immediately so that a consulting

archaeologist can evaluate any inadvertent finds and take the appropriate measures to preserve them.

3. The applicant fully understands that the Homestead Road is a public road and that access to it cannot be restricted. However, in reality, the Homestead Road is impassible by pedestrians and vehicles in its present state. It is entirely choked with vegetation and vegetation debris. Some portions of the abutting walls are collapsed and the rubble creates dangerous footing. The applicant does not currently have the authority to improve the Homestead Road to a usable trail. But rather, the applicant views the Homestead Road alignment as both an asset and a community benefit and is proposing to remove the vegetation and restore the walls so that it can become a community amenity with unrestricted public access.
4. The applicant will comply with provisions of the Hawaii County Code that pertain to concurrency. We appreciate your suggestion that the project comply with forthcoming legislation. Once that legislation has been formally adopted as law, the applicant will comply to the extent required.
5. As discussed in the Draft EIS, the applicant is committed to a fair-share contribution to mitigate traffic impacts and is actively working with State and County agencies, and surrounding landowners to fulfill the Planning Department's vision of an improved regional roadway network to relieve congestion on Queen Ka'ahumanu Highway.
6. As discussed on page 4-143 of the Draft EIS, alternative future scenarios, including the lack of access across State property to the north of the project, have been assessed as part of the project's Traffic Impact Analysis Report.
7. At this point in time, we believe that a net balance can be achieved during mass grading; meaning that the amount of fill material required can be satisfied by the amount of cut material. However, it is likely that aggregate rock will be required from offsite for building pads, roadway beds, and lining the bottoms of pipe trenches. Mitigation measures for noise control are presented on page 4-146 of the Draft EIS. Mitigation measures for dust control are presented on page 4-152 of the Draft EIS.
8. Measures to mitigate potential wastewater disposal impacts are presented in the Draft EIS beginning on page 4-184. The project will comply with all applicable standards pertaining to wastewater collection, treatment and disposal.

9. The applicant will comply with all park dedication requirements pursuant to Sections 8-6 and 8-7 of the Hawaii County Code.

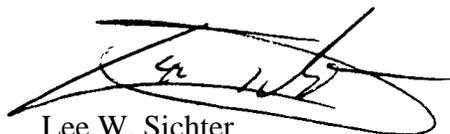
***Unanswered Concerns***

1. The statements regarding *ohe makai* and *ko'oko'lau* in the Draft EIS are factual and included for the purposes of disclosure as required by Chapter 343. The applicant will encourage the Home Owners' Association to adopt rules recommending the use of these plants in residential landscaping to the extent practicable.
2. As discussed in the first item in this letter, a preliminary development schedule was included in the Draft EIS as table 2-4 in direct response to your EISPN comment letter. As the project requires several land use approvals, including a Change of Zone, the development schedule will be updated as necessary and surrounding property owners will be notified in compliance with applicable regulations.

Again, thank you for your participation in the review and comment process.

Very truly yours,

BELT COLLINS HAWAII LTD.

A handwritten signature in black ink, appearing to read 'LWS', is written over a horizontal line.

Lee W. Sichter  
Principal Planner



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2007 AUG 17 PM 2:20

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAII 96720  
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

August 13, 2007

Belt Collins Hawaii Ltd.  
ATTENTION: MR. LEE SICHTER  
2153 North King Street, Suite 200  
Honolulu, HI 96819

**DRAFT ENVIRONMENTAL IMPACT STATEMENT**  
**PROJECT: KULA NEI**  
**APPLICANT – THE SHOPOFF GROUP, L.P.**  
**TAX MAP KEY 7-3-007:038 AND 039; 7-3-009:007**

We have reviewed the subject Draft Environmental Impact Statement (DEIS) and have the following comments.

Please be informed that the Department has met with the developer, The Shopoff Group, L.P., to determine the necessary offsite and onsite water system improvements required for the development. As indicated in the subject DEIS, the necessary offsite improvements will include, but not be limited to, the development of a new well, concrete storage tanks, pressure reducing valve stations, and transmission lines. The necessary onsite water system improvements will include, but not be limited to, distribution facilities and fire hydrants. All elements of the offsite and onsite water system improvements must be designed and constructed in accordance with the Department's Water System Standards, 2002, as amended.

The developer will also be required to enter into an agreement with the Water Board, which describes the necessary offsite water system improvements and the allocation of water commitments from the new well. Further, water service within the proposed development will not be granted until the necessary offsite and onsite water system improvements are completed and accepted by/dedicated to the Water Board.

The Department will also note that it is our understanding that the developer has, or will, purchase the proposed well and reservoir site, located at Tax Map Key 7-3-006:036 (Portion), and 037 (Portion), from a Mr. Ronald Brown with whom the Department had a previous agreement to convey a portion of that property for a well and reservoir site. The Department anticipates that the developer will fulfill Mr. Brown's obligation to convey the aforementioned site as they have, or will, assume ownership of the property.

Should there be any questions, you may contact Mr. Finn McCall of our Water Resources and Planning Branch at 961-8070, extension 255.

Sincerely yours,

Milton D. Pavao, P.E.  
Manager

FM:dfg

copy – State of Hawai'i, Office of Environmental Quality Control  
State of Hawai'i, Land Use Commission

... *Water brings progress...*



September 14, 2007  
2006.33.1300 / 07P-357

Mr. Milton D. Pavao, P.E., Manager  
Department of Water Supply  
County of Hawaii  
345 Kekuanaoa Street, Suite 20  
Hilo, HI 96720

Dear Mr. Pavao:

**Draft Environmental Impact Statement  
Kula Nei Project  
North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response to the comments you provided on August 13, 2007 for the above document. Our responses are presented in the order of your comments.

1. The Shopoff Group, L.P., appreciates the opportunity to have met with the Hawaii County Department of Water Supply to determine the necessary onsite and offsite water system improvements required for the proposed Kula Nei development. The Shopoff Group, L.P., understands that the water system improvements must be designed and constructed in accordance with the Department's Water System Standards, 2002, as amended.
2. A draft Well Development Agreement has been prepared to facilitate the construction of the offsite water system improvements and the allocation of water commitments from the proposed well. The Well Development Agreement has been submitted to the Department under separate cover for your review and comment.
3. TMK 7-3-006:36 and 37 have been acquired by affiliated partnerships of the applicant. The obligations assumed under the previous agreement between Mr. Ronald Brown and The Department of Water Supply will be fulfilled and are incorporated into the proposed Well Development Agreement described above.

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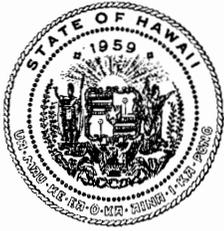
Again, thank you for your participation in the Chapter 343 comment and review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf



DEPARTMENT OF BUSINESS, RECEIVED  
ECONOMIC DEVELOPMENT & TOURISM

LINDA LINGLE  
GOVERNOR  
THEODORE E. LIU  
DIRECTOR  
MARK K. ANDERSON  
DEPUTY DIRECTOR

STRATEGIC INDUSTRIES DIVISION  
235 South Beretania Street, Leiopapa A Kamehameha Bldg., 5<sup>th</sup> Floor, Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

2007 AUG 17 PM 2:19  
Telephone: (808) 587-3807  
Fax: (808) 586-2536  
Web site: www.hawaii.gov/dbedt

BELT COLLINS HAWAII

August 7, 2007

Mr. Lee Sichter, Principal Planner  
Belt Collins Hawaii Ltd.  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819

Dear Mr. Sichter

Re: Draft Environmental Impact Statement  
Kula Nei Project, Ooma, North Kona, Island of Hawaii  
Tax Map Key: Primary Project Area: 7-3-007:038; 7-3-007:039; 7-3-009: 007

Thank you for the opportunity to provide comments on the DEIS for the Kula Nei Project, a low-density residential subdivision that will ultimately consist of 270 residential units including approximately 216-220 single family home sites as well as approximately 54 affordable single family or multi-family units.

We would like to call your attention to: (1) State energy conservation goals; and, (2) energy and resource efficiency and renewable energy and resource development.

- 1. State energy conservation goals.** Project buildings, activities, and site grounds should be designed and/or retrofit 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 note that in Chapter 5.4.6.2. *Conformance with the Goals of the [energy] Plan*, you will improve roadway connections that would result in improvement of "vehicular circulation", thus reducing transportation energy consumption. You note opportunities for improved energy efficiency at the residential level which would range from ventilation design, landscaping, and the installation of energy saving devices including reduced consumption light fixtures.

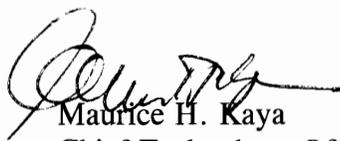
**2. Energy and resource efficiency and renewable energy and resource development.**

We do not note any proposed covenants to enhance the sustainability of the development, including green architecture, solar water heating and photovoltaic energy for appliances, shading of exterior lighting, and water conservation measures.

We encourage the parties to this development to make a further commitment to energy and resource efficiency and include a requirement in the Conditions, Covenants, and Restrictions for a development that meets the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Certification. Zero-Net Energy Green Homes should be considered.

Our website (<http://www.hawaii.gov/dbedt/info/energy/efficiency/>) provides detailed information on guidelines, directives and statutes, as well as studies and reports on aspects of energy efficiency. Please also do not hesitate to contact Carilyn Shon, Energy Efficiency Branch Manager, at telephone number 587-3810, for additional information on LEED, energy efficiency, and renewable energy resources.

Sincerely,



Maurice H. Kaya  
Chief Technology Officer

c: OEQC  
Anthony Ching, State Land Use Commission



September 14, 2007  
2006.33.1300 / 07P-358

Mr. Maurice H. Kaya  
Chief Technology Officer  
Strategic Industries Division  
Dept. of Business, Economic Development & Tourism  
State of Hawaii  
P.O. Box 2359  
Honolulu, HI 96804

Dear Mr. Kaya:

**Draft Environmental Impact Statement**  
**Kula Nei Project**  
**North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response to the comments you provided on August 7, 2007 for the above document. Following are responses in the order of your comments.

1. A discussion of the project’s compliance with Chapter 344 begins on page 5-52 of the Draft EIS. A discussion of the project’s compliance with Chapter 226 begins on page 56-8. The discussion of Chapter 226(18) is presented on page 5-18. As noted in the commentary on that page, the project can contribute to energy efficiency in two arenas: transportation and residential energy consumption.
2. The aforementioned discussion on page 5-18 includes the following statement: “Opportunities for improved energy efficiency at the residential level will range from ventilation design, landscaping, and the installation of energy saving devices, and reduced consumption lighting fixtures.” The applicant will consider your recommendation for the inclusion of covenants pertaining to green architecture, solar water heating, photovoltaic energy for appliances, shading of exterior lighting and water conservation measures. While the applicant is committed to promoting energy efficiency and green building design, the applicant remains concerned that subjecting the project to LEED certification may result in added construction and amenity costs that preclude the project from meeting its objective of providing affordable and primary market priced housing.

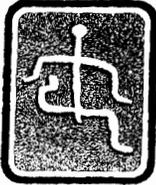
Honolulu  
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Again, thank you for your participation in the Chapter 343 comment and review process.

Very truly yours,  
BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf



**NA ALA HELE**  
Hawai'i Trail & Access System

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BELT COLLINS HAWAII

August 21, 2007

Mr. Lee W. Sichter, Principal Planner  
Belt Collins Hawaii Ltd.  
2153 North King St., Suite 200  
Honolulu, Hawaii 96819-4554

Dear Mr. Sichter,

Re: Draft EIS Kula Nei Project, Ooma, North Kona, Island of Hawaii  
Tax Map Key(s): 7-3-7-38 and 39 and 7-3-9-7

Research has been completed on the "Homestead Road" traveling through the development. Records fail to disclose a historic or ancient trail that may be affected by the said road or proposed subdivision. Therefore, Na Ala Hele does not claim any interest in the subject road.

Should you need further assistance with this matter please call me at 808-974-4221.

Sincerely yours,

Irving Kawashima  
Trail and Access Specialist

CC: Hawaii County Planning  
Historic Preservation



September 14, 2007  
2006.33.1300 / 07P-359

Mr. Irving Kawashima  
Trail and Access Specialist  
Na Ala Hele – Hawaii Trail and Access System  
Division of Forestry and Wildlife  
Department of Land and Natural Resources  
State of Hawaii  
P.O. Box 4849  
Hilo, HI 96720-0849

Dear Mr. Kawashima:

**Draft Environmental Impact Statement  
Kula Nei Project  
North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response your office's August 21, 2007 letter regarding the above document. We acknowledge your comment that Na Ala Hele does not claim any interest in "Homestead Road."

Again, thank you for your participation in the Chapter 343 comment and review process.

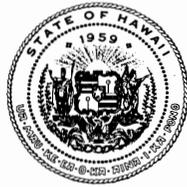
Very truly yours,

BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

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2007 AUG 22 PM 2:05

BELT COLLINS HAWAII

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

BARRY FUKUNAGA  
DIRECTOR

Deputy Directors  
MICHAEL D. FORMBY  
FRANCIS PAUL KEENO  
BRENNON T. MORIOKA  
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.2577

August 16, 2007

Mr. Lee W. Sichter  
Principal Planner  
Belt Collins Hawaii Ltd.  
2153 North King Street, Suite 200  
Honolulu, Hawaii 96819

Dear Mr. Sichter:

Subject: Kula Nei Project (Shopoff Group)  
Draft Environmental Impact Statement (DEIS)  
TMK: 7-3-007: 038, 039; 7-3-009: 007

Thank you for your transmittal of the subject DEIS for the proposed development of a 270-unit residential subdivision project and the accompanying request for comments.

Our comments follows:

1. The Kula Nei Project is responsible for mitigating its impacts on existing and proposed local roadways and State highways in the area. Examples of these impacts and mitigating measures are:
  - a. In Section 4.3.5. *Impact Analysis*, the DEIS states, "... the Kula Nei project will ... seriously impact traffic conditions at Holoholo Street and on Mamalahoa Highway."
  - b. In Section 4.3.6. *Mitigation*, the DEIS states, "To improve traffic conditions in the region, the Kula Nei project proposes the following mitigation measures which are consistent with County Plans. In some instances (the measures are) ... funded by Kula Nei. In others, funding must be shared among a number of projects that contribute to the increased traffic... Kula Nei will mitigate Holoholo Street and Kaiminani Drive (impacts) with a signal. Queen Kaahumanu Highway and Hina Lani Street (impacts) could be mitigated to acceptable conditions by ... overlapping protected northbound right-turn phase and prohibiting U-turns on the westbound approach."

2. The DEIS states that the subject project will seriously impact traffic conditions on Mamalahoa Highway, and that the applicant/developer proposes to contribute only 5.8% of the cost for the installation of a traffic signal at Mamalahoa Highway and Kaiminani Drive and 5.1% of the cost for roadway improvements at Mamalahoa Highway and Hina Lani Street. The DEIS further states that the applicant/developer proposes to contribute 3% of the cost for mitigation measures for negligible impacts to Queen Kaahumanu Highway. We believe that serious impacts require more than the offered 5.1-5.8% share, particularly if a 3% share is being offered to mitigate negligible impacts.
3. The Kula Nei Project must coordinate its efforts with the other contributing projects to insure proper implementation of the signalization and roadway improvements. The traffic improvements should also be consistent with the County's plans and State highway requirements. Arrangements for such coordination should be proposed and described as part of the subject project. The applicant/developer, along with the other project developers, should submit this coordination plan to the County of Hawaii, with a request that the DOT Highways Division be consulted to coordinate the implementation of the signalization and roadway improvements on Mamalahoa and Queen Kaahumanu Highways as recommended in the TIAR.

Thank you for the opportunity to provide comments.

Very truly yours,



BARRY FUKUNAGA  
Director of Transportation

c: Christopher Yuen, Hawaii Planning Department  
Office of Environmental Quality Control



September 14, 2007  
2006.33.1300 / 07P-360

Mr. Barry Fukunaga, Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, HI 96813-5097

Dear Mr. Fukunaga:

**Draft Environmental Impact Statement  
Kula Nei Project  
North Kona, Island of Hawaii**

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response to the comments you provided on August 16, 2007 for the above document. Following are response in the order of your comments.

1. The applicant affirms its responsibility for mitigating the impacts resulting from the proposed project.
2. The estimates of fair-share contributions were prepared by the project's traffic consultant based upon a methodology used for other projects in Hawaii. To our knowledge, the State Department of Transportation has not established a specific formula for calculating fair share contributions. The applicant would be pleased to work with the department to arrive at a fair share contribution that is mutually agreeable.
3. The applicant would be pleased to work with surrounding landowners to prepare and present a coordination plan to the County of Hawaii, with a request for consultation by the DOT Highways Division. As stated in the Draft EIS, the applicant is committed to the coordination and implementation of traffic related improvements to fulfill the County's vision for an improved regional roadway network.

Honolulu  
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Again, thank you for your participation in the Chapter 343 comment and review process.

Very truly yours,

BELT COLLINS HAWAII LTD.

Lee W. Sichter  
Principal Planner

LWS:MJO:lf

## 8 CHAPTER EIGHT: REFERENCES

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