'O'oma BEACHSIDE VILLAGE

FINAL ENVIRONMENTAL IMPACT STATEMENT

NORTH KONA, HAWAI'I

VOLUME 1 OF 2

Prepared for:
Accepting Authority,
State of Hawai'i Land Use Commission
Docket No. A07-774
&
Petitioner,
'O'oma Beachside Village, LLC

Prepared by:

PBR HAWAII
& ASSOCIATES, INC.

January 2009

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&

Applicant,
'O'oma Beachside Village, LLC

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

Dennis Moresco, Manager
'O'oma Beachside Village, LLC

January 2009

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LIST OF ACRONYMS AND ABBREVIATIONS

µM	~~Microns~~ Micromoles
ALISH	Agricultural Lands of Importance to the State of Hawai'i
BMP	Best Management Practices
CATV	Cable television
CC&Rs	Conditions, Covenants and Restrictions
CDP	Community Development Plan
CFD	Community Finance District
CFR	Code of Federal Regulations
cfs	Cubic feet per second
CWRM	Commission on Water Resource Management
CZM	Coastal Zone Management
DAGS	Department of Accounting and General Services
dBA	A-weighted sound levels in decibels
DBEDT	Department of Business, Economic Development, and Tourism
DHHL	Department of Hawaiian Homelands

DLNR	Department of Land and Natural Resources
DNL	Day-Night Average Sound Level (also referred to as "Ldn").
DOE	Department of Education
DOH	Department of Health
DOT	Department of Transportation
DPED	Department of Planning and Economic Development
DWS	Department of Water Supply
EIS	Environmental Impact Statement
EISPN	Environmental Impact Statement Preparation Notice
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHA	Federal Housing Administration
FIRM	Flood Insurance Rate Map
FTE	Full time equivalent
GET	General excise tax
gpd	Gallons per day
HAR	Hawaiʻi Administrative Rules
HCC	Hawaiʻi County Code
HELCo	Hawaiʻi Electric Light Company, Inc.
HRS	Hawaiʻi Revised Statutes
HUD	Housing and Urban Development
K-to-K Plan	Keāhole to Kailua Development Plan
KCC	Kahala Capital Corporation
Kona CDP	Kona Community Development Plan
KV	Kilovolt
kW	Kilowatt
LEED	Leadership in Energy and Environmental Design
LEED-ND	LEED for Neighborhood Development
LSB	Land Study Bureau
LUC	Land Use Commission
LUPAG	Land Use Pattern Allocation Guide
MBR	Membrane bioreactor
mgd	Million gallons per day
mph	Miles per hour
msl	Mean sea level
NELHA	Natural Energy Laboratory of Hawaiʻi Authority
NGPC	Notice of General Permit Coverage
NHP	National Historic Park
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination Systems
NPS	National Park Service
NRCS	Natural Resources Conservation Service
OEQC	Office of Environmental Quality Control
ppt	Parts per thousand

RO	Reverse osmosis
ROW	Right-of-way
SCS	Soil Conservation Service
SHPD	State Historic Preservation Division
SLUDBA	State Land Use District Boundary Amendment
SMA	Special Management Area
TIAR	Traffic Impact Analysis Report
TMK	Tax map key
TND	Traditional Neighborhood Design
TOD	Transit Oriented Development
UBC	Uniform Building Code
UFC	Uniform Fire Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WWTP	Wastewater treatment plant

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Overview

‘O‘oma Beachside Village, located in North Kona, Hawai‘i will be a diverse coastal residential community, designed to be walkable, interconnected, and environmentally-conscious with diverse housing options, a range of community services, and an extensive open space network. It will be a vibrant community that encourages residents to build relationships with each other, rely less on cars for transportation, walk and bicycle more often, enjoy outdoor surroundings, and actively engage in civic life.

The traditional neighborhood design of ‘O‘oma Beachside Village community encompasses a full range of uses including homes, mixed-use villages, preserves, parks, trails, and shoreline access. The community will also include supporting infrastructure such as a wastewater treatment plant, a water system, and a charter school site.

Located makai of Queen Ka‘ahumanu Highway—an area ~~often reserved for~~ with many resort ~~development~~ developments—‘O‘oma Beachside Village ~~will~~ is unique in that it will offer a wide range of housing alternatives, focused on the primary resident market. In total, there will be 950 to 1,200 homes, which will include multi-family units, “live-work” or mixed-use units, workforce, gap group, and affordable homes, and single-family home lots. This inclusionary design provides for a community with social diversity, a mix of ages, and a range of life experiences.

‘O‘oma Beachside Village is characterized by three distinct areas: the Residential Village, the Mauka Mixed-use Village, and the Makai Mixed-use Village (see Figure 1). The mixed-use villages will include neighborhood business and services within walking distance of homes to support the community and thus reduce the number of car trips required to Kailua-Kona. Within the villages, shops and business may be located on building ground floors, and offices or residences on upper floors.

‘O‘oma Beachside Village’s internal network of interconnected streets will disperse internal vehicular traffic throughout the community and connect residential areas to the mixed-use villages. A second circulation system of linked pedestrian/bike paths will provide another option for traveling throughout the community.

Approximately one-third of ‘O‘oma Beachside Village will be open space in the form of parks, preserves, and landscape buffers. With a setback of at least 1,100-feet from the shoreline, the open space includes a 57-acre coastal preserve and an 18-acre public shoreline park. The shoreline park will connect to neighboring shoreline parks at the Shores of Kohanaiki (to the south) and the Natural Energy Laboratory of Hawai‘i (NELHA) (to the north) to form a continuous public shoreline recreation area.

The historic Māmalahoa Trail, which runs through the Property in a north-south direction, will remain protected and preserved. The Trail, along with wide buffers on both sides, will make up a 110-foot wide open space corridor encompassing approximately seven acres.

‘O‘oma Beachside Village is in alignment with the *County of Hawai‘i General Plan* and the ~~proposed North and South~~ Kona Community Development Plan (Kona CDP) goals and strategies that embody guiding principles relating to land use, transportation, housing, cultural resources, and infrastructure.

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Proposed
Frontage Road

DSP Hwy Buffer

Undesturbed Zone
& Setback Buffer

Charter
School
(+/- 3ac)

Multi-Family Residential

Waste Water
Treatment Plant
(+/- 3ac)

Grocery
Store

Mauka Mixed-use Village
(Commercial w/Appartments
& Multi-Family / Live Work Units)

Community Park

Multi-Family
Residential

MAKAI
MIXED-USE
VILLAGE

MAUKA
MIXED-USE
VILLAGE

Beach Front
Restaurant

Makai Mixed-use Village
(Commercial w/ Appartments)

O'oma Canoe Club

Shoreline Park

Coastal Preserved
/Open Space

Multi-Family
Residential

Community Pavilion

RESIDENTIAL VILLAGE

Proposed
Frontage Road

COASTAL PRESERVE
& SHORELINE PARK

FIGURE 1
Conceptual Master Plan

'O'oma Beachside Village

'O'oma Beachside Village, LLC — ISLAND OF HAWAI'I

NORTH — LINEAR SCALE (FEET) 200 0 200 600

PBR HAWAII & ASSOCIATES, INC.

Chapter 1

Introduction & Summary

1 INTRODUCTION AND SUMMARY

This ~~Draft~~ 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, State of Hawai‘i. Proposed is an applicant action by ‘O‘oma Beachside Village, LLC for the creation of ‘O‘oma Beachside Village, a master-planned community located in the North Kona region, Island of Hawai‘i.

1.1 PROFILE

Project Name:	‘O‘oma Beachside Village
Location:	‘O‘oma, North Kona, Hawai‘i
Judicial District:	North Kona
Tax Map Keys:	TMK (3) 7-3-009:004, 022, and (3) 7-3-009: (State ROW)
Landowners:	‘O‘oma Beachside Village, LLC (TMK (3) 7-3-009:004 and 022) State of Hawai‘i (TMK (3) 7-3-009: portion of State ROW)
Petitioner:	‘O‘oma Beachside Village, LLC
Land Area:	302.38 acres
SLUDBA Petition Area:	181.169 acres
Existing Use:	Vacant, open land with scrub vegetation and lava rock.
Proposed Use:	A “traditional neighborhood design” community that is walkable, interconnected, environmentally-conscious with diverse housing options, a range of community services, mixed-use villages and an extensive open space network (extensive shoreline setback, preserves, parks, trails, and shoreline access) and supporting infrastructure
Current Land Use Designations:	TMK (3) 7-3-009:004 State Land Use: Conservation Conservation District Subzones: General and Resource General Plan LUPAG: Open and Urban Expansion County Zoning: Open (O) Special Management Area (SMA): Within the SMA

TMK (3) 7-3-009:022
State Land Use: Urban
General Plan LUPAG: Urban Expansion
County Zoning: General Industrial (MG-3a)
Special Management Area (SMA): Within the SMA

TMK (3) 7-3-009: State ROW
State Land Use: Conservation
Conservation District Subzones: General
General Plan LUPAG: Urban Expansion
County Zoning: Open (O)
Special Management Area (SMA): Within the SMA

Proposed Land Use Re-Designations:

TMK (3) 7-3-009:004
State Land Use: Conservation to Urban
County Zoning: Open (O) to Project District (PD)

TMK (3) 7-3-009:022
County Zoning: General Industrial (MG-3a) to Project District (PD)

TMK (3) 7-3-009: State ROW
State Land Use: Conservation to Urban
County Zoning: Open (O) to Project District (PD)

Major Approvals/Permits Required:

Compliance with Chapter 343, HRS
State Land Use District Boundary Amendment
Change of Zone
Conservation District Use Permit
Special Management Area Permit
Subdivision Approval
Plan Approval
NPDES Permit
Grading/Building Permits

Accepting Authority: State Land Use Commission

1.2 APPLICANT

The applicant is 'O'oma Beachside Village, LLC.

Contact: Mr. Dennis Moresco, Manager
'O'oma Beachside Village, LLC
c/o Midland Pacific Building Corporation
7305 Morro Road, Suite 200
Atascadero, California 93422
Telephone: (805) 466-5100
Fax: (805) 466-5105

1.3 ENVIRONMENTAL CONSULTANT

'O'oma Beachside Village, LLC's environmental planning consultant for 'O'oma Beachside Village is PBR HAWAII.

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

1.4 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~~ applicant initiated EIS documents must be accepted by the government agency empowered to issue permits for the project.

Contact: Dan Davidson, Executive Officer
State Land Use Commission
Department of Business, Economic Development & Tourism
P.O. Box 2359
Honolulu, Hawai'i 96804
Telephone: (808) 587-3822
Fax: (808) 587-3827

1.5 COMPLIANCE WITH STATE OF HAWAI'I AND COUNTY OF HAWAI'I ENVIRONMENTAL LAWS

This document has been prepared in accordance with the provisions of Chapter 343, HRS, (Environmental Impact Statement Law) and Title 11, Chapter 200, HAR, Environmental Impact Statement Rules.

Section 343-5, HRS, establishes nine “triggers” that require the preparation of an environmental assessment or environmental impact statement. The triggers for ‘O‘oma Beachside Village include, without limitation, the following:

- Reclassification of approximately 181.169 acres from the State Land Use Conservation District to the State Land Use Urban District.
- Proposed highway intersection improvements on Queen Ka‘ahumanu Highway (a State highway facility).
- Crossings of the Māmalahoa Trail located within portions of the State ROW and Parcel 22.
- Use of lands within the 1.814-acre State ROW.
- Use of State and/or County lands and road rights-of-way for water and utility facilities, to include NELHA lands and resources produced thereon.
- Development of a wastewater treatment plant.

In addition, creation of ‘O‘oma Beachside Village may involve or impact State and/or County lands or funds relating to infrastructure improvements for public facilities, roadways, water, sewer, utility, drainage, or other facilities. While the specific nature of each improvement is not known at this time, the EIS is intended to address all current and future instances involving the use of State and/or County lands and funds relating to ‘O‘oma Beachside Village.

~~This~~ The Draft EIS was preceded by the *‘O‘oma Beachside Village Environmental Impact Statement Preparation Notice* (EISPN). The EISPN was submitted to the Office of Environmental Quality Control (OEQC) on April 25, 2007. Notice of the availability of the EISPN was published in the May 8, 2007 edition of the OEQC’s The Environmental Notice. Copies of the EISPN were provided to appropriate government agencies and other organizations (See Chapter 8). The public comment period for the EISPN began May 8, 2007 and ended June 7, 2007. Comments and responses on the EISPN received during the public comment period were incorporated in ~~this~~ the Draft EIS and the letters are provided in Chapter 11.

The Draft EIS was submitted to the Office of Environmental Quality Control (OEQC) on May 13, 2008. Notice of the availability of the Draft EIS was published in the May 23, 2008 edition of the OEQC’s The Environmental Notice. Copies of the Draft EIS were provided to appropriate government agencies and other organizations (See Chapter 8). The official 45-day public comment period on the Draft EIS was from May 23, 2008 to July 7, 2008. ‘O‘oma Beachside Village, LLC, as a courtesy to those that requested more time to review the document, extended the comment period on the Draft EIS until September 8, 2008. Comments and responses on the Draft EIS received during the public comment period, as extended to September 8, 2008, were incorporated in this Final EIS and the letters are provided in Chapter 12.

Prior to the preparation of the EIS, the Land Use Commission held a hearing on April 13, 2007 regarding Docket Number A07-774. The purpose of this hearing was to determine whether: 1) The Land Use Commission is the appropriate accepting authority pursuant to Chapter 343, HRS for the reclassification of approximately 181.169 acres of land currently in the Conservation District to the Urban District for master planned residential, commercial, public and private recreation, open space, park, and coastal preserve uses at ‘O‘oma 2nd – Kaloko, North Kona,

Hawai‘i; and 2) The proposed action may have a “significant effect” to warrant the preparation of an Environmental Impact Statement pursuant to Chapter 343, HRS.

During this April 13, 2007 Land Use Commission hearing, the Land Use Commission did determine that it was the appropriate accepting authority pursuant to Chapter 343, HRS and that the proposed action may have a “significant impact” to warrant the preparation of an Environmental Impact Statement pursuant to Chapter 343, HRS. The testimony received by the Land Use Commission during this hearing is provided in Appendix M.

1.6 STUDIES CONTRIBUTING TO THIS EIS

A number of specific technical studies were prepared for ‘O‘oma Beachside Village, and the full reports are included as appendices to this EIS. These studies include:

- Ground Water Quality Assessment
- Marine Environmental Assessment/Marine Water Quality Assessment
- Botanical Survey
- Avifaunal and Feral Mammal Survey
- Terrestrial Invertebrate Resources Survey
- Archaeological Inventory Survey
- Cultural Impact Assessment
- Traffic Impact Assessment Report
- Acoustic Study
- Air Quality Study
- Civil and Electrical Infrastructure Assessment
- Market Assessment
- Economic and Fiscal Impact Assessment

1.7 EXECUTIVE SUMMARY

1.7.1 ‘O‘oma Beachside Village

‘O‘oma Beachside Village will be a diverse coastal residential community, designed to be walkable, interconnected, and environmentally-conscious with diverse housing options, a range of community services, and an extensive open space network. ‘O‘oma Beachside Village, a “traditional neighborhood design” community in ‘O‘oma, North Kona, Hawai‘i, will encompass a full range of uses including homes, mixed-use villages, preserves, parks, trails, and shoreline access (Figure 1). The community will also include supporting infrastructure such as a wastewater treatment plant, a water system, and a charter school site.

The 302.38-acre ‘O‘oma Beachside Village property (the Property) is comprised of a:

- 217.566-acre parcel identified by TMK (3)7-3-009:004 (Parcel 4).
- 83-acre parcel identified by TMK (3)7-3-009:022 (Parcel 22).
- 1.814-acre portion of the State-owned Right-of-Way (ROW) located on by TMK (3)7-3-009: (State ROW).

The vision for ‘O‘oma Beachside Village is that of a sustainable community, one that does not deplete resources, but that works in harmony with nature. ‘O‘oma Beachside Village is designed to be a self-contained walkable community with an array of services and facilities to enable residents to meet many of their daily needs without using car.

‘O‘oma Beachside Village will provide housing and work opportunities for Island residents, helping to fulfill the primary residential needs of the region, and also enabling local residents to benefit from an improved quality of life associated with residing in the shoreline community.

‘O‘oma Beachside Village is characterized by three distinct areas: the Residential Village, the Mauka Mixed-use Village, and the Makai Mixed-use Village (see Figure 1). In total, there will be 950 to 1,200 homes, which will include multi-family units, “live-work” or mixed-use homes, workforce, gap group, and affordable homes, and single-family home lots. The Mauka Mixed-use Village and the Makai Mixed-use Village will include neighborhood business and services within walking distance of homes.

Approximately one-third of ‘O‘oma Beachside Village will be open space in the form of parks, preserves, and landscape buffers. With a setback of at least 1,100-feet from the shoreline, open space includes a 57-acre coastal preserve and an 18-acre public shoreline park.

The Māmalahoa Trail, which runs though the Property in a north-south direction will remain protected and preserved. The trail, along with wide buffers on both sides, will make up a 110-foot wide open space corridor encompassing approximately seven acres.

‘O‘oma Beachside Village’s internal network of interconnected streets will disperse internal vehicular traffic throughout the community and connect residential areas to the mixed-use villages. A second circulation system of linked pedestrian/bike trails will provide another option for traveling throughout the community.

‘O‘oma Beachside Village is in alignment with the *County of Hawai‘i General Plan* and the proposed North and South Kona Community Development Plan (Kona CDP) goals and strategies that embody guiding principles relating to land use, transportation, housing, cultural, and infrastructure.

‘O‘oma Beachside Village will be a vibrant community that encourages residents to build relationships with each other, rely less on cars for transportation, walk and bicycle more often, enjoy outdoor surroundings, and actively engage in civic life.

1.7.2 Summary of Potential Impacts and Proposed Mitigation Measures

Creation of ‘O‘oma Beachside Village will transform the lava fields of the Property into a vibrant, mixed-use community. Appropriate mitigation measures have been incorporated into the overall community planning. For areas of particular concern, the following summarizes mitigation measures recommended or planned to minimize or mitigate potential adverse impacts.

Groundwater Resources and Nearshore Marine Environment – The results of groundwater and marine water analysis reports conclude that ‘O‘oma Beachside Village is not anticipated to

impact groundwater, marine waters, or ocean biology. This conclusion is based on analysis of potential impacts of 'O'oma Beachside Village's proposed water, wastewater, irrigation (including fertilizer application), and drainage systems. Section 3.5 contains the full discussion.

Flora – No endangered or threatened plant species were identified on the Property. Areas with dense concentrations of the rare plant, pilo, will be preserved as part of the 57-acre coastal preserve. Section 3.6 contains the full discussion.

Fauna – 'O'oma Beachside Village is not expected to impact any ~~rare,~~ endangered~~,~~ or threatened species (including invertebrate species) as none were found within the Property. Impacts to marine animals (such as turtles and seals) that my occasionally "haul out" along the shoreline are not expected because the entire shoreline area will preserved as a shoreline park and coastal preserve. Section 3.7 contains the full discussion.

Archaeological Resources – A total of nine archaeological sites have been identified on the Property. Two sites containing burials (SIHP Site 18773 and 25932) will be preserved pursuant to a burial treatment plan prepared in consultation with recognized descendants and the Hawai'i Island Burial Council. The other preservation sites will be treated in accordance with a preservation plan submitted to and approved by SHPD prior to final subdivision approval. Section 4.1 contains the full discussion.

Cultural Resources – There were no specific ongoing traditional cultural practices identified relative to the land within the Property; however, there are potential cultural impacts, both specific and nonspecific, related to coastal and near-shore subsistence and recreational activities, primarily among beachgoers, fisherman, and surfers. As 'O'oma Beachside Village will in no way inhibit coastal access, and as nearly all buildings and other uses are significantly set back (at least 1,100 feet) from the shoreline, it is envisioned that the protection and preservation of the 'O'oma shoreline will be enhanced; and that no traditional and customary practices will be impacted. Section 4.2 contains the full discussion.

Trails and Access – 'O'oma Beachside Village will enhance public access to the shoreline. The 18 acres along the shoreline designated as a public shoreline park will be an extension of the beach parks planned at The Shores at Kohanaiki and NELHA. In addition, the Ala Kahakai National Historic Trail corridor is proposed to run within this public shoreline park area. 'O'oma Beachside Village will also protect and preserve the Māmalahoa Trail. Section 4.3 contains the full discussion.

Traffic – 'O'oma Beachside Village will be part of the regional solution to traffic circulation on Queen Ka'ahumanu Highway by working cooperatively with the State, County, and adjoining landowners to plan and develop its portion of a frontage road makai of, and parallel to, Queen Ka'ahumanu Highway. In addition, the State DOT and County of Hawai'i have many roadway improvements planned to meet the expected growth in the area. Combined with the proposed makai frontage road, the effect of these improvements would be the diversion of trips from Queen Ka'ahumanu Highway and therefore reduced congestion on Queen Ka'ahumanu Highway.

The traditional neighborhood design of ‘O‘oma Beachside Village will minimize trips onto Queen Ka‘ahumanu Highway as many essential services needed by ‘O‘oma Beachside Village residents will be within walking and biking distance. The traditional neighborhood design will also contribute to the feasibility of public transportation by providing a concentrated population within a walkable community, thus enabling many people to walk a short distance to get to a transit stop. ‘O‘oma Beachside Village is also expected to decrease commuting through Kailua-Kona by providing homes nearer to major employment centers in Kohala.

Section 4.4 contains the full discussion regarding traffic.

Noise – In the short term, construction of ‘O‘oma Beachside Village will generate temporary noise impacts. The dominant noise sources during construction will most likely be earth-moving equipment, such as bulldozers and diesel trucks. Noise from construction activities will comply with all federal and state noise control regulations. In the long-term, traffic-generated noise to the community will be mitigated by adequate setbacks from the highway, in conformance with federal highway standards. Section 4.6 contains the full discussion.

Air Quality – In the short term, construction of ‘O‘oma Beachside Village will unavoidably contribute to air pollutant concentrations due to fugitive dust releases at construction areas. Mitigation measures, including frequent watering of exposed surfaces, will help to reduce and control such releases. Air quality modeling analysis of estimated community-related traffic indicates that over the long-term, predicted concentrations of pollutants will remain well below State and Federal standards. Section 4.7 contains the full discussion.

Water – An (on-site or off-site) desalination plant is the preferred alternative for providing water to ‘O‘oma Beachside Village. Desalination is self-sufficient and environmentally sound, as it will not negatively impact the basal lens or nearshore water quality.

Potable water use will be limited to that for consumption, general household and commercial use, and irrigation of landscaping within individual residential lots. Non-potable water will be used for general irrigation of common landscaping features, including community parks, neighborhood parks, and open spaces (as necessary). Section 4.9.1 contains the full discussion.

Wastewater – An on-site wastewater treatment plant is the preferred alternative for processing ‘O‘oma Beachside Village wastewater. An on-site wastewater treatment plant is self-sufficient, water efficient, and environmentally sound, as it will provide recycled (R-1) water for general irrigation within ‘O‘oma Beachside Village and thus lessen demand for potable water. Section 4.9.2 contains the full discussion.

Drainage – Stormwater over ‘O‘oma Beachside Village will either percolate directly into the ground (in natural and landscaped areas) or will be collected in a system of catch basins and drain lines and disposed of in drywells located throughout the community. Drainage from ‘O‘oma Beachside Village is not expected to have an adverse effect on groundwater or coastal marine waters. Section 4.9.3 contains the full discussion.

Solid Waste – Provisions for recycling, such as collection systems and space for bins for recyclables, will be incorporated into ‘O‘oma Beachside Village. Waste that cannot be recycled

or incorporated into on-site green waste processing will be disposed of in the Pu'uanahulu landfill. Section 4.9.4 contains the full discussion.

Electrical – O'oma Beachside Village will strive to incorporate energy conservation strategies such as use of solar power or photovoltaic systems. 'O'oma Beachside Village, LLC will also consider possibilities for net energy metering in building design to allow residents and businesses to lower electricity costs and provide energy back into the system. Section 4.9.5 contains the full discussion.

Housing – 'O'oma Beachside Village will help to satisfy the housing demand of a growing population by providing 950 to 1,200 new homes in West Hawai'i. While located makai of Queen Ka'ahumanu Highway—an area ~~often reserved for~~ with many resort ~~development~~ developments—'O'oma Beachside Village ~~will~~ is unique in that it will offer a wide range of housing choices focused on the primary resident market, including multi-family units, "live-work" or mixed-use units, workforce, gap group, and affordable homes, and single-family home lots. Section 4.10.2 contains the full discussion.

Economy – Creation 'O'oma Beachside Village will contribute substantial positive economic benefits including approximately: 1) 340 full time equivalent (FTE) jobs per year during the build-out period; 2) 480 direct permanent, ongoing FTE new jobs after build-out; 3) $3.2 million per year in net County revenues (taxes less operating revenues) after build-out; and 4) $1.4 million per year in net State revenues (taxes less operating revenues) after build-out. Section 4.10.5 contains the full discussion.

Public Services –'O'oma Beachside Village will contribute to increased State and County revenues in the form of increased property taxes, general excise taxes, and increased income taxes from increased employment. Should the State and County choose to allocate these additional tax revenues to fund more services to protect public health, welfare, and safety, any cost to the public that may result will be effectively minimized. Section 4.11 contains the full discussion.

1.7.3 Relationship to Land Use Policies

State Land Use Law, Chapter 205, Hawai'i Revised Statutes – The Property is currently in the State Urban and State Conservation Districts. 'O'oma Beachside Village, LLC has filed a petition with the State Land Use Commission to reclassify approximately 181.169 acres (the Petition Area) of the 'O'oma Beachside Village property from the State Conservation District to the State Urban District. This Petition Area includes approximately 179.355 acres of Parcel 4 and the 1.814-acre portion of the State ROW. Approximately 38.211 acres of Parcel 4 (consisting of the shoreline area and proposed coastal preserve) will remain in the Conservation District, and therefore are not included as part of the Petition Area. Section 5.1.2 contains the full discussion.

Coastal Zone Management Act, Chapter 205A, Hawai'i Revised Statutes – The Coastal Zone Management Area as defined in Chapter 205A, HRS, includes all the lands of the State. As such, the Property is within the Coastal Zone Management Area. Section 5.1.3 contains discussion of 'O'oma Beachside Village's compliance.

Hawai'i State Plan, Chapter 226, Hawai'i Revised Statutes – The *Hawai'i State Plan* (Chapter 226, HRS), establishes a set of goals, objectives, and policies that serve as long-range guidelines for the growth and development of the State. The creation of 'O'oma Beachside Village is relevant to many of the goals, objectives, and policies set forth by the Hawai'i State Plan. Section 5.1.4 contains the full discussion.

State Functional Plans – The *Hawai'i State Plan* directs State agencies to prepare functional plans for their respective program areas. There are 14 state functional plans that serve as the primary implementing vehicle for the goals, objectives, and policies of the Hawai'i State Plan. Section 5.1.5 contains discussion of 'O'oma Beachside Village's compliance.

County of Hawai'i General Plan – According to the *County of Hawai'i General Plan*, a portion of Parcel 4 is designated as "Open Space" and a portion is "Urban Expansion." The shoreline park, coastal (archaeological) preserve, greenway trails, and landscape buffers proposed on Parcel 4 are consistent and compatible with the "Open Space" designation. Parcel 22 is designated as "Urban Expansion," with a narrow strip of "Open Space" bordering the east end of the parcel along Queen Ka'ahumanu Highway. The State ROW is designated "Urban Expansion." The land uses proposed in for 'O'oma Beachside Village are consistent with the "Urban Expansion" designation and "Open Space" designation along the highway. Section 5.2.1 contains discussion of 'O'oma Beachside Village's compliance.

Kona Community Development Plan – The Kona CDP~~, when completed (presently in draft form and supported by the Kona CDP Steering Committee), will~~ is designed to translate the broad goals and policies of the *County of Hawai'i General Plan* into specific actions and priorities for specific geographic areas in the districts of North and South Kona. The Kona CDP ~~will~~ deals with all the elements included in the *General Plan* such as the economy, energy, environmental quality, flooding and other natural hazards, historic sites, natural beauty, natural resources and shoreline, housing, public facilities, public utilities, recreation, transportation, and land Use. 'O'oma Beachside Village is in alignment with Kona CDP goals and strategies that embody guiding principles relating to land use, transportation, housing, cultural resources, and infrastructure. Section 5.2.3 contains the full discussion.

County of Hawai'i Zoning – The existing Hawai'i County zoning for Parcels 4 and the State ROW is Open (O). The Hawai'i County zoning for Parcel 22 is General Industrial (MG-3a). The land uses proposed for Parcels 4, 22, and the State ROW are not consistent with the permitted uses of the O and MG-3a designations; therefore, a Change of Zone request will be submitted to the County of Hawai'i Planning Department to change the zoning to Project District (PD). Section 5.2.4 contains the full discussion.

1.7.4 Required Permits and Approvals

Permit/Approval	Responsible Agency	Status	Projected Submittal Date
State Land Use District Boundary Amendment	State Land Use Commission	Petition filed; processing on hold until EIS process completed.	First Quarter 2009
Conservation District Use Permit (Shoreline Park)	State Department of Land and Natural Resources	Application to be filed after the Zone Change, SMA, and Plan Approval application is approved.	2011
Conservation District Use Permit (maintenance)	State Department of Land and Natural Resources	Pending approval by DLNR	Submitted October 2008
Change of Zone	County Planning Department/County Council	Application to be filed assuming successful processing of SLUDBA.	Third Quarter 2009
Special Management Area Use Permit (Major)	County Planning Department/Planning Commission	Application to be filed assuming successful processing of SLUDBA.	Third Quarter 2009
Special Management Area Use Permit (Minor) (maintenance)	County Planning Department/Planning Commission	Submittal first Quarter 2009	First Quarter 2009
Subdivision Approval	County Planning Department	Application to be submitted after change the Zone Change, SMA application is approved.	Second Quarter 2010
FAA Form 7460-1 (Notice of Proposed Construction or Alteration)	Federal Aviation Administration	Application to be filed assuming successful processing of County applications.	2011
National Pollutant Discharge Elimination System (NPDES) Permit	State Department of Health	Application to be submitted prior to Building/Grading Permits.	2011
Plan Approval	County Planning Department	Application to be filed after the Zone Change, SMA, and Subdivision application is approved.	2011
Grading/Building Permits	County Department of Public Works	Application to be filed after the Zone Change, SMA, and Plan Approval application is approved.	2011
Approval for Wastewater Treatment Facility	State Department of Health	Application to be filed after the Zone Change, SMA, and Plan Approval application is approved.	2011
Well Construction/Pump Installation Permits	State Commission on Water Resource Management	Application to be filed after the Zone Change, SMA, and Plan Approval application is approved.	2011
Underground Injection Control Permit	State Department of Health	Application to be filed after the Zone Change, SMA, and Plan Approval application is approved.	2011
Permit to Perform Work within a State Right-of-Way	State Department of Transportation	Application to be filed after the Zone Change, SMA, and Plan Approval application is approved.	2011

1.7.5 Alternatives

The alternatives that have been considered are:

- No Action/Existing Zoning Alternative
- Resort/Hotel Development Alternative
- Golf Course with Residential Lots Alternative
- Residential Lot Subdivision Alternative
- More Affordable, Gap Group, and Workforce Housing Alternative
- Postponing Action Pending Further Study Alternative

See Chapter 6 for discussion of the alternatives.

1.7.6 Cumulative and Secondary Impacts

Cumulative and secondary impacts are impacts that may result from other reasonably foreseeable actions within the area, regardless of who initiates the action. To assess the cumulative and secondary impacts of ‘O‘oma Beachside Village in context with other proposed projects in the region, projects proposed on property currently within the State Urban District were used as the basis of reasonably anticipated development in the area.

Cumulative and secondary impacts resulting from these projects, along with the ‘O‘oma Beachside Village, are likely to include increased traffic and greater demands on public infrastructure systems and services Section 7.2 discusses cumulative and secondary impacts.

1.7.7 Rationale for Proceeding with ‘O‘oma Beachside Village Notwithstanding Unavoidable Effects

In light of the above-mentioned potential impacts, ‘O‘oma Beachside Village should proceed because adverse impacts can be mitigated and are offset by substantial positive factors, including:

- Compliance with the *County of Hawai‘i General Plan* (February 2005), which designates a large portion of the ‘O‘oma Beachside Village property for Urban Expansion.
- Substantial compliance with policies of the *Hawai‘i State Plan*, State Functional Plans, and the Coastal Zone Management Act.
- Consistency with the vision, principles, and goals of the Kona CDP.
- The provision of diverse housing opportunities makai of Queen Ka‘ahumanu Highway.
- The public benefit of dedicating the 18-acre public shoreline park area for public use.
- The wages, taxes, and overall positive economic impacts of ‘O‘oma Beachside Village.

1.7.8 Unresolved Issue

Water - ~~An on-site desalination plant is the preferred alternative for providing water to ‘O‘oma Beachside Village. ‘O‘oma Beachside Village, LLC is continuing to explore alternate sources of water including an off-site desalination plant with an off-site well and storage, or utilization of a conventional potable well system. ‘O‘oma Beachside Village, LLC will undertake additional research to assess the potential impacts and appropriate mitigation measures of the selected systems.~~

‘O‘oma Beachside Village, LLC’s preferred source of potable water for ‘O‘oma Beachside Village is an (on-site or off-site) desalination plant. If a desalination plant proves unfeasible, O‘oma Beachside Village will explore alternate sources of water including connection to the County of Hawai‘i potable water system, partnership with private water system owners, or utilization of independent wells. In providing a source of potable water for ‘O‘oma Beachside Village, ‘O‘oma Beachside Village, LLC will comply with all laws and regulations. As necessary, ‘O‘oma Beachside Village, LLC will undertake additional research to assess the potential impacts and appropriate mitigation measures of the selected systems.

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CHAPTER 2

ʻOʻOMA BEACHSIDE VILLAGE DESCRIPTION

2 ‘O‘OMA BEACHSIDE VILLAGE DESCRIPTION

This section includes background information, a general description of the proposed ‘O‘oma Beachside Village, the development timeframe, and preliminary development costs.

2.1 BACKGROUND INFORMATION

2.1.1 Location and Surrounding Uses

‘O‘oma Beachside Village will be located in ‘O‘oma 2nd, North Kona, Hawai‘i (see Figure 2). The Pacific Ocean borders the ‘O‘oma Beachside Village property (the Property) on the west (makai). The coastline is generally rugged, consisting of lava rocks with some sandy beach areas. Queen Ka‘ahumanu Highway borders the Property to the east (mauka).

The Natural Energy Laboratory of Hawai‘i Authority (NELHA) borders ‘O‘oma Beachside Village to the north. NELHA has attracted tenants that are engaged in research, education, and commercial activity that support sustainable industry development and make use of the deep seawater resources. Tenants include commercial entities such as Big Island Abalone Corporation, Uwajima Fisheries, Inc., Hawaiian Telcom, Moana Technologies, Inc., and water bottlers authorized to display “100% Hawai‘i Deep Seawater” and the NELHA logo on their products, verifying that their water is produced from 100% pure, deep seawater at NELHA on the Kona Coast of Hawai‘i. NELHA features a dual-temperature seawater system.

Research organizations at NELHA include University of California-Santa Cruz, University of Hawai‘i-Infrasound Laboratory of Hawai‘i, and The Oceanic Institute. Educational institutions include the West Hawai‘i Explorations Academy (a Public Charter School), Hawaiian Islands Humpback Whale National Marine Sanctuary, and the University of Hawai‘i-Sea Grant Extension Service (NELHA 2006).

Further north, beyond NELHA, is the Kona International Airport at Keāhole, which occupies 3,450 acres of land, has an 11,000-foot runway, and facilities that accommodate domestic overseas, international, interisland, commuter/air taxi, and general aviation activities (DOT 2006).

East of NELHA, mauka of Queen Ka‘ahumanu Highway, is the Keāhole Agricultural Park. This 179-acre agricultural park consists of 34 lots. The State of Hawai‘i provides leases of agricultural land at this park to small farmers at reasonable cost for long-term tenure. Other uses mauka of Queen Ka‘ahumanu Highway include Kaloko and Kohanaiki Industrial Parks to the south.

Directly east of the Property, mauka of Queen Ka‘ahumanu Highway, is State-owned land previously considered as a possible site for a new State Kona Civic Center as part of a Site Selection Study/EIS published in 1994. However, since the 1994 State Kona Civic Center site selection study/EIS, development plans for the State Kona Civic Center have stalled. The Department of Accounting and General Services (DAGS) is pursuing a revised site selection study for the proposed State Kona Civic Center that may or may not include the neighboring parcel examined in the 1994 study.

Bordering the proposed 'O'oma Beachside Village to the south is a luxury residential golf-course community called The Shores at Kohanaiki. This development, under construction since September 2005, will include 500 homes. There will be a golf course and clubhouse, tennis courts, and workout facilities. A proposed shoreline park will include parking, an 8,000-square foot beach facility ~~with snack bar~~, restrooms, and showers.[1]

Further south, approximately 0.5 miles away from the 'O'oma Beachside Village site, is the Kaloko-Honokōhau National Historical Park (National Historical Park) operated by the National Park Service (NPS). The National Historical Park is a 1,160-acre national historical landmark with extensive natural and cultural resources, including archaeological sites, and anchialine ponds. Mauka of the National Historical Park are the Kaloko and Kohanaiki Industrial Parks. South of the National Historical Park is the Honokōhau Small Boat Harbor, operated by the State Department of Land and Natural Resources, Division of Boating and Ocean Recreation.

2.1.2 Land Ownership

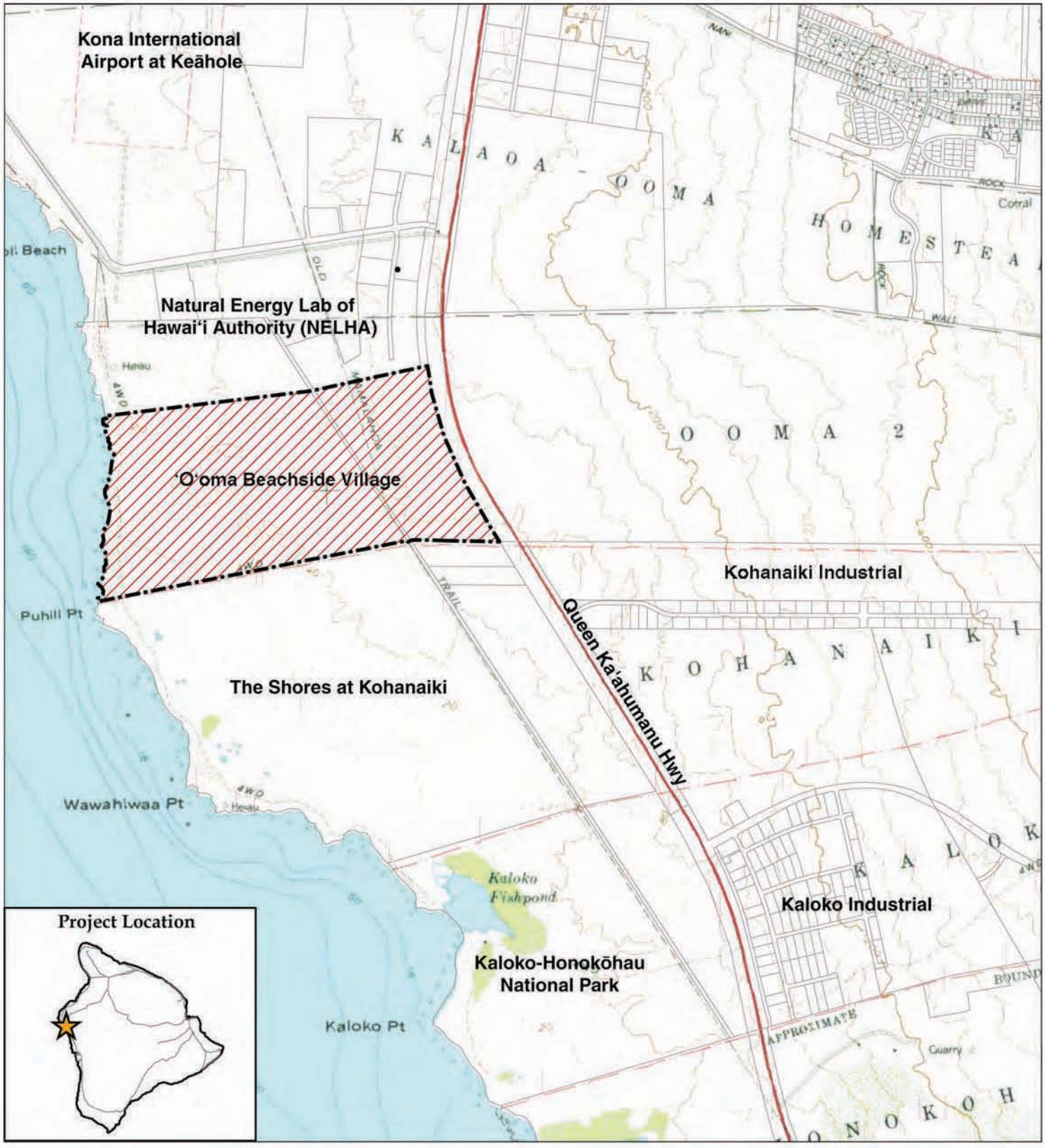
The 302.38-acre 'O'oma Beachside Village property (the Property) is comprised of a:

- 217.566-acre parcel identified by TMK (3)7-3-009:004 (Parcel 4).
- 83-acre parcel identified by TMK (3)7-3-009:022 (Parcel 22).
- 1.814-acre portion of the State-owned Right-of-Way (ROW) located on by TMK (3)7-3-009: (State ROW).

'O'oma Beachside Village, LLC is the recorded fee owner of Parcels 4 and 22 (see Figure 3).

The State of Hawai'i is the fee owner of the State ROW, erroneously referred to on survey maps as "King's Highway," which is located between Parcels 4 and 22 and extends north-south, paralleling Queen Ka'ahumanu Highway. At the southern boundary of the Property, the State ROW and the Māmalahoa Trail share the same alignment; however, approximately one-third of the way into the Property, the two separate, with the historic Māmalahoa Trail veering slightly mauka and evidencing a usable path; however ~~an~~d the State ROW does not veer mauka, but continues in a straight line coming to a dead end north of 'O'oma Beachside Village (see Figure 3). The State ROW serves no practical purpose once it leaves the Māmalahoa Trail alignment, and ~~It~~ it is understood that the portion of the State ROW not aligned with the Māmalahoa Trail is the result of a mapping error. Physical inspection of the property reveals that there is no separate ROW on the ground. Both the State ROW and Māmalahoa Trail are under the jurisdiction of the State Department of Land and Natural Resources (DLNR). DLNR Na Ala Hele recognizes that only one trail can be located physically on the ground today and recommends that the Māmalahoa Trail be protected and preserved. 'O'oma Beachside Village, LLC has obtained State authorization to include the State ROW and the Māmalahoa Trail in its State Land Use petition and County zoning application.

[1] Command, B. (September 11, 2003) "Kohanaiki deal revealed." West Hawaii Today.



Legend

'O'oma Beachside Village

FIGURE 2
Regional Location Map

'O'oma Beachside Village

'O'oma Beachside Village, LLC — ISLAND OF HAWAI'I

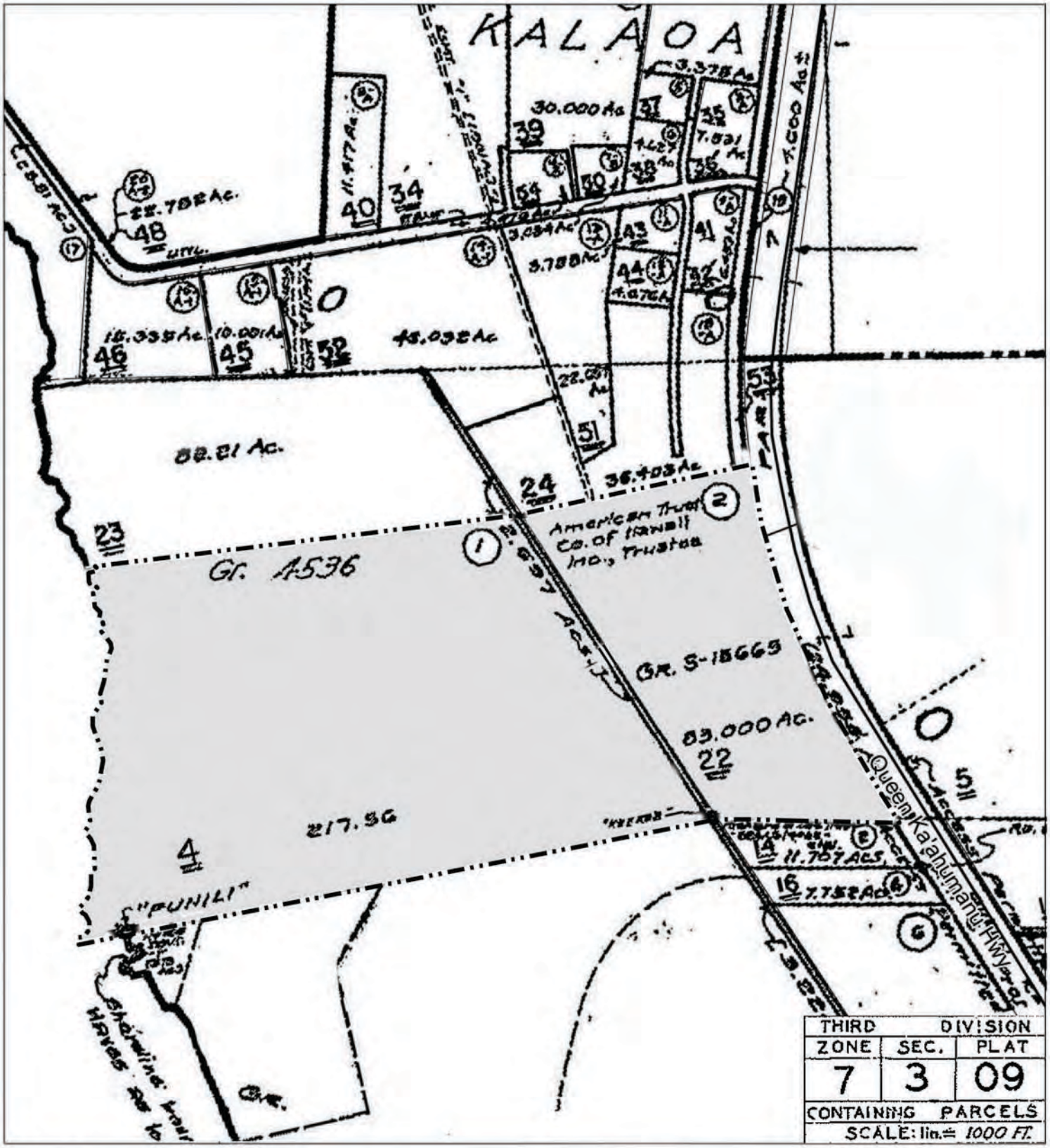
NORTH

LINEAR SCALE (FEET)
0 500 1,000 2,000 4,000

PBR HAWAII & ASSOCIATES, INC.

Source: U.S. Geological Survey

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



Legend

'O'oma Beachside Village

FIGURE 3
Tax Map Key

'O'oma Beachside Village

'O'oma Beachside Village, LLC — ISLAND OF HAWAI'I

NORTH

LINEAR SCALE (FEET)

0 250 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.

Source: Tax Map Key (Zone 7, Sec.3, Plot 09)
Disclaimer: This graphic has been prepared for general planning purposes.

2.1.3 Property Description

The Property is approximately 302.38 acres and is currently vacant and undeveloped. The area consists of lava rock covered with sparse vegetation that includes fountain grass, kiawe trees, noni plants, and maiapilo. Figure 4 contains site photographs.

The elevation of the Property ranges from sea level at the western boundary to 110 feet above mean sea level at the eastern boundary. Average slopes on the Property range from 0 to 5 percent.

The western portion of the Property includes the shoreline area contiguous to Wāwāloli Beach, which is open to the public. There are no streams on-site. Mauka of the coastal vegetation, there is a small area of sedimented anchialine ponds.

In the eastern portion of the Property, extending north-south, paralleling Queen Ka'ahumanu Highway is a portion of the historic Māmalahoa Trail and the State ROW, which are coterminous at the southern portion of the Property, until the Māmalahoa Trail veers mauka and continues northward while the State ROW dead-ends north of the Property. The State ROW, referred to on survey maps as "King's Highway," is the result of mapping errors, as the original intent ~~was~~ appears to have been for the State ROW and the Māmalahoa Trail to be coterminous.

The current land use designations of the Property are as follows:

- State District: Conservation and Urban (Figure 5)
- Conservation District: General and Resource Subzone (Figure 6)
- General Plan: Open and Urban Expansion (Figure 7)
- County Zoning: Open and General Industrial (Figure 8)
- Special Management Area (SMA): Within the SMA (Figure 9)

Parcel 22 – The 83 acres of Parcel 22 were reclassified to the State Urban District by Land Use Commission Decision and Order dated February 6, 1986, in Docket No. A85-592. The original Petitioner in Docket A85-592 was the State of Hawai'i through the Department of Planning and Economic Development (DPED). DPED had proposed to develop a research and technology industrial park on the reclassified parcel. 'O'oma Beachside Village, LLC, intends to file a Motion to Amend the Conditions in that Decision and Order to conform to its residential, mixed use development plans for 'O'oma Beachside Village.

Parcel 4 and State ROW (the Petition Area) – A State Land Use District Boundary Amendment (SLUDBA) is being sought to reclassify approximately 181.169 acres (the Petition Area) of the 'O'oma Beachside Village property from the State Conservation District to the State Urban District (see Figure 10). This Petition Area includes approximately 179.355 acres of Parcel 4 and the 1.814-acre portion of the State ROW. Approximately 38.211 acres of Parcel 4 (consisting of the shoreline area and proposed coastal preserve) will remain in the Conservation District, and therefore are not included as part of the Petition Area.

2.1.4 Overview of the Region

The ahupua'a of 'O'oma (historically known as 'O'oma 1st and 2nd) is one of approximately 20 ahupua'a, which made up the region of Kona known as 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 (Rechtman & Maly 2007).

The ahupua'a of 'O'oma crosses several environmental zones, which include the near-shore fisheries and shoreline strand (kahakai) and the kula kai/kula uka (shoreward/inland plains). Historically, the majority of residences were located in the upland areas of the ahupua'a.

2.1.5 History of the Property

Today, the Property remains vacant, although previous plans for development of the Property have been proposed. In 1986, Kahala Capital Corporation (KCC) sought to have Parcel 4 (at that time consisting of approximately 313.66 acres) reclassified to the State Urban District in order to develop a project consisting of a 600-room hotel, 300 condominium units, 18-hole golf course, office park, ocean theme park and ocean science center. The State Land Use Commission denied KCC's request for reclassification.

In 1991, KCC again sought State Land Use reclassification for Parcel 4, which then consisted of 217.566 acres. KCC's 1991 proposed project was to be developed on both Parcels 4 and 22 and would have consisted of a marine exploratorium, water recreation park, conference center, 18-hole golf course with clubhouse and 50 to 60 room inn, 70 to 100 residential lots, 130 to 230 condominiums, a small retail center and 500-room oceanfront hotel. The proposed development met with strong community opposition and the Land Use Commission denied KCC's request for reclassification. KCC appealed the LUC's decision to the Third Circuit Court of the State of Hawai'i which, in 1994, affirmed the LUC's decision.

In 2003, Clifto's Kona Coast proposed a 400,000-square-foot regional shopping center, 400 transient accommodations, and 240 multi-family units to be developed on Parcel 22 (which is State Urban District and County-zoned General Industrial). Although originally approved by the County Council for re-zoning, this project was vetoed by the Mayor.

In 2005, 'O'oma Beachside Village, LLC, began to develop the vision for 'O'oma Beachside Village which is described in this EIS.

2.2 STATEMENT OF PURPOSE AND NEED

In ~~January~~ September 2008, the median sales price of a single-family home in Hawai'i County was $285,000 ~~$330,000~~; however, the median sales price of a single-family home in the North Kona/South Kohala area was $516,000 ~~$595,000~~ (Hawai'i Island Board of Realtors 2008). As the North Kona economy continues to grow, there will be an ever increasing supply of new jobs, requiring new employees and therefore more local workforce housing. Many workers in North

Coastal preserve area/shoreline park area with NELHA facilities beyond.

View from coastal bluff.

Shoreline area.

Shoreline area.

Archaeological resources.

Mamalahoa Trail.

View toward NELHA.

Existing jeep road.
(From Queen Ka'ahumanu Hwy)

FIGURE 4
Site Photographs
'O'oma Beachside Village
'O'oma Beachside Village, LLC
ISLAND OF HAWAI'I

Photos Taken 11-20-06

PBR HAWAII & ASSOCIATES, INC.

Legend

'O'oma Project Boundary

State Land Use District

Conservation

Urban

FIGURE 5

State Land Use District

'O'oma Beachside Village

'O'oma Beachside Village, LLC

ISLAND OF HAWAI'I

NORTH

LINEAR SCALE (FEET)

0 250 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.

Source: State Land Use Commission 2006 (State of Hawai'i GIS Database)

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

Legend

'O'oma Project Boundary

Conservation District Subzones

Outside Conservation Zone

General Subzone

Resource Subzone

Source: State of Hawai'i GIS Database

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

FIGURE 6
Conservation District Subzones

'O'oma Beachside Village

'O`oma Beachside Village, LLC

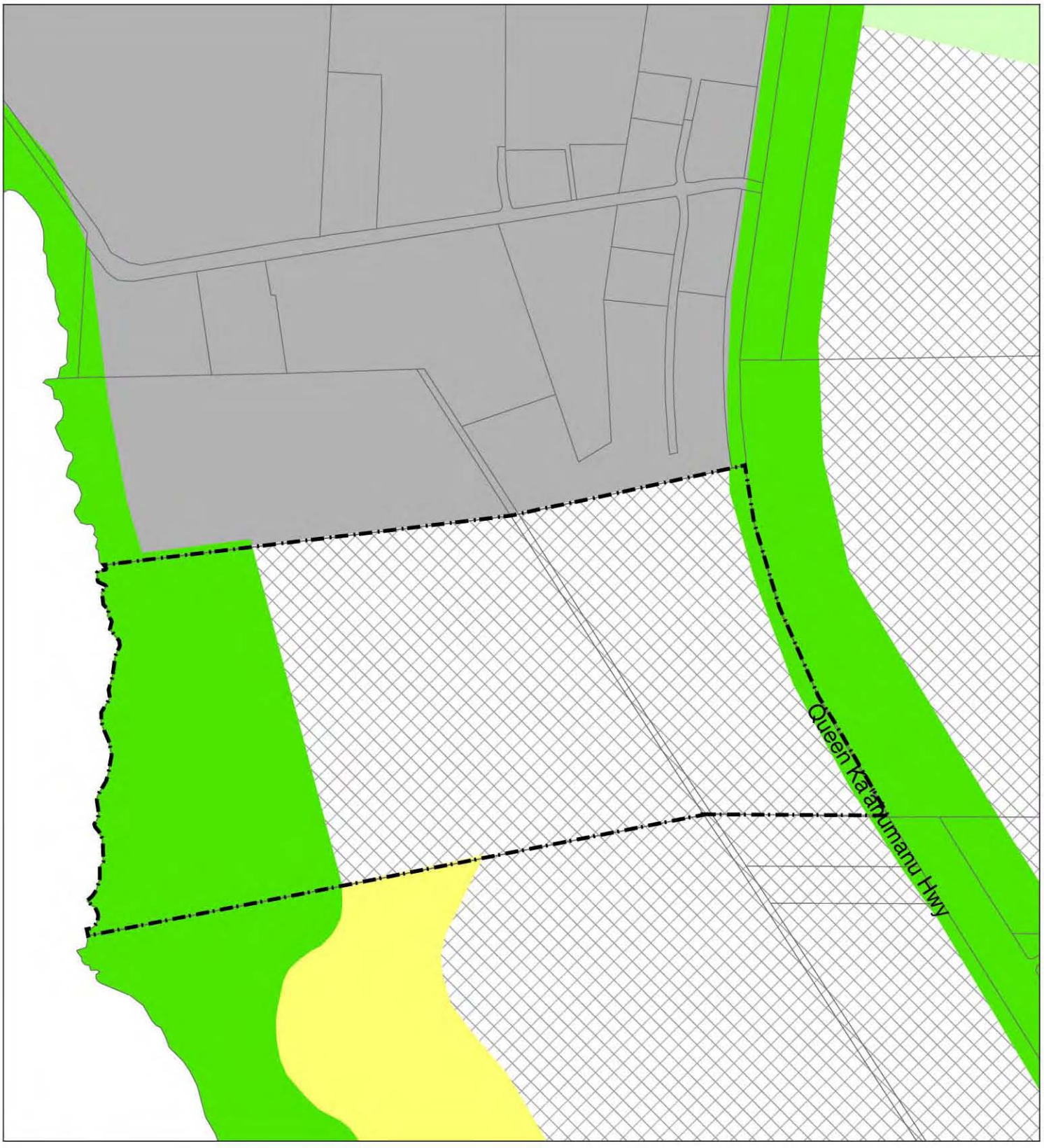
ISLAND OF HAWAI'I

NORTH

LINEAR SCALE (FEET)

0 250 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.



Legend

- 'O'oma Project Boundary
- Important Ag Lands
- Industrial
- Low Density Urban
- Open
- Urban Expansion

FIGURE 7
County of Hawai'i General Plan 2005

'O'oma Beachside Village

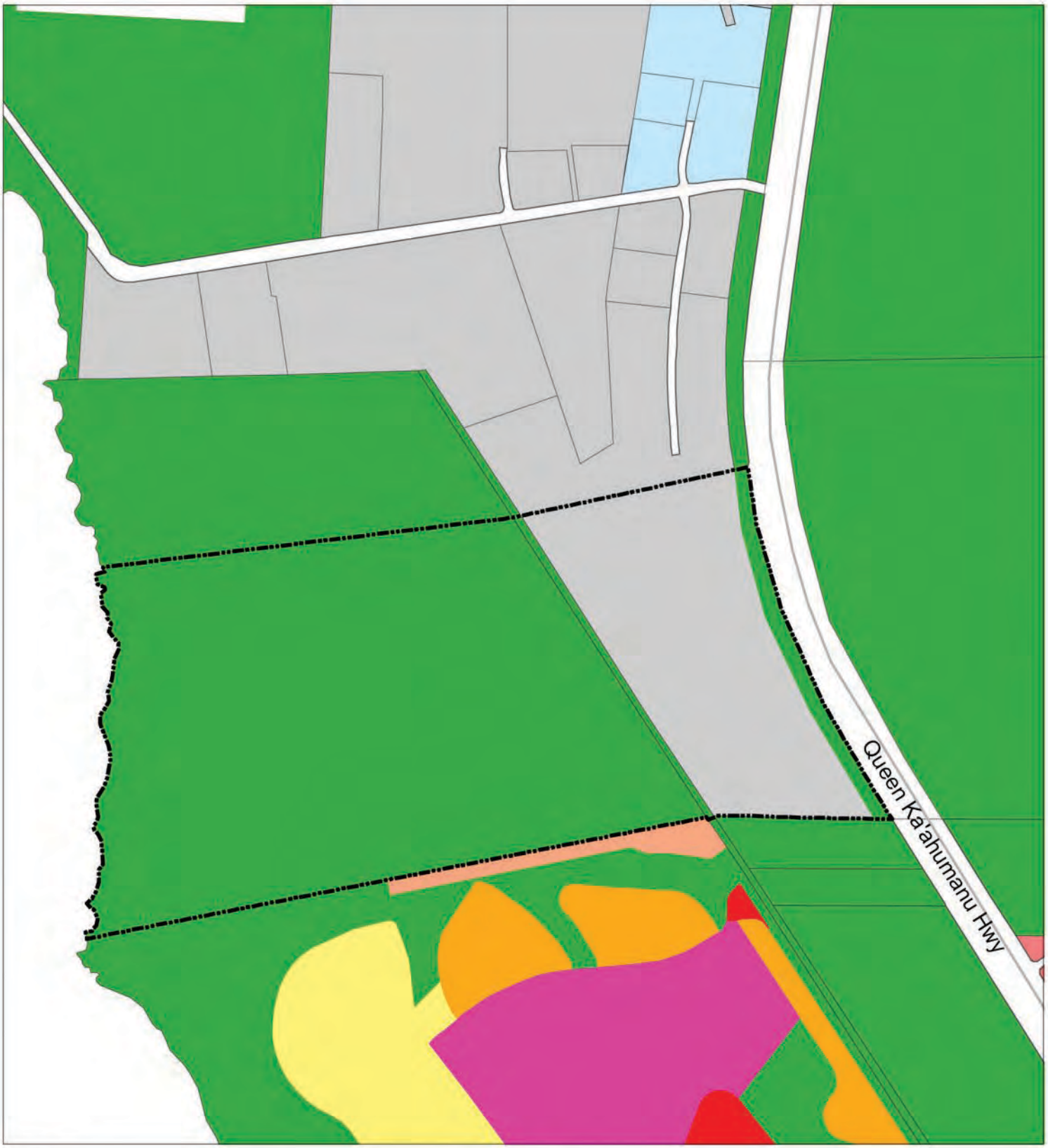
'O'oma Beachside Village, LLC — ISLAND OF HAWAI'I

NORTH

LINEAR SCALE (FEET)
0 250 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.

County of Hawai'i General Plan 2005 (State of Hawai'i GIS Database)
Disclaimer: This graphic has been prepared for general planning purposes only.



Legend

'O'oma Beachside Village
Road

Commercial
CV-10
CV-20

Industrial
MG-3a
ML-10
ML-3a
OPEN

Residential
RM-3
RS-10

Resort
V-1.25

FIGURE 8
County of Hawai'i Zoning

'O'oma Beachside Village

'O'oma Beachside Village, LLC — ISLAND OF HAWAI'I

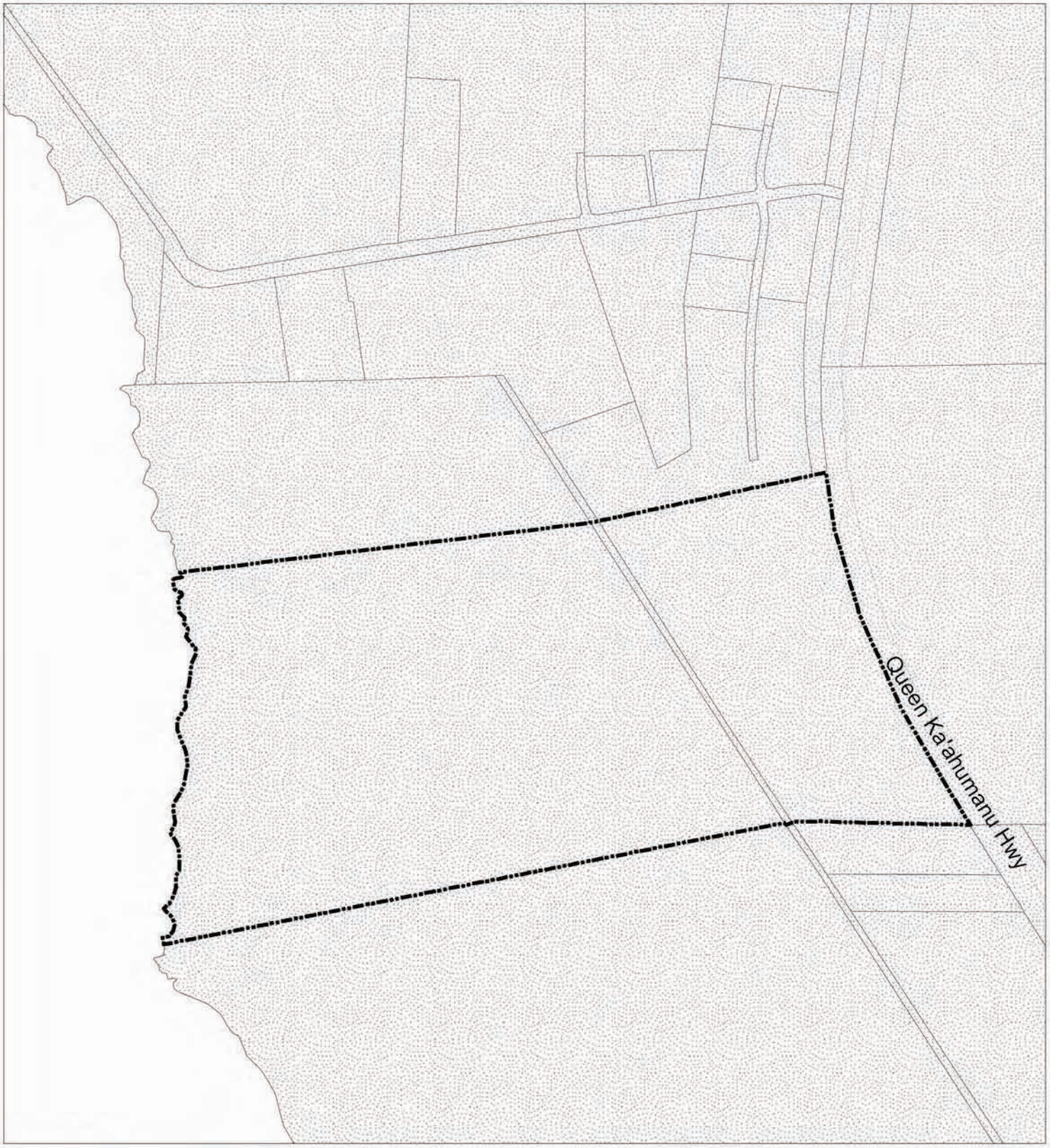
NORTH

LINEAR SCALE (FEET)
0 250 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.

Source: County of Hawai'i Zoning (State GIS Database)

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



Legend

'O'oma Beachside Village

Special Management Area

FIGURE 9

Special Management Area

'O'oma Beachside Village

'O'oma Beachside Village, LLC

ISLAND OF HAWAI'I

NORTH

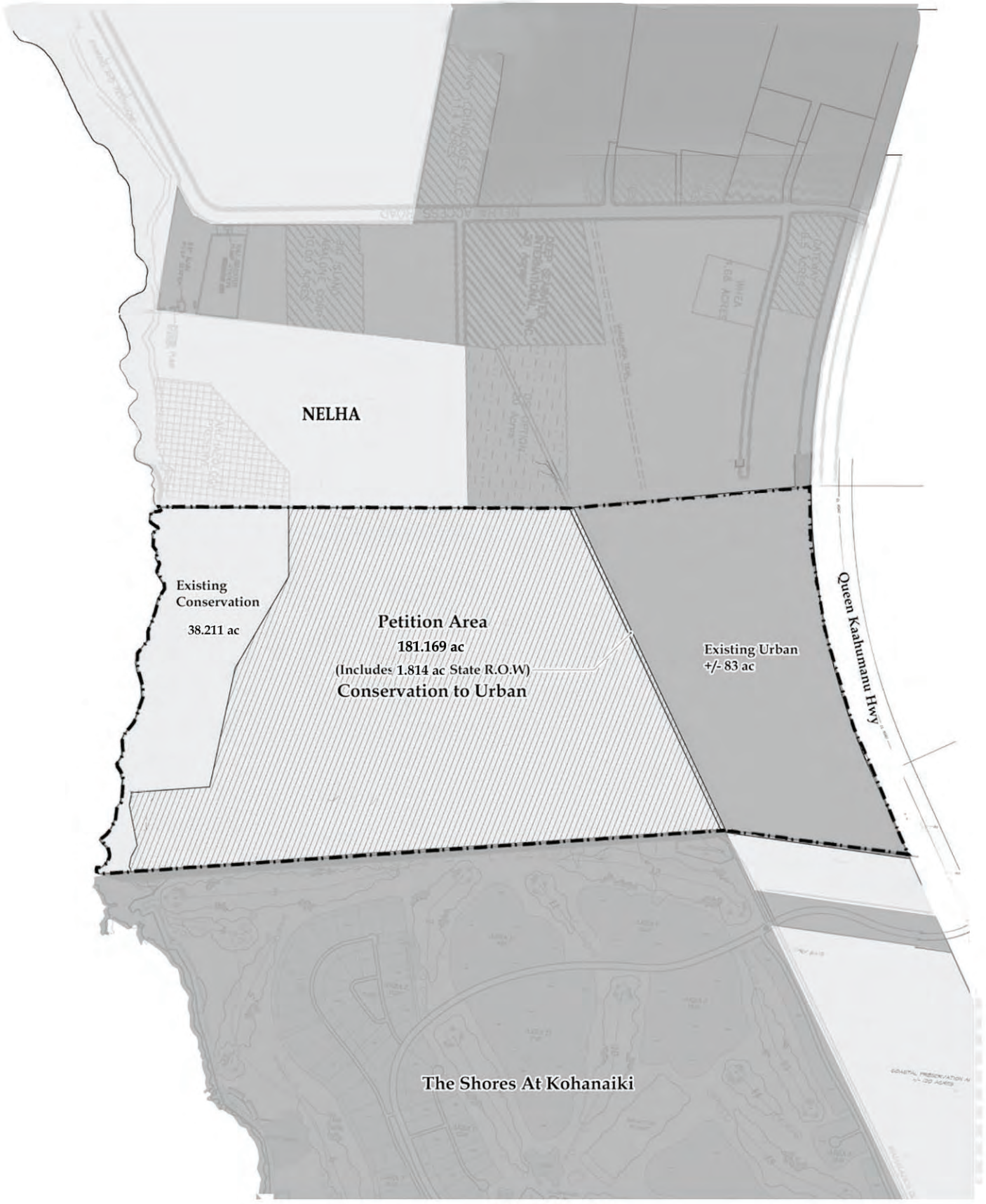
LINEAR SCALE (FEET)

0 250 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.

Source: SMA County of Hawai'i GIS 2006

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



Legend

- `O`oma Beachside Village
- `O`oma Petition Area (Conservation to Urban)
- Existing Conservation
- Existing Urban

FIGURE 10

Petition Area

'O'oma Beachside Village

'O'oma Beachside Village, LLC — ISLAND OF HAWAI'I

NORTH

LINEAR SCALE (FEET)

0 250 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.

Kona currently commute from areas outside of North Kona because high housing prices in North Kona prevent them from living close to work.

Because many homes in West Hawai‘i are being marketed to, and bought by, non-Kona residents as vacation, part-time, and retirement homes, working kama‘āina are often squeezed out of the local housing market. The residential component of the proposed ‘O‘oma Beachside Village responds to North Kona’s strong need for a broad spectrum of affordability in housing, including market, workforce, gap group, and affordable housing opportunities with a wide range of housing alternatives. ‘O‘oma Beachside Village is unique from other developments because even though it is located makai of Queen Ka‘ahumanu Highway, an area ~~often reserved for~~ with many resort developments (such as at the neighboring Shores at Kohanaiki development), it offers a wide range of housing choices, focused on the primary resident market.

In the *County of Hawai‘i General Plan* (2005), the ‘O‘oma Beachside Village site is designated for “Urban Expansion,” with a sliver of “Open Space” along the shoreline. ‘O‘oma Beachside Village abuts other State Urban-designated lands, and is within the *General Plan*’s planned path of urban expansion near existing and growing centers of employment. ‘O‘oma Beachside Village, on Queen Ka‘ahumanu Highway, one mile south of the Kona International Airport at Keāhole, is ideally located to provide housing, recreation, service, and retail shopping opportunities to businesses and residents in the region.

North Kona, together with the coastal portion of South Kohala, was estimated to provide 21 percent of the Island’s employment in 2006. However, currently only 12 percent of the Island’s population can be housed in these areas, resulting in household crowding, and a tremendous amount of commuting into the region by persons who live in distant areas (Mikiko Corp. 2007). A relative lack of resident-oriented shopping, entertainment, and other services in the South Kohala-Waikoloa area also adds to traffic headed into the Kailua-Kona area from the north.

‘O‘oma Beachside Village will respond to the demands presented by the growing population in the North Kona region, as well as existing and future full-time area residents’ demands for a variety of housing alternatives and price ranges. ‘O‘oma Beachside Village is among a relatively small group of area properties that could offer a solution for this imbalance of primary resident-oriented housing, services, and the area’s existing and anticipated jobs base.

2.2.1 Statement of Objectives

The objectives of ‘O‘oma Beachside Village are rooted in ‘O‘oma Beachside Village, LLC’s desire to create an attractive master-planned beachside residential community with a variety of housing opportunities and mixed uses, as well as abundant recreational resources. ‘O‘oma Beachside Village will provide housing and work opportunities for Island residents, helping to fulfill the primary residential needs of the region, and also enabling local residents to benefit from an improved quality of life associated with residing in the shoreline community.

The vision for ‘O‘oma Beachside Village is that of a sustainable community, one that does not deplete resources, but that works in harmony with nature. ‘O‘oma Beachside Village is designed

to be a self-contained walkable community with an array of services and facilities to enable residents to meet many of their daily needs without using cars.

Information gathered from community meetings and consultation indicates that ‘O‘oma Beachside Village should include mixed uses, where commercial and residential uses come together to create a working sustainable community. There should be open spaces with hiking and bike trails, a pedestrian friendly neighborhood environment, restaurants with outdoor seating, offices and residences above shops, access to the beach/ocean, and community gathering places for the preservation of local history and cultural events.

As a mixed-use community, the objectives of ‘O‘oma Beachside Village are to:

- Create a complete and vibrant community of mixed uses, such as homes, retail-commercial spaces, recreation areas, and open space.
- Foster a Hawaiian sense of place, respect the land, and provide a vital and sustaining life experience.
- Provide housing for working families of Hawai‘i.
- Provide homes near workplaces, thereby increasing quality of life through decreasing commuting.
- Include a mix of uses and housing types that embrace a diversity of people and activities.
- Contribute to the social infrastructure by including a school site, parks, and other public facilities.
- Incorporate sustainability by design.
- Preserve shoreline open space and provide parks and open space throughout the community.
- Encourage alternative modes of travel, other than cars, to travel through the community.

Traditional Neighborhood Design – ‘O‘oma Beachside Village will be guided by Traditional Neighborhood Design (TND), which is a design philosophy that revisits the past by understanding the way traditional communities were built. Examples of traditional settlements in Hawaii that served as inspiration for ‘O‘oma Beachside Village include downtown Hilo, Lanai City, and Wailuku. TND represents compact, mixed-use neighborhoods where residential, commercial, and civic buildings are within close proximity to each other. It is a planning concept that is based on traditional small town development principles, in part, a reaction to the often inefficient use of land and infrastructure and lack of a sense of community in many newer developments.

TND communities are an alternative to conventional suburban sprawl, and have been well received and enthusiastically embraced in many areas as a way to restore a sense of place, create vibrant communities, preserve open space and reduce congestion. Three principles of TND communities on which ‘O‘oma Beachside Village was based are explained below.

- **The Region and Community –** The region is the overall context for all planning. Communities within a region need a comprehensive strategy to prosper. Each community should have both homes—for people of all incomes—and nearby jobs, so residents are not forced to travel too far to work. Each community also needs a discrete sense of place.

Communities within a region should have clear boundaries, contributing to a sense of place. The land between communities should be preserved as open space.

Town centers, individual neighborhoods, and community edges each have their own building densities, street sizes, and appropriate mixtures of retail, residential, and other functions. The highest densities and most intense mix of uses are typically found in town centers/village cores; lower densities are found at the edge. The compact development in the town center allows for preservation of more open space along the edges, increasing quality of life for all residents.

'O'oma Beachside Village incorporates TND concepts in the following ways:

- It will be a diverse coastal residential community, designed as a walkable, interconnected, environmentally-conscious, mixed-use community with diverse housing options.

- Situated north of Kailua-Kona, the 'O'oma mixed-use villages will provide commercial and business services to support the 'O'oma Beachside Village community and thus reduce the number of car trips required to Kailua-Kona.

- 'O'oma Beachside Village is situated and designated in the *County of Hawai'i General Plan* as an urban expansion area.

- Approximately 103-acres (34 percent of the total Property) will consist of open space, including a community park recreation area, neighborhood parks, shoreline park, preserves, and buffer zones.

- Of those 103 acres, 75 acres of public coastal open space and coastal preserve (18-acres as a public shoreline park, community pavilion, and 57-acres designated as a coastal preserve) will be provided and located approximately 1,100 to 2,000 feet setback from the shoreline.

- Although access is permitted from Queen Ka'ahumanu Highway, coordination and planning are underway for <u>O'oma Beachside Village, LLC to build its portion of</u> a transit corridor/frontage connector road providing another roadway link between Kailua-Kona and the Airport.

- **The Neighborhood, the District, and the Corridor –** Diverse, walkable neighborhoods are what distinguish TND communities from other development styles. The optimal size of a community neighborhood is a quarter-mile from center to edge. Most people will walk a distance of approximately a quarter-mile before turning back or opting to drive or bicycle instead of walking. This dimension is consistent in the way people have created settlements for centuries. For a neighborhood to feel walkable, many daily needs should be supplied within this five-minute walk. That includes not only homes, but stores, workplaces, schools, places of worship, and recreational areas.

Traditionally, neighborhoods have a mix of uses and types of buildings. A variety of building types allows for diverse lifestyle options and incomes to live in the same neighborhood. For example, in a shopfront building, the business owner can live above his or her shop, or rent the upper floor as an office or apartment.

'O'oma Beachside Village provides the following:

- Wide range of housing choices, including single-family homes, live-work units, multi-family dwellings and custom home sites in a broad spectrum of affordability, including market, workforce/gap and affordable.

- The mixed-use villages will be walkable, pedestrian-friendly commercial areas. Buildings along the "main street" will primarily contain commercial uses on the ground floor, and may contain commercial uses, offices, or residences on upper floors.

- The charter school site, which is adjacent to the Mauka Mixed-Use Village and the community park, was selected so that the school would be conveniently located within 'O'oma Beachside Village and able to share the recreational facilities within the Community Park.

- **The Block, the Street, and the Building –** In TND communities, neighborhoods have a network of streets designed so that pedestrians, bicyclists, and motorists can move safely and comfortably through the neighborhood. Multiple options for travel through the street network allow traffic to disperse through the neighborhood, avoiding traffic problems on one particular street.

  To make streets feel safe, buildings must be oriented with doors, windows, and front porches facing the street, creating natural surveillance for pedestrian activity by the building occupants. On-street parking and street trees, located between the sidewalk and moving vehicular lanes, provide a layer of comfort for pedestrians. The street configurations will provide a high-caliber experience for pedestrians and will accommodate all other modes of non-vehicular travel.

  'O'oma Beachside Village provides the following:

  - A network of interconnected streets which will disperse internal vehicular traffic throughout the community and connect residential areas to the mixed-use villages.

  - A second circulation system of linked pedestrian/bike trails which will provide another option for traveling throughout the community (mauka-makai and lateral).

  - A commitment to participate with State and County agencies in the proposed regional frontage road improvements and a commitment to pursue designation of a transit station on-site.

2.3 ‘O‘OMA BEACHSIDE VILLAGE DESCRIPTION

The proposed ‘O‘oma Beachside Village will be a master-planned residential community with a full range of mixed uses including housing, mixed-use commercial, preserves, parks, trails, and shoreline access (Figure 1). The proposed community will also include supporting infrastructure such as a wastewater treatment plant, water system, and power and communications systems.

In total, there will be 950 to 1,200 homes, which will include multi-family units, “live-work” or mixed-use homes, workforce, gap group, and affordable homes, and single-family home lots. With the exception of the shoreline park facilities, the entire ‘O‘oma Beachside Village community will be located outside of the shoreline setback and coastal preserves area; with all structures set back at least 1,000 feet.

All of the homes will have direct or easy access to pedestrian/bike pathways that will connect to the shoreline and various neighborhoods, parks, and villages. There will be a Residential Village, a Mauka Mixed-Use Village, and a Makai Mixed-Use Village. A range of affordable homes will be provided, as well as neighborhood shops, a grocery store, restaurants, offices, and other businesses to serve the residents. All commercial uses will be located within the Mauka and Makai Mixed-Use Villages. These businesses and other elements, such as parks, trails, civic uses, and the school, are critical to make ‘O‘oma Beachside Village a real, vibrant community with essential services for residents within walking distance.

This traditional neighborhood design, with stores and services as an integral part of the community, will help to minimize car trips onto Queen Ka‘ahumanu Highway since many establishments providing for residents’ day-to-day needs will be within walking and biking distance. Therefore, unlike residents in conventional residential subdivisions, ‘O‘oma Beachside Village residents will not need to drive outside of the community for many of their daily needs.

Many residents of ‘O‘oma Beachside Village will enjoy an increased quality of life by living close to work. They will decrease time lost during a daily commute, decrease traffic congestion, lessen automotive pollution, and enjoy reduced stress and more family and recreation time.

‘O‘oma Beachside Village is characterized by three distinct areas: the Residential Village, the Mauka Mixed-Use Village, and the Makai Mixed-Use Village. Approximately 34 percent of the Property will be designated as open space in the form of parks, preserves, and landscape buffers. Table 1 provides a land use summary.

2.3.1 Residential Village

Proposed on approximately 127 acres of the Property are 520 to 620 single-family and multi-family residential homes. All homes will have direct or easy access to the pedestrian/bike community trail system that will connect to the shoreline and various neighborhoods, parks, and mixed-use villages.

Table 1. Land Use Summary

Project Area	Land Uses	Approx. Acreage	Approx. Units
Residential Village	Multi- & Single-family Residential	127	520-620
	Parks & Māmalahoa Trail / Buffer	19	-
	Wastewater Treatment Plant	2	-
Mauka Mixed-Use Village	Mixed-Use Commercial & Multi-family Residential	53	395-520
	Charter School	3	-
	Highway Open Space Buffer	9	-
Makai Mixed-Use Village	Mixed-Use Commercial & Multi-family Residential	13	35-60
	Canoe Club	2	-
Coastal Preserve & Shoreline Park	Coastal Preserve / Open Space	57	-
	Shoreline Park	18	-
	Total	**303**	**950-1,200**

Single-family residential lots would range from 5,000 to 15,000 square feet. Approximately 70 to 85 would be "Estate" lots (9,000 to 15,000 square feet), which would be located along the perimeter of the community. Other residential lots (5,000 to 6,000 square feet) are planned to be developed with finished homes, and would comprise the majority of the residential village offerings, approximately 350 to 400 homes.

Multi-family residential areas will be scattered throughout the Residential Village. The density of the multi-family residential areas is estimated to be 9 to 12 units per acre, resulting in approximately 100 to 135 units. No commercial uses are planned for the multi-family residential areas within the Residential Village.

2.3.2 Mauka Mixed-Use Village

The Mauka Mixed-Use Village, encompassing approximately 65 acres, will be located within Parcel 22 (within the existing State Urban District), adjacent to Queen Ka'ahumanu Highway. This Village will include a walkable, pedestrian-friendly commercial area along a frontage road, or "main street" and charter school site.

The Mauka Mixed-Use Village combines commercial and residential uses within a pedestrian-oriented town center. The village emphasizes pedestrian activity but is auto accessible and has a large mix of housing, commercial, and retail uses.

A main objective of planning for the Mauka Mixed-use Village is to provide convenient commercial and business services to support the overall 'O'oma Beachside Village community and thus reduce the number of car trips to Kailua-Kona. The Mixed-Use Village provides a good location for affordable and workforce housing, and will reduce the need for some residents to commute outside of the community to get to work.

The mixed-use village concept provides opportunities for local businesses and live-work units within multi-family buildings. Live-work units allow business owners to live and work in the same place and therefore decrease the need for commuting and automobile reliance.

The Mauka Mixed-Use Village will include 395 to 520 multi-family residential units and up to 150,000 square feet for commercial/retail space. Buildings along the "main street" will primarily contain commercial uses on the ground floor, and may contain commercial uses, office, or residences on upper floors. Examples of commercial uses include general stores, restaurants, bakeries, professional offices, drugstores, and other neighborhood-serving uses.

The charter school site is within the Mauka Mixed-Use Village and adjacent to the proposed community park. The school site is conveniently located so that the school may share the recreational facilities of the community park. Having a school within 'O'oma Beachside Village will allow residents' school-age children to walk to school, reducing trips on Queen Ka'ahumanu Highway.

2.3.3 Makai Mixed-Use Village

A smaller, Makai Mixed-Use Village is located on the gentle bluff overlooking the coastal preserve and shoreline park. This Mixed-Use Village is planned to include up to 50,000 square feet of commercial space, including restaurants and retail uses. The Makai Mixed-Use Village is estimated to have 35 to 60 multi-family residential units mixed with commercial uses on 13 acres. The Makai Mixed-Use Village will be set back a minimum of approximately 1,100 feet from the shoreline.

Located on two acres adjacent to the Makai Mixed-Use Village, the 'O'oma Canoe Club will be developed as a membership leisure club open to residents of 'O'oma Beachside Village. The 'O'oma Canoe Club will provide social activities, programs, bar/lounge and dining facilities, ocean equipment storage areas, and other amenities for its members.

2.3.4 Open Space

Approximately 103 acres (34 percent of the total project area) will comprise open space, which includes a community park recreation area, neighborhood pocket parks, shoreline park, coastal preserves, trails, and buffer zones.

Coastal Open Space - 'O'oma Beachside Village project will be setback approximately 1,100 to 2,000 feet from the shoreline. Approximately 75 acres of public coastal open space and coastal preserve (18-acres as a public shoreline park with community pavilion and 57 acres designated as a coastal preserve) will be set aside along the ocean frontage.

Temporary landscaping improvements are proposed on the site in advance of the creation of 'O'oma Beachside Village to preserve public safety and protect beach resources from erosion caused by vehicles driving onto the sand. The landscaping will involve trimming and thinning vegetation and temporarily placing boulders to block vehicular access onto the sand. Two

warning signs will also be installed at each end of the jeep road. The new warning signs will address issues of vehicular traffic and pedestrian safety.

Public Shoreline Park & Community Pavilion – The 18 acres along the shoreline will be designated as a public shoreline park, and will be an extension of the beach parks planned at The Shores at Kohanaiki and NELHA. The shoreline park will include parking, comfort station, and a public-use facility. These park building improvements will be located approximately 330 feet from the shoreline, and outside of the shoreline setback area.

Coastal Preserve – 57 acres adjoining and mauka of the Public Shoreline Park will be designated as coastal preserve. The coastal preserve contains known archaeological and cultural sites, including burials. Therefore, to protect the integrity of these sites, the coastal preserve will remain generally undisturbed and development will be prohibited, with the exception of trails between the community and the shoreline.

Community and Neighborhood Parks – The centrally located community park of approximately seven acres will include recreational facilities such as a soccer field and restrooms. Smaller, neighborhood pocket parks will be dispersed throughout 'O'oma Beachside Village, and connected by the community trail system. Pedestrian trails and paths will make these green spaces accessible for residents to enjoy, and add a layer of interconnectivity within the community. The neighborhood parks total approximately five acres.

Māmalahoa Trail – The historic Māmalahoa Trail, which will remain protected and preserved, is approximately 10 feet wide and runs north-south through the Property. A buffer of 50 feet on both sides of the Trail will remain undisturbed. Therefore, the Māmalahoa Trail with the buffer will provide a 110-foot wide open space corridor, which is approximately 2,520 feet long, and includes approximately seven acres. There will also be an additional 60-foot building setback from the buffer on both sides.

Highway Buffer – A 150-foot wide open space buffer (approximately 9 acres) is planned along Queen Ka'ahumanu Highway. This area will serve as a visual buffer to the highway and may include landscaping to further enhance the buffer.

2.3.5 Circulation and Roadways

Circulation within and around 'O'oma Beachside Village was an important consideration in the community design. A network of interconnected streets will disperse vehicular traffic throughout the community and connect residential areas to the mixed-use villages. Non-vehicular, or pedestrian/bike circulation, is given high priority at 'O'oma Beachside Village. Community streets will be designed for lower vehicle speeds, with appropriately narrow lanes, sidewalks, and street trees.

A second circulation system of linked pedestrian/bike trails will provide another option for traveling through the community. The community trail system will connect residential areas to the neighborhood pocket parks, the community park and facilities, the mixed-use villages, and the mauka-makai shoreline access trail.

Primary access to the Property is permitted from Queen Ka'ahumanu Highway near the southern boundary; however, 'O'oma Beachside Village, LLC is working cooperatively with the State, County, and adjoining landowners to plan and develop its portion of a frontage road (Frontage Road) makai of, and parallel to, Queen Ka'ahumanu Highway.

The Frontage Road would provide a makai route parallel to Queen Ka'ahumanu Highway and would limit full Highway access points (i.e., intersections with all right and left turning movements) to signalized intersections at Keāhole Airport Road, Ka'iminani Drive, and Huliko'a Drive (Kohanaiki). ~~With~~ Until the Frontage Road is completed between the 'O'oma Beachside Village direct access from 'O'oma Beachside Village to Queen Ka'ahumanu Highway would be limited to a "right turn in, right turn out" intersection located approximately at the center of the eastern Property boundary. 'O'oma Beachside Village residents would be able to access Queen Ka'ahumanu Highway via the Frontage Road at full intersections at Ka'iminani Drive (north), and Huliko'a Drive (south)

'O'oma Beachside Village, LLC continues to coordinate with the State DOT and surrounding land owners on roadway access and connectivity to adjacent lands.

In addition to the existing permitted crossing of the Māmalahoa Trail at the southern end of the Property, two additional crossings are proposed. These crossings would be designed to minimize impacts to the Māmalahoa Trail and the roadway surface of the proposed crossings will be designed to provide a clearly defined visual reference to the trail crossing.

2.3.6 Wastewater Treatment Plant

The County's Kealakehe wastewater treatment plant is located approximately 3.5 miles from 'O'oma Beachside Village. Other options for wastewater treatment include the development of an on-site treatment plant and participation with adjacent landowners on the development of expansion of additional wastewater treatment facilities.

Should 'O'oma Beachside Village, LLC develop a wastewater treatment plant on the Project site, the design and construction will be in accordance with State Department of Health and County of Hawai'i standards and treated water would be reused for irrigation.

2.4 DEVELOPMENT TIMETABLE AND PRELIMINARY COSTS

Construction of ~~the~~ 'O'oma Beachside Village ~~residential community~~ is estimated to begin when all entitlement and permitting approvals have been received. Construction is anticipated to begin as early as 2011, to include completion of the Project's major infrastructure by 2018, with full build-out completed in 2029. The first properties at 'O'oma Beachside Village could be expected to be available for sale or lease in 2012.

'O'oma Beachside Village will not be built in discrete phases or increments; it is a single integrated community. For the purpose of infrastructure development and demand projections, the Property has been roughly divided into three areas: Area A, Area B, and Area C (Figure 11).

However, these areas are not sequential phases, as it will be necessary to construct certain elements of each area concurrently or with offset start or completion timeframes.

For example, it is envisioned that both the Makai Village (roughly the location of Area A) and the Mauka Village (roughly the location of Area B) will be started simultaneously. This will provide for both: 1) larger ocean view residential homes and lots and supporting retail facilities in the Mauka Village; and 2) a gateway entrance and essential smaller market rate and affordable residential units and community-serving retail and commercial space in the Mauka Village. Concurrently or soon afterward, in the Residential Village area between the Makai Village and Mauka Village area (roughly the location of Area C), elements such as greenways and the proposed charter school may be built. It will also be necessary to build roadways and infrastructure connecting the Makai Village and Mauka Village areas though the Residential Village area, and some residential units may also be built.

While all areas of the community may have elements under construction or completed at the same time, complete build-out will be limited to market demand and absorption. As provided in the market assessment (Appendix K), average annual absorption has been projected at approximately 67 residential units per year as distributed throughout the Property between the years 2012 to 2029. Likewise, commercial absorption is projected simultaneously in both the Makai Village and Mauka Village areas with the smaller commercial area of the Makai Village (approximately 50,000 square feet) being built out and absorbed sooner than the larger commercial area of the Mauka Village (approximately 150,000 square feet).

At the start up of ‘O‘oma Beachside Village, it will be essential to design, size, and construct major infrastructure systems, such as water and wastewater treatment facilities, with the capacity to serve the entire community. If the proposed reclassification is approved, ‘O‘oma Beachside Village will include approximately 264 acres within the State Urban district. While this is a sizable area, it is not so large to allow for phasing of major infrastructure systems necessary to provide services to the community. Therefore, all large scale infrastructure improvements will be designed, sized, and constructed with the capacity to serve the entire community and 'O'oma Beachside Village, LLC intends to complete all major infrastructure for 'O'oma Beachside Village within 10 years of the granting of the requested reclassification.

Order of magnitude costs are estimated to be approximately $114 or $116 million, depending on which desalination alternative is selected, as detailed in Table 2.

Legend

- Area A
- Area B
- Area C

FIGURE 11
Project Areas
'O'oma Beachside Village

'O'oma Beachside Village, LLC
ISLAND OF HAWAI'I

NORTH
LINEAR SCALE (FEET)
0 250 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.

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

Table 2. Order Of Magnitude Costs (in $1,000s)

	On-site Costs				Off-site Costs		Total	
Component Description	**Area A**	**Area B**	**Area C**	**Other**	**Alter-native 1***	**Alter-native 2****	**Alter-native 1***	**Alter-native 2****
Site Preparation†	$350	$250	$400				$1,000	$1,000
Roadway	$8,000	$3,000	$3,000				$14,000	$14,000
Storm Drain	$2,500	$450	$2,000				$4,950	$4,950
Wastewater System	$21,500	$3,500	$9,500				$34,500	$34,500
Water System	$3,000	$1,500	$2,500		$3,000	$1,500	$10,000	$8,500
Desalination Plant				$6,000		$6,000	$6,000	$6,000
Electrical/Telephone/Cable	$9,500	$2,500	$9,000		$3,000	$3,000	$24,000	$24,000
Mobilization & Contingencies	$12,000	$3,000	$6,500				$21,500	$21,500
Total	**$56,850**	**$14,200**	**$32,900**	**$6,000**	**$6,000**	**$10,500**	**$115,950**	**$114,450**

†Site Preparation estimate does not include mass grading or earthwork costs.
* Alternative 1 assumes an on-site desalination plant in Area A.
**Alternative 2 assumes an off-site desalination plant.

2.5 ENVIRONMENTALLY-RESPONSIBLE PLANNING AND DESIGN

In the design and construction of 'O'oma Beachside Village, 'O'oma Beachside Village, LLC will implement feasible measures to promote energy conservation and environmental stewardship, such as the standards and guidelines promulgated by the US Green Building Council, the United States Environmental Protection Agency (EPA) ENERGY STAR Program, or other similar programs.

2.5.1 OEQC's Sustainable Building Design Guidelines

The Office of Environmental Quality Control (OEQC) issued *Guidelines for Sustainable Building Design in Hawai'i: A Planner's Checklist* (OEQC 1999) and has requested that consideration be made in applying sustainable building techniques to projects. The OEQC Guidelines state:

> *A sustainable building is built to minimize energy use, expense, waste and impact on the environment. It seeks to improve the region's sustainability by meeting the needs of Hawai'i's residents and visitors today without compromising the needs of future generations. Compared to conventional projects, a resource-efficient building project will:*
> *1. Use less energy for operation and maintenance.*

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

Where appropriate, ‘O‘oma Beachside Village, LLC will utilize techniques described in the *Guidelines for Sustainable Building Design in Hawai‘i* in the creation of ‘O‘oma Beachside Village. Sustainable design features considered for ‘O‘oma Beachside Village include:

- A site selected that is surrounded by existing development, which is easier to serve with existing municipal infrastructure.
- Identification of eco-efficient goals and ensuring goals are met.
- A design that community includes a mix of residential, commercial, public uses, parks, open space, a neighborhood school, biking and walking paths combining to form a community that encourages residents to build relationships with each other, rely less on cars for transportation, walk and bicycle more often, enjoy outdoor surroundings, and actively engage in civic life.
- The existing resources and natural features of the Property will be preserved.
- Buildings will be sited to take advantage of natural features and maximize their beneficial effects where practical.
- Buildings will be located close to the street to provide a comfortable environment for pedestrians and bicyclists.
- Bike racks will be provided for bicycle commuters in commercial areas and other suitable locations.
- The streets within the community will be designed to maximize pedestrian use. Street design includes:
    - Narrow lanes designed for slow travel speeds.
    - Gentle curves and bends of roads within the neighborhood to allow for natural traffic calming (long, straight segments of neighborhood streets are avoided).
    - Continuous sidewalks and street trees to provide a comfortable pedestrian environment.
    - On-street parking will provide a barrier between pedestrians on the sidewalk and cars in moving travel lanes.
- The footprint of the community will be minimized by development clustered in compact neighborhoods with smaller lots to allow more common open space to be preserved in the community, making more efficient use of the land.
- Building types will allow flexibility to accommodate changing needs of the occupants.

- Natural cooling such as street trees that shade buildings and paved areas will be included within the community.
- Use renewable energy. Use solar water heaters and consider the use of photovoltaics and Building Integrated Photovoltaics (BIPV).
- Energy consumption will be minimized through the use of solar design features such as solar water heaters.
- Where feasible landscaping will include:
    - Use of locally made soil amendments and compost for plant nourishment, improved water absorption and holding capacity.
    - Use of drought tolerant and/or slow growing hardy grasses, native and indigenous plants, shrubs, ground covers, trees, appropriate for local conditions, to minimize the need for irrigation.
    - Use of mulches to minimize evaporation, reduce weed growth, and retard erosion.
    - Use of edible landscaping to provide nutrition for the community.
    - Use of non-potable water or reclaimed water for common areas, fire system, and recreational fields.
- Road sections through non-urbanized areas (not fronted by development) will use open swales for drainage.
- Recycling and waste diversion strategies will be employed during construction and during occupancy.
- Homes will include water conserving, low flow fixtures as required by Uniform Plumbing Code.
- Provide an Integrated Pest Management approach. The use of products such as Termi-mesh, Basaltic Termite Barrier and the Sentricon "bait" system can provide long term protection from termite damage and reduce environmental pollution.
- For termite protection, use non toxic alternatives to pesticides and herbicides, such as Borate treated lumber, Basaltic Termite Barrier, stainless steel termite barrier mesh, and termite resistant materials.
- Specifications for building materials will encourage use of products with high recycled content, low or non-toxic materials, which are locally produced.

2.5.2 Leadership in Energy and Environmental Design (LEED)

The US Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System is a nationally accepted benchmark for the design, construction, and operation of sustainable buildings. The LEED Green Building Rating System encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. LEED is a third party certification program and the nationally accepted benchmark for the design, construction and operation of high performance green buildings. LEED gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental

quality. Where appropriate, ‘O‘oma Beachside Village, LLC will utilize LEED concepts in the development of ‘O‘oma Beachside Village.

LEED for Neighborhood Development (LEED-ND) is a rating system that integrates the principles of smart growth, new urbanism, and green building into the first national standard for neighborhood design. It is being developed by US Green Building Council in partnership with the Congress for the New Urbanism and the Natural Resources Defense Council.

Using the framework of other LEED rating systems, LEED-ND recognizes development projects that successfully protect and enhance the overall health, natural environment, and quality of life of our communities. The rating system encourages smart growth and new urbanist best practices, promoting the location and design of neighborhoods that reduce vehicle miles traveled and communities where jobs and services are accessible by foot or public transit. It promotes more efficient energy and water use—especially important in urban areas where infrastructure is often overtaxed.

LEED-ND emphasizes the creation of compact, walkable, vibrant, mixed-use neighborhoods and encourages decreased automobile dependence. Research has shown that living in a mixed-use environment within walking distance of shops and services results in increased walking and biking, which improves human cardiovascular and respiratory health and reduces the risk of hypertension and obesity.

The LEED-ND pilot program is currently underway, of which a call for projects took place in early 2007. The pilot program is no longer accepting projects. ~~These~~ The pilot projects are in the process of gathering documentation based on the rating system, which they will submit to the US Green Building Council in order to become certified. The information learned during the pilot program will be used to make further revisions to the rating system and certification process. According to the US Green Building Council website the post-pilot version of the rating system, which will be available to the public, is expected to launch in 2009. Where appropriate, ‘O‘oma Beachside Village, LLC will utilize LEED-ND concepts in the master planning of ‘O‘oma Beachside Village.

2.5.3 EPA Energy Star Program

While designing ‘O‘oma Beachside Village, ‘O‘oma Beachside Village, LLC will also consider implementing elements of the United States Environmental Protection Agency (EPA) ENERGY STAR Program. The ENERGY STAR program was established in 1992 for energy-efficient computers. Now a joint program under the EPA and the U.S. Department of Energy, the ENERGY STAR program has grown to encompass more than 35 energy-efficient product categories for homes and workplace.

Homes that earn the ENERGY STAR designation must meet guidelines for energy efficiency set by the EPA. ENERGY STAR qualified homes can include a variety of energy-efficient features, such as effective insulation, high performance windows, tight construction and ducts, efficient heating and cooling equipment, and ENERGY STAR qualified lighting and appliances.

These EPA standards for the ENERGY STAR program can be found at the following website: http://www.energystar.gov. For example, all dwellings will be required to have solar panels (or comparable technology) sized to meet at least 80 percent of the hot water demand of each home.

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Chapter 3

Description of the Natural Environment, Potential Impacts & Mitigation Measures

3 DESCRIPTION OF THE NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes the existing conditions of the physical or natural environment, potential impacts of the 'O'oma Beachside Village on the environment, and mitigation measures to minimize any impacts.

3.1 CLIMATE

The climate of the 'O'oma Beachside Village property is affected by its coastal location and nearby mountains, producing a semi-arid climate. Temperatures are generally very consistent and moderate with average daily temperatures ranging from about 65°F to 85°F. Average annual rainfall in the area amounts to about 25 inches with each month typically contributing about 2 inches.

North Kona is largely sheltered from the predominant tradewind system by the land masses of Hualālai, Mauna Kea, and Mauna Loa volcanoes. The prevailing wind is typically offshore in the early morning and onshore in the afternoon (Juvik and Juvik 1998). Winds average approximately eight miles per hour (mph) in the Kona region (NOAA 2007).

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impacts to the region's climate are anticipated. Modification of the Property's specific microclimate may occur from the planting of shade trees and other landscape elements on what are now lava fields. The construction of buildings will channel air flows.

3.2 GEOLOGY AND TOPOGRAPHY

The 'O'oma Beachside Village property is located on the western slope of Hualālai, the third oldest shield volcano on the Island of Hawai'i. Hualālai's summit is located 8,271 feet above mean sea level, and comprises an area of approximately 290 square miles, accounting for 7.2 percent of the island (USGS 1996). Three rifts of Hualālai radiate to the north, south, and northwest. The volcano is characterized by a well-developed northwest rift zone, a moderately well-developed south-southeast rift zone and a poorly developed north rift zone (HCV 2004).

Hualālai grew above sea level more than 300,000 years ago (USGS 1996). The lava is no longer exposed on the subaerial surface, but has been dredged from submarine portions of the northwest rift zone (HCV 2004). Post-shield volcanism began 100,000 years ago and covered the entire surface of the volcano (OSU 2006). A large trachyte pumice cone of Puuwaawaa occurs on the northern slope. The last eruption of Hualalai, in 1800 – 1801, produced olivine basalt (SCS 1973).

In the past 5,000 years, 80 percent of Hualālai's surface has been covered by lava flows; however, earthquake activity beneath the volcano has been low (USGS 1996). Hualālai erupted last in 1800-1801 from its northwest rift zone, sending two large flows, known as the Ka'ūpūlehu flow, of 'a'ā lava, which is several meters thick and covered in spiny rubble

splintered from the flow itself so that it has a surface broken into rough, angular fragments, to the ocean on the west coast of the island (HCV 2004). The eruption brought quantities of xenoliths or foreign rock up from the mantle source that originally produced the lava. The Kona International Airport at Keāhole, located only 11 km north of Kailua, Kona, is built atop the larger flow.

Hualālai is still considered an active volcano, but there has been no recent magma-related seismicity or ground deformation, making it difficult to predict the next eruption. In 1929, there were a series of earthquakes occurring for about a month, which was attributed to magma intrusion near the surface. However, there was no surface eruption (HCV 2004).

Although Hualālai is still considered an active volcano, mapping and dating studies indicate that eruptions have been separated by centuries of inactivity. Since 1971, a seismic station has been maintained about three km east of the summit by the Hawaiian Volcano Observatory to monitor the volcano for signs of activity. Since its inception, there have been no micro earthquake swarms or harmonic tremors indicative of magma movement. Hualālai experiences earthquakes, registered to have a 4.0 magnitude, which stem from a deep source off the coast of the northwest rift zone and is not related to magma movement (HCV 2004).

The elevation of the Property ranges from sea level at the western boundary to 110 feet above mean sea level at the eastern boundary. Average slopes on the Property range from 0 to 5 percent. The lowest elevation of any habitable structures within 'O'oma Beachside Village will be at the southwest corner of the Makai Village area, which is at an elevation of 20 feet above mean sea level.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Grading will be necessary to accommodate the proposed 'O'oma Beachside Village. To the extent possible, improvements will conform to the contours of the land, limiting the need for extensive grading of the Property. Appropriate engineering, design, and construction measures will be undertaken to minimize potential erosion of soils during construction. All ground-altering activity will be conducted in accordance with Chapter 10 of the Hawai'i County Code, relating to erosion and sedimentation control. Grading plans will attempt to balance excavation and embankment quantities to the extent practicable. Adverse impact to topography and landforms, attributable to grading activity, is not anticipated.

Given the nature of the volcanic substrate within the Property, with its potential for concealed tubes and blisters, a program of archaeological monitoring will be maintained during grading activities necessary for the creation of 'O'oma Beachside Village. Such a program will help to ensure that any inadvertently discovered resources would receive immediate attention and protection, while their ultimate disposition is being determined by SHPD.

3.3 SOILS

There are three soil suitability studies prepared for lands in Hawai'i whose principal focus has been to describe the physical attributes of land and the relative productivity of different land types for agricultural production; these are: 1) the U.S. Department of Agriculture (USDA) Soil

Legend

'O'oma Beachside Village

Soil Survey

- Beaches
- Lava Flows: a'a
- Lava Flows: pahoehoe
- Punalu'u Extremely Rocky Peat, 6-20% Slopes

Source: US Dept. of Agriculture National Resources Conservation Services, 1995
Disclaimer: This graphic has been prepared for general planning purposes only.

FIGURE 12
Soil Survey

'O'oma Beachside Village

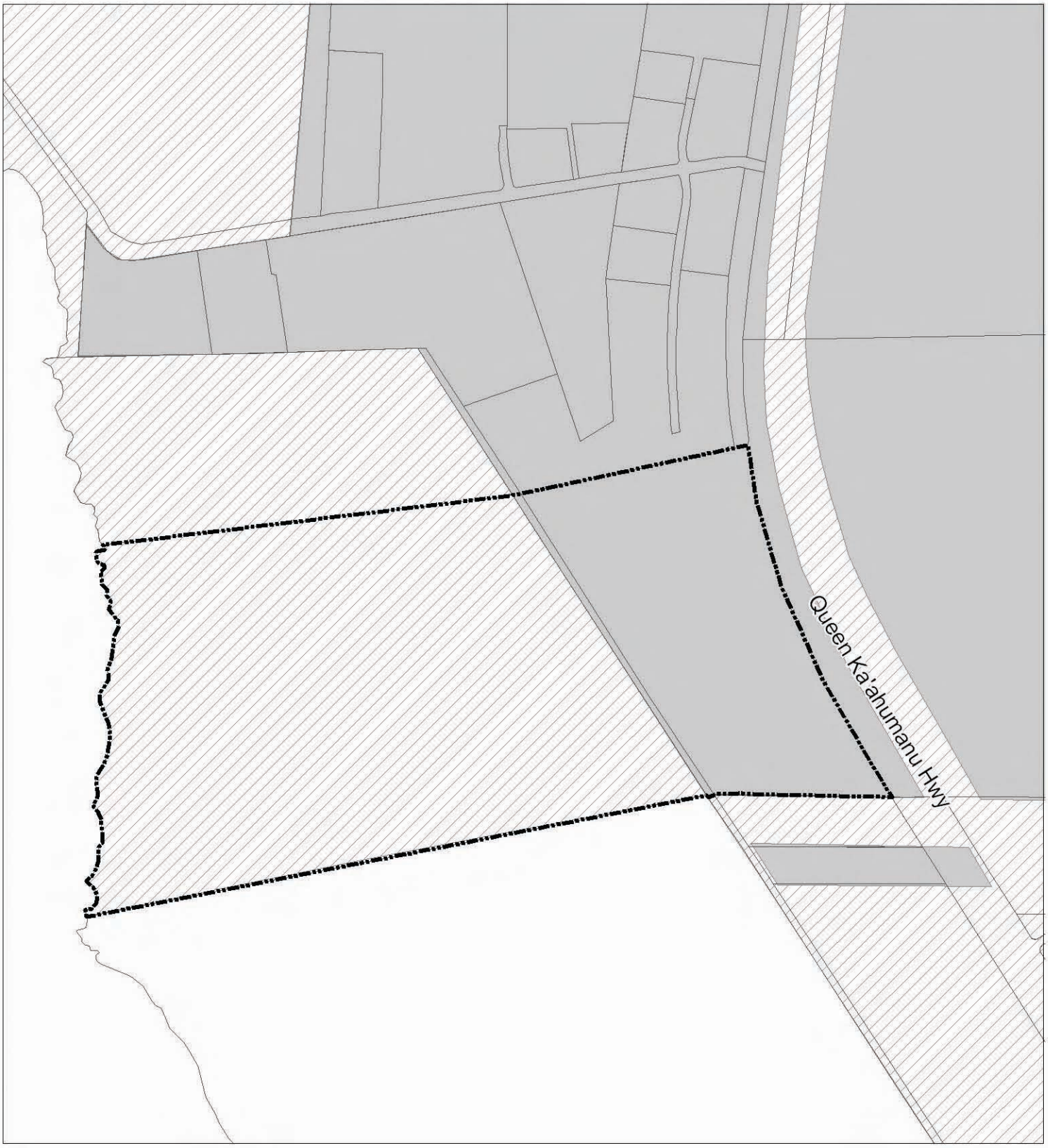
'O'oma Beachside Village, LLC — ISLAND OF HAWAI'I

NORTH

LINEAR SCALE (FEET)

0 250 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.



Legend

'O'oma Project Boundary

Land Classification

Type E: Very Poor

Not Classified

FIGURE 13

Land Study Bureau Land Classification

'O'oma Beachside Village

`O`oma Beachside Village, LLC

ISLAND OF HAWAI'I

NORTH

LINEAR SCALE (FEET)

0 250 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.

Source: Land Study Bureau 1967

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

Legend

'O'oma Beachside Village

Unclassified

FIGURE 14

Agricultural Lands of Importance to the State of Hawai'i (ALISH)

'O'oma Beachside Village

'O'oma Beachside Village, LLC

ISLAND OF HAWAI'I

NORTH

LINEAR SCALE (FEET)

0 250 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.

Source: U.S. State Dept. of Agriculture 1977 (State of Hawai'i GIS Database)

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

Conservation Service (SCS) Soil Survey; 2) the University of Hawai'i Land Study Bureau (LSB) Detailed Land Classification; and 3) the State Department of Agriculture's Agricultural Lands of Importance to the State of Hawai'i (ALISH).

3.3.1 USDA Soil Conservation Service Soil Survey

The *Soil Survey of the Island of Hawai'i, State of Hawai'i* (1973) shows that the 'O'oma Beachside Village property contains soil from the lava flows association, which is characterized as gently sloping to excessively drained soils that are coarse-textured and medium-textured formed in volcanic ash, pumice, and cinders. The soil is found on nearly barren lava flows and upland areas at elevations ranging from near sea level to 13,000 feet. More specifically, most of the Property consists of pāhoehoe lava flow (rLW), a small portion of the Property, located at the southwestern corner, near the beach, consists of 'a'ā lava flow (rLV) and the western boundary consists of beaches (BH) (Figure 12 ~~11~~). Descriptions of the soil classifications are as follows:

Lava Flows, pāhoehoe (rLW) - This soil has a billowy, glassy surface that is relatively smooth. In some areas, the surface is rough and broken and there are hummocks and pressure domes. The soil has no cover and is typically bare of vegetation, except for mosses and lichens. Some flat slabs are used as facings on buildings and fireplaces.

The SCS Land Capability Grouping, rates soil types according to eight levels, ranging from I, the highest classification level, to VIII, the lowest level. The SCS Land Capability classification is an indicator of suitability of soil for field crop cultivation The Land Capability classification for the soil at the Property is VIIIs, non-irrigated, meaning the soils and landforms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife or water supply or aesthetic purposes. The subclass is "s," meaning the soil is limited because it is shallow, droughty, or stony.

Lava Flows, 'a'ā (rLV) – This soil is rough and broken, consisting of a mass of clinkery, hard, glassy, sharp pieces piled in tumbled heaps. There is practically no soil covering and it is typically bare of vegetation, except for mosses, lichens, ferns, and a few small 'ōhi'a trees. The capability classification is VIIIs, non-irrigated. Class VIII soils and landforms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife or water supply, or aesthetic purposes. The subclass is "s," meaning the soil is limited because it is shallow, droughty, or stony.

Beaches (BH) – These are long, narrow, sloping areas of sand and gravel along the coastline, typically used for recreation. The sand and gravel vary in color, ranging from yellowish or white sand, formed in coral and sea shells, black sand, formed in lava rocks and green sand formed in olivine. The capability classification is VIIIw, non-irrigated. Class VIII soils and landforms have limitations that preclude its use for commercial plants and restrict their use to recreation, wildlife or water supply or aesthetic purposes. The subclass is "w," meaning that water in or on the soil interferes with plant growth or cultivation and in some instances the wetness can be corrected by artificial drainage.

3.3.2 LSB Detailed Land Classification

The University of Hawai‘i Land Study Bureau (LSB)’s *Detailed Land Classification, Island of Hawai‘i* (1965) classifies non-urban land by a five-class productivity rating system, using the letters A, B, C, D and E, where “A” represents the highest class of productivity and “E” the lowest.

Parcel 4 of the Property is rated “E” (Figure 13 ~~12~~). Parcel 22 and the State ROW are unclassified.

3.3.3 Agricultural Lands of Importance to the State of Hawai‘i

The State of Hawai‘i Department of Agriculture’s Agricultural Lands of Importance to the State of Hawai‘i (ALISH) system rates agricultural land as “Prime,” “Unique,” “Other” lands. The remaining land is not classified.

The entire Property is not classified in the ALISH system; therefore, the Property is not considered important agricultural land (Figure 14 ~~13~~).

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Property has a SCS Land Capability classification of VIIIs and VIIIw, meaning it is not suitable for commercial plant growth, and the soils are shallow, droughty or stony, or too wet for plant cultivation. The Property is rated “E” and unclassified on the LSB classification, and not classified under the ALISH system, indicating that the Property is not agriculturally significant. Therefore, the ‘O‘oma Beachside Village will not reduce the inventory of agriculturally significant lands.

Most the Property is covered with lava rather than soil per se. Lack of sufficient soil cover will require soil to be imported for landscaped areas, such as the parks and recreational fields.

The creation of ‘O‘oma Beachside Village will cause land disturbance, including removal of existing vegetation (clearing and grubbing) and mass grading. Impacts to the soils include the potential for soil erosion and the generation of dust during construction.

Grading plans will attempt to achieve a balanced excavation and embankment quantities to minimize disturbance to the Property’s topography and soils as much as practicable. As typically required for projects on land greater than one acre in size, a National Pollutant Discharge Elimination System (NPDES) Notice of General Permit Coverage (NGPC) for Storm Water Associated with Construction Activity will be necessary.

During site grading and all other construction activities, Best Management Practices (BMPs), which may include use of silt fences, sediment traps, and diversion swales, will be utilized to minimize erosion and the discharge of other pollutants, associated with development. After construction, landscaping will provide long-term erosion control.

Legend

'O'oma Beachside Village

Flood Hazards

Zone A: 100 Year Floodplain

Zone X: Outside Floodplain/Minimal Flooding Area

Source: FEMA Flood Insurance Rate Maps State of Hawai'i 2006

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

FIGURE 15

Flood Insurance Rate Map

'O'oma Beachside Village

'O'oma Beachside Village, LLC

ISLAND OF HAWAI'I

NORTH

LINEAR SCALE (FEET)

0 250 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.

Legend

'O'oma Beachside Village

Tsunami Inundation Zone

FIGURE 16

Tsunami Evacuation Zone Map

'O'oma Beachside Village

'O'oma Beachside Village, LLC

ISLAND OF HAWAI'I

NORTH

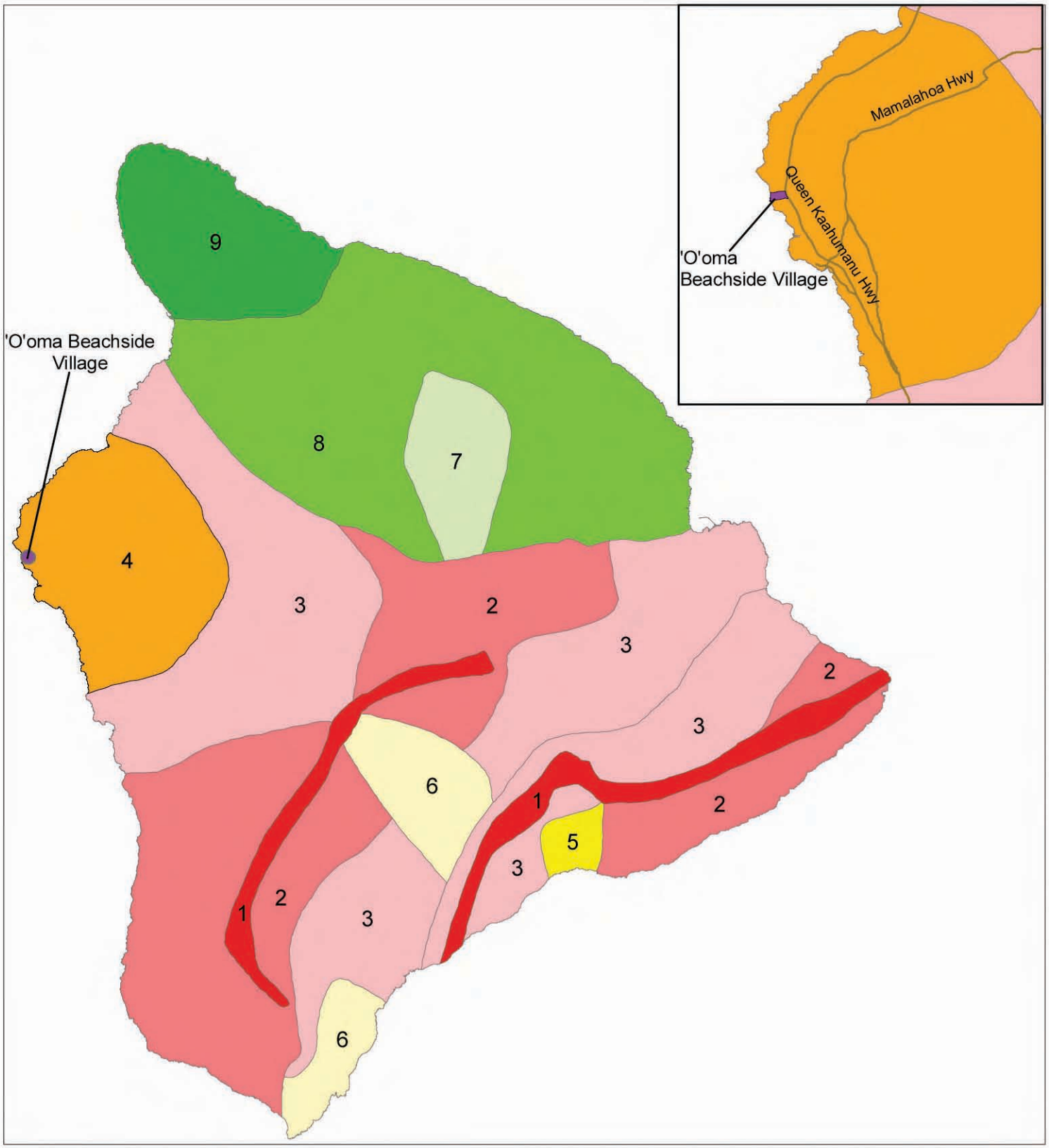
LINEAR SCALE (FEET)

0 250 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.

Source: Pacific Disaster Center 1998 (State of Hawai'i GIS Database)

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



Legend

- 'O'oma Beachside Village
- 1 (Highest Hazard)
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9 (Lowest Hazard)

Source: U.S. Department of the Interior/Geological Survey (State of Hawai'i GIS Database)

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

FIGURE 17

Big Island Lava Zone Map

'O'oma Beachside Village

'O'oma Beachside Village, LLC

ISLAND OF HAWAI'I

NORTH

LINEAR SCALE (Miles)

0 2.5 5 10 20

PBR HAWAII & ASSOCIATES, INC.

3.4 NATURAL HAZARDS

The Hawaiian Islands are susceptible to potential natural hazards, such as flooding, tsunami inundation, hurricanes, volcanic eruptions, ~~and~~ earthquakes, and wildfires.

The State of Hawai'i Department of Defense, Office of Civil Defense operates a system of civil defense sirens throughout the state to alert the public of emergencies and natural hazards, particularly tsunamis and hurricanes. The siren closest to the Property is to the southeast at Kealakehe School on Kealaka'a Street. The range of this siren does not reach to the area of the Property.

This section provides an analysis of ~~site~~ the Property's vulnerability to ~~such~~ natural hazards.

3.4.1 Flooding

According to the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program, a majority of the Property is located outside of the 500-year flood plain, in an area of minimal flooding (Zone X). Only a small portion of the Property, along the shoreline, is located within the 100-year flood plain (Zone A), as shown in Figure 15 ~~14~~.

3.4.2 Tsunami

Since the early 1800s, approximately 50 tsunamis were reported in Hawai'i. Seven caused major damage and two were generated locally. Part of the Property, located along the shoreline, falls within a tsunami evacuation zone designated by the Hawai'i County Civil Defense Agency (see Figure 16 ~~15~~). However, the Property is located near an identified evacuation route, OTEC Road and Queen Ka'ahumanu Highway. The remainder of the Property is located outside of the tsunami inundation area.

3.4.3 Hurricane

Since 1980, two hurricanes have had a devastating effect on Hawai'i. They were Hurricane 'Iwa in 1982, and Hurricane 'Iniki in 1992. Recently in 2007, Hurricane Flossie threatened to reach Hawai'i, putting Hawai'i on a hurricane watch. The hurricane, however, was downgraded from a hurricane to a tropical storm after passing Hawai'i Island, 95 miles south of South Point (AP 2007).

3.4.4 Volcanic

The volcanic hazard zone map for Hawai'i Island divides the island into zones ranked from one through nine (with one (1) being the area of greatest hazard and nine (9) being the area of least hazard) based on probability of coverage by lava flows (see Figure 17 ~~16~~). According to this map, the 'O'oma Beachside Village property is within Zone 4, which includes the entire slope of Hualālai and Kailua-Kona, where about five percent has been covered with lava since 1800 and less than 15 percent has been covered by lava in the last 750 years. Flows typically cover large

areas but the frequency of eruptions is lower than other volcanoes, such as Kīlauea and Mauna Loa (USGS 1997).

3.4.5 Earthquake

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

The Uniform Building Code (UBC), provided as Chapter 5 of the Hawai'i County Code, designates Hawai'i County into six seismic zones, ranging from 0 (no chance of severe ground shaking) to 4 (10 percent chance of severe shaking in a 50-year interval). 'O'oma Beachside Village is located in Seismic Zone 4 Probability Rating.

Since 1868, nine disastrous earthquakes have occurred in Hawai'i County; three of these were in West Hawai'i. In 1929, an earthquake with an epicenter in Hualālai and a magnitude of 6.5 resulted in extensive damage. Another earthquake in 1951, with its epicenter in Kona area and a magnitude of 6.9 also resulted in extensive damage. A recent series of earthquakes, with magnitudes of 6.7 and 6.0, occurred at Kīholo Bay on October 15, 2006. The earthquakes resulted in more than $100 million in damages to the northwest area of the island (USGS 2006).

3.4.6 Wildfires

Currently, the vegetation cover on the Property varies from nearly continuous to sparse and is most typically dominated by scattered bunch grasses. Common grasses (such as invasive fountain grass (*Pennisetum setaceum*), which is the most common grass on the Property) can easily carry fire. According to the West Hawaii Wildfire Management Organization (2006), most fires are human-caused and start along roadsides. Queen Ka'ahumanu Highway borders the Property to the east.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The occurrence of a natural disaster cannot be predicted, and should one occur, it could pose a risk of life and property within the proposed 'O'oma Beachside Village community. The proposed development, however, will not exacerbate any natural hazard conditions.

To mitigate potential impacts to life and property, caused by a natural disaster, no significant improvements or habitable structures will be built within the 100-year floodplain (Zone A) or the tsunami inundation zone. The only improvements near the shoreline will be park-related as comfort station and community pavilion.

All structures at 'O'oma Beachside Village will be constructed in compliance with requirements of the UBC, appropriate to the Zone 4 Seismic Probability Rating and other County, State, and Federal standards.

The creation of 'O'oma Beachside Village will mitigate the potential for wildfires on the Property through its landscape design and plant palette. In large part, vegetative fuel for fires, such as fountain grass, will be replaced by buildings and landscaping of the community. Landscaping at 'O'oma will include native species less likely to catch fire and non-invasive succulents. Further discussion of plants is provided in Section 3.6 (Flora). Other mitigation measures include the use of lava rock and other non-flammable materials in building and landscaping, and creating a trail system, which can act as a fire break. Within open space, such as the shoreline park and coastal preserve, any grasses and other dry vegetation can be more readily managed and monitored compared to existing conditions. 'O'oma Beachside Village will also contain complete fire prevention measures including access roads in accordance with Uniform Fire Code (UFC) Section 10.207, water supply for fire suppression in accordance with UFC Section 10.301(c), and buildings under construction in compliance with the provisions of UFC Article 87.

Impacts from natural hazards can be further mitigated by adherence to appropriate civil defense evacuation procedures. 'O'oma Beachside Village, LLC will coordinate with the State of Hawai'i Department of Defense, Office of Civil Defense and the County of Hawaii Civil Defense Agency regarding civil defense measures, such as sirens, necessary to serve 'O'oma Beachside Village.

3.5 GROUNDWATER RESOURCES AND NEARSHORE MARINE ENVIRONMENT

In West Hawai'i groundwater resources and the nearshore marine environment are inextricably connected because groundwater enters the ocean from numerous points along the coast. This is a result of many subsurface pathways through porous lava for groundwater to reach the ocean.

Due to high permeability of the natural ground surface across the Property and on the upland slopes mauka of the Property, surface runoff does not occur even during the most intense rainfalls. As a result, no natural gulches or waterways have been created on the Property and there are no drainage culverts along Queen Ka'ahumanu Highway in front of the Property. At present, about half of the annual rainfall that occurs on the Property percolates to the underlying groundwater. The balance is evaporated or transpired into the atmosphere.

The nearshore waters off the Property are classified as "AA" by the State DOH. According to DOH Water Quality Standards, "It is the objective of class AA waters that these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions." (HAR §11-54-03(c)(1)).

3.5.1 Groundwater Resources

Tom Nance Water Resource Engineering (TNWRE) conducted an assessment of the potential impact on groundwater resources from the creation of 'O'oma Beachside Village. Information and conclusions from the assessment are summarized below. The complete assessment report is included in Appendix A.

Wells in the Keāhole to Kailua region depict two distinctly different modes of groundwater occurrence. From the shoreline inland to near Māmalahoa Highway, groundwater occurs in a thin and brackish basal lens which "floats" on saline groundwater beneath it and is in hydraulic contact seawater at the shoreline. Around Māmalahoa Highway, there is an abrupt change from basal to high level groundwater of exceptionally low salinity. The geologic feature that causes groundwater to be impounded at high levels is not yet known. In addition to creating a substantial reservoir of potable quality water, this geologic feature also controls the location and manner of groundwater movement into the down-gradient basal lens.

Basal Groundwater – The basal lens between the Old Kona Airport and Keāhole Point is relatively saline. There are two, small diameter, monitor wells on the Property that provide information on basal groundwater beneath the Property. At the well located at the inland end of the Property, salinity in the upper 10 feet of the lens is 7.2 parts per thousand. This is too saline for irrigation except for seashore plants growing in well-drained sand. At the well located near the shoreline, the lens is much thinner. Salinity, lens thickness, and the diffuse transition zone are all indicative of a modest groundwater flow. The best estimate of the mauka-to-makai rate of flow through the basal lens, made by the USGS (Oki et al. 1999), is three million gallons per day (mgd). Beneath the approximately half-mile wide Property, that amount is estimated to be a relatively modest 1.5 mgd (TNWRE 2008).

Temperatures are anomalously cold and decrease progressively with depth into groundwater. Typical surface temperatures in basal groundwater in the Keāhole to Kailua area are 64 to 68 degrees Fahrenheit. This is five to 10 degrees colder than the temperature of high level groundwater directly inland. This difference, along with the progressive decrease in temperature with depth, show that the source of the low temperature is the saline groundwater beneath the basal lens. However, equivalent temperatures in the ocean offshore can only be found at a depth of more than 700 feet. This means that cold seawater is drawn inland at depth and returns seaward at mid-depth, mixing with and cooling the basal groundwater en route. Basal groundwater temperatures this low are unique along the West Hawai'i coastline (TNWRE 2008).

High Level Groundwater – Since the discovery of high level groundwater inland of Keauhou Bay in 1990, more than 20 wells have been completed above Māmalahoa Highway in North and South Kona. Water levels for high level groundwater inland of the Property range from about 70 to 290 feet above sea level, with no consistent pattern which might show a lateral direction of high level flow to the north or to the south. The chloride levels are typically less than 10 MG/L, essentially the same as found in high elevation rainwater. Compared to basal groundwater downgradient, temperatures are relatively warm, ranging from 69.8 to 73.8 degrees Fahrenheit (TNWRE 2008).

The County Department of Water Supply's use of wells tapping high level groundwater in this area began in 1994 with the North Kalaoa Well No. 4358-01. Since then, four other wells (Nos. 4057-01, 4158-01, 4258-03, and 3857-01) have been added. The Department's pumpage of these wells now averages more than 2.5 mgd.

POTENTIAL IMPACTS AND MITIGATION MEASURES

For the purposes of the groundwater analyses, it has been assumed an (on-site or off-site) reverse osmosis (RO) desalination plant would be the source of water for 'O'oma Beachside Village. It is also assumed that 'O'oma Beachside Village will utilize non-potable recycled water (R-1) from an on-site wastewater treatment plant. 'O'oma Beachside Village, LLC is continuing to explore other alternate sources of water including an off-site desalination plant with an off-site well and storage, or utilization of a conventional potable well system. If necessary, 'O'oma Beachside Village LLC will undertake additional research to assess the potential impacts and appropriate mitigation measures of the selected systems.

Two possible sources of feedwater supply considered for desalinization are: 1) the NELHA deep (cold) or shallow (warm) systems; or 2) on-site or off-site deep wells that would tap saline groundwater[2] at a depth beneath the brackish[3] lens. Off-site wells would be located at the selected off-site desalination plant location (see Section 4.9.1 for possible off-site desalination plant locations). The likely depth that the deep wells would draw from is 60 to 90 feet below sea level. The anticipated feedwater salinity from the deep wells would be 25 parts per thousand (ppt) or greater. Concentrate from desalting would be discharged in deep wells at a level deeper than the source feed water.

The desalination water system (either on-site or off-site) will have no impact on potable and brackish groundwater or nearshore waters. This conclusion is based on analysis of the following factors.

Feedwater Supply, Desalination, and Concentrate Disposal – At build-out, it is estimated that approximately 1.7 to 1.9 mgd of feedwater will be necessary for the desalination system to produce the potable and non-potable water required for 'O'oma Beachside Village. Whether or not this feedwater supply is seawater from NELHA or on-site or off-site saltwater wells drawing at a depth below the basal lens, such supply will have no impact on the basal groundwater as it moves across the Property and discharges at the shoreline.

Through the desalination process approximately 40 to 45 percent of the feedwater will become usable water (potable and non-potable). Approximately 55 to 60 percent of the feedwater would become hypersaline concentrate that will be disposed of in on-site or off-site wells. Two disposal wells would be used, each providing full back up capacity for the other. The wells will deliver the concentrate into the saltwater zone below the basal lens. Tentatively, the wells would be designed to deliver the concentrate to between 200 and 250 feet below sea level. The concentrate would have a salinity of approximately 60 (ppt) ~~percent~~, which is substantially

[2] In this EIS and in the Ground Water Quality Assessment (Appendix A) the terms "saline groundwater" and "saltwater" are used interchangeably. In the context used, both terms refer to groundwater extracted from beneath the midpoint of the transition zone, meaning a salinity greater than 17.5 ppt and most likely in the range of 25 to 32 ppt under continuous pumping. In this context, the depth it is extracted from is more important than its salinity. The goal is to use water which will not diminish or otherwise impact the supply of brackish water in the overlying basal lens.

[3] The term "brackish" covers a range of salinities from greater than drinking water (salinity of 0.5 PPT) to possibly salinity on the order of one-third of seawater (i.e. salinity of 12 PPT or less). Brackish water is that body of groundwater overlying more saline water at depth and clearly discernable as a "lens."

denser than either open coastal seawater (salinity of 35 ppt ~~percent~~) or saline groundwater (salinity of 33-35 ppt ~~percent~~).

Owing to the greater density, as well as the horizontal-to-vertical anisotropy of the subsurface lava flows, the concentrate will flow seaward without rising into and impacting basal groundwater. Discharge into the marine environment would be offshore at a substantial distance and depth. Three factors will cause the concentrate to move seaward at depth: 1) injection will be into and join the seaward moving saline groundwater beneath the basal lens; 2) the concentrate will have a greater density than the receiving saline groundwater, meaning there will be no tendency for the concentrate to rise due to density; and 3) lava permeabilities are on the order of 200 times greater in the direction of the flow (ie. horizontal) than across the flow (ie. vertical) (TNWRE 2008).

The concentrate, diluted by mixing into the receiving saline groundwater, will diffusively discharge into the marine environment at a depth comparable to its depth of initial injection (tentatively between 200 and 250 feet). In the marine environment, the concentrate will be rapidly mixed to background levels (in a matter of a few feet) with no impact on the marine environment (TNWRE 2008; MRC 2008).

Percolation of Excess Irrigation Water – 'O'oma Beachside Village will include irrigated landscaped areas. Sources of irrigation water will include the desalinated water and R-1 water recovered from the on-site wastewater treatment plant. The desalinated water would have negligible nutrient levels. The R-1 water would contain nitrogen and phosphorus in concentrations assumed to be 300 and 100 µM (micromoles ~~microns~~), respectively. It is assumed that approximately 15 percent of irrigation water will percolate downward into the underlying basal lens.

The percolate water from excess irrigation may also contain applied fertilizer that will be dissolved as the water moves through the soil. Of the applied fertilizer it is assumed that 10 percent of the nitrogen and two percent of phosphorus will percolate past the root zone. However, as the percolate water travels through the vadose (unsaturated) zone to underlying groundwater, removal rates of nitrogen and phosphorus will be 80 and 95 percent, respectively (TNWRE 2002).

Stormwater Collection and Disposal – Stormwater over 'O'oma Beachside Village will either percolate directly into the ground (in natural and landscaped area) or will be collected in a system of catch basins and drain lines and disposed of in drywells located throughout the community.

At present, about half of the annual rainfall that occurs on the Property percolates to the underlying groundwater. The balance is evaporated or transpired into the atmosphere. Creation of 'O'oma Beachside Village will not change these amounts.

It is assumed that the nutrient levels in post-development runoff percolating to groundwater will be increased by 20 µM for nitrogen and 2 µM for phosphorus (TNWRE 2002), as nitrogen and phosphorus levels from developed areas are relatively low (lower than the underlying

groundwater). As with irrigation percolate water, for stormwater percolating into the ground (either pre- or post-development) removal rates of nitrogen and phosphorus will be 80 and 95 percent, respectively (TNWRE 2002).

Summary of Impacts – A summary of 'O'oma Beachside Village's potential contributions to the underlying basal lens is provided below in Table 3 ~~2~~.

Table 3 ~~2~~. Summary of Potential Impacts to Groundwater

Item	Flowrate (mgd)	Nitrogen (lbs/day)	Phosporus (lbs/day)
Present (ongoing) groundwater discharge	1.50	19.8	1.67
Excess Applied Irrigation			
• As RO Product Water	0.0432	Negligible	Negligible
• As R-1 WWTP Effluent	0.0468	0.31	0.058
• As Dissolved Fertilizer	In the percolate	0.82	0.007
Percolating Stormwater	No Change	0.058	0.003
Post Development Totals	1.59	20.99	1.738
% Increase over Existing Conditions	6.0	6.0	4.1

The totals indicate that the present natural rate of groundwater flow beneath the Property of 1.5 mgd would be increased by approximately 0.09 mgd or six percent, an amount too small to be detected by water level monitoring. Nitrogen in the groundwater would be increased by six percent and phosphorus would be increased by approximately four percent.

The above amounts would have no significant impact to the use of groundwater by neighboring projects or the maintenance of anchialine pools and fishponds in the Kaloko-Honokōhau National Park. Similarly, the contributions of nitrogen and phosphorus to the groundwater flowing beneath the Property will not impair present and foreseeable use of this resource. In addition, the computed increases in nutrients are well within the natural variability of concentrations of these nutrients in the underlying groundwater (TNWRE 2008).

3.5.2 Nearshore Marine Environment

Marine Research Consultants, Inc. (MRC) conducted a marine water quality assessment and a marine environmental assessment of the nearshore waters off the Property. MRC conducted previous marine water quality assessments in 1990-1992 and 2002 and previous marine environmental assessments in 1986, 1990, and 2002. Thus, it is possible to evaluate not only the existing state of marine water quality and the marine environment, but also to assess if any changes have occurred over time. Conclusions of the assessments are summarized below. The complete 2008 assessment reports are included in Appendix B.

Water Chemistry

Analyses of water chemistry indicate that there is currently input of groundwater to the ocean near the shoreline. However, ocean waves rapidly mix the seaward flowing groundwater with ocean water, essentially diluting the groundwater to ocean water chemistries within meters of the

shoreline. Well water sampled from upslope wells is similar in composition to the groundwater entering the ocean. Analyses of water chemistry also indicate that there is presently no substantial input to the ocean from any sources of nutrients such as fertilizers or sewage effluent from upslope of the Property. Comparative results from the previous assessments conducted in 1990-1992 and 2002 indicates there has been no pattern of progressively increasing or decreasing input of materials to the nearshore ocean waters over the 14-year interval.

Marine Environment Structure

The physical structure of the marine environment off the Property is a basaltic ledge of pāhoehoe lava with interspersed pockets of white calcerous sand. The intertidal platform, which is constantly subjected to the wash of the waves, is flooded in places to form tidepools. Rimming many of the tidepools are dense bands of the intertidal seaweeds, *Anhfeltia concinna* and *Ulva fasciata*. The submerged portions of the tidepools are lined with various forms of encrusting red algae, and contain numerous urchins of the species *Echinometra matheai*, *Echinostrephus aciculatus*, and *Colobocentrotus atratus*, as well as numerous juvenile reef fish. The seaward edge of the lava shoreline is composed of either basaltic boulder fields, or vertical sea cliffs one to two meters in height. The one exception is a small area at the northern boundary of the Property where a small sandy beach reaches the shoreline (Dollar 2008).

Beyond the shoreline, the structure of the offshore environment generally conforms to the rest of the West Hawai'i coastline (Dollar 1982). The zonation scheme consists of three predominant regions. Beginning at the shoreline and moving seaward, the shallowest zone beyond the shoreline is comprised of a seaward extension of the basaltic shoreline ledge, along with scattered basaltic boulders that have entered the ocean after breaking off from the shoreline. *Pocillopora meandrina*, a sturdy hemispherical coral, is the dominant colonizer of the nearshore area. This species is able to flourish in areas that are physically too harsh for most other species, particularly due to wave stress (Dollar 2008).

Seaward of the nearshore boulder zone, the bottom structure is composed predominantly of a gently sloping reef bench composed of basalt, interspersed with lava extrusions and sand channels. In some areas, the bench is characterized by high relief in the form of undercut ledges and basaltic pinnacles. Fine-grained calcareous sediment also comprises a component of bottom cover. Water depth in this mid-reef zone ranges from about six to fifteen meters. As wave stress in this region is substantially less than in the shallower areas, and suitable hard substrata abound, the area provides an ideal locale for colonization by attached benthos, particularly reef corals, and generally the widest assortment of species and growth forms are encountered in this region (Dollar 2008).

The seaward edge of the reef platform (at a depth of about 18 meters) is marked by an increase in slope to an angle of approximately 20-30 degrees. In the deep slope zone, substratum changes from the solid continuation of the Island mass to an aggregate of generally unconsolidated sand and rubble (Dollar 2008).

Biotic Community Structure

Coral Communities - Coral communities off the Property are typical of the type that occurs throughout much of the West Hawai'i coastline. Nine coral species were surveyed and total coral cover was approximately 47 percent of bottom cover, which represents an increase of about two percent from 2002, and 27 percent from 1989. The increase is likely a result of coral community recovery from a large storm event that occurred just prior to the 1986 survey. With no other significant storms occurring in the twenty years between studies, the coral community is recovering in terms of increasing bottom cover and species diversity. The dominant coral species is *Porites lobata*, which comprises approximately 60 percent of total coral cover in all four surveys.

Macroinvertebrates - The dominant macroinvertebrates (aquatic invertebrates) are sea urchins, which occur in all reef areas. Sea cucumbers are distributed sporadically across the mid-reef and deep reef zones. Starfish were observed on the reef surfaces along with numerous sponges, often under ledges and in interstitial spaces. Red calcareous algae (*Porolithon* spp*., Peysonellia rubra, Hydrolithon* spp.) are abundant throughout the reefs.

Reef Fish - The reef fish community structure off the Property is fairly typical of the assemblages found in Hawaiian reef environments, and is characterized by six general categories: juveniles, plantivorous damselfishes, herbivores, rubble-dwellers, swarming tetrodonts, and surge-zone fishes. The lack of abundance of food fish indicates that the area has been subjected to moderate amounts of fishing pressure. The southern half of the Property has been designated as an area where aquarium reef fish collection is prohibited. While not quantitatively assessed, it appears that fish targeted by collectors were more abundant in the southern area than in the northern area.

Protected Marine Species – Protected marine animals that occur in Hawaiian waters include sea turtles, Hawaiian monk seals (*Monachus schauinslandi)*, and humpback whales (*Megaptera novaeangliae*). These animals have been declared threatened or endangered under the Federal Endangered Species Act.

The threatened green sea turtle (*Chelonia mydas*) occurs commonly along the Kona Coast, and turtles are frequently observed on beaches throughout the area. The endangered hawksbill turtle (*Eretmochelys imbricata*) is seen infrequently in waters off the Kona Coast. While turtles undoubtedly occur in the nearshore areas off the Property, no individuals were observed during the course of the recent survey. The U.S Fish and Wildlife Service notes that green sea turtles and hawksbill turtles nest on Hawai'i beaches from May through September, peaking in June and July.

Populations of the endangered humpback whale (*Megaptera novaeangliae*) are known to winter in the Hawaiian Islands from December to April. The recent survey was conducted in the month of December, when whales are present in Hawaiian waters. However, the scope of the survey was limited to depth contours shallower than 20 meters, which is not within typical whale habitat.

The Hawaiian monk seal, (*Monachus schauinslandi)*, is an endangered earless seal that is endemic to the waters off of the Hawaiian Islands. According to National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service, fewer than 100 seals have been sighted in the main Hawaiian Islands.[4] The majority of Hawaiian monk seals live in the Northwest Hawaiian Islands; however, the population size and range seems to be expanding in the main Hawaiian Islands. Hawaiian monk seals commonly haul out of the water onto sandy beaches to rest. Hence, while there is no greater potential for haul out to the beaches fronting the Property than any other area, there is a probability that seals will haul out on beaches at the Property. No ~~individuals~~ Hawaiian monk seals were observed on the beach or in the water during the course of the present survey.

Anchialine Ponds – Anchialine ponds are coastal land-locked bodies of water lacking surface connection to the sea, but with measurable salinities and damped tidal fluctuations. They are found in porous substrata such as recent lava or limestone adjacent to the sea. Without groundwater, anchialine ponds would not exist.

Anchialine ponds have been identified on the 'O'oma Property near the southern boundary. In 2008, a single pond was observed at the bottom of a small sinkhole on a lava dome with a floor elevation several meters lower than the surrounding lava fields. This pond was not identified in previous studies. The area of exposed water was approximately one square meter. No sediment was present on the floor of the pond, and the water column was extremely clear. The pond was populated with numerous native herbivorous red shrimp or opae'ula (*Halocardina rubra*), and was devoid of alien fishes, indicating that the pond is pristine in nature (Dollar 2008). A subsequent survey reports that native snails (*Melania* sp; *Assiminea* sp.) and preying shrimp (*Metabetaeus lohena*) were present in the pond (Montgomary 2008).

During the 1990-92 and 2002 assessments, another anchialine pond was identified near the southern boundary. However, the pond was under a dense canopy of trees, and the pond was lined with sediment and plant detritus. However, the water column throughout the pond was extremely clear. Red shrimp or opae'ula (*Halocardina rubra*) and glass shrimp (*Palaemon debilis*) were abundant in 2002. The three snails common to anchialine ponds (*Assiminea* sp. *Melania* sp. and *Theodoxus cariosa*) were also observed. Alien fish species were not observed in the pond in 2002.

Examination of the area in 2008 revealed marshy areas under the canopy of trees, but no exposed water that could be considered a pond matching the description from 1990-92 and 2002. It was noted in 2002 that the pond appeared to be in a final stage of senescence, and would soon be entirely filled in. Documentation of the life history of anchialine ponds in Hawai'i has shown that such infilling is part of the natural progression of these ponds. It is possible that since 2002, infilling of the senescent pond was complete, essentially eliminating this pond.

[4] NOAA (2008) *Hawaiian Monk Seals Top Threats: Main Hawaiian Islands.* http://www.fpir.noaa.gov/Library/PRD/Hawaiian%20monk%20seal/Fact%20Sheets/Top%20Threats.pdf

POTENTIAL IMPACTS AND MITIGATION MEASURES

Marine Water Quality - The results of the marine water chemistry analysis, including further evaluation of the potential changes to groundwater composition (discussed in Section 3.5.1 above), indicate that there is little or no potential for alteration of the marine environment or negative impacts to marine waters due to ‘O‘oma Beachside Village.

TNWRE concludes that with ‘O‘oma Beachside Village there will be a potential increase of groundwater flow of about six percent over present conditions. Accompanying the increase in flow rates are relatively small increases in nutrient loading of six percent for nitrogen and four percent for phosphorus. Dilution of groundwater at the shoreline and within several meters of the shoreline by turbulent mixing (waves) will result in little or no change to groundwater-marine water dynamics. Even if nutrient concentrations increased above the projected amounts, the nearshore waters are so well-mixed that there is little likelihood that concentrations will increase beyond the present ranges.

In addition to consideration of effects from nutrient additions, the potential effect of sedimentation that may occur as a result of construction activities has been considered. The Property is comprised of extensive areas of exposed soil and rock, with relatively little vegetative groundcover. During the construction of ‘O‘oma Beachside Village, permit regulations will limit the area of excavation at any one time, and require dust control measures. In addition, the predominant direction of wind (land breezes) generated by thermal convection from solar heating of the land mass is inland, resulting in transport of potential dust inland, and not toward the ocean. As a result, it appears that there is little potential for significant input of sediment to the marine environment resulting from ‘O‘oma Beachside Village.

The marine water quality assessment concludes that ‘O‘oma Beachside Village will not have any significant negative effect on ocean water quality. Changes to the marine environment as a result of ‘O‘oma Beachside Village will likely be undetectable, with no alteration from the present conditions because of: 1) the park and coastal preserve along the shoreline, resulting in a substantial setback; 2) lack of potential for surface runoff and sediment effects; 3) small projected groundwater subsidies; and 4) the strong mixing characteristics of the nearshore environment.

‘O‘oma Beachside Village will comply with all State of Hawai‘i water quality standards contained in HAR, Chapter 11-54, including the State’s: 1) antidegradation policy, which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected; 2) designated uses, as determined by the classification of the receiving State waters; and 3) water quality criteria. ‘O‘oma Beachside Village will also comply with all State of Hawai‘i permitting requirements specified in HAR, Chapter 11-55.

Marine Environment- The marine environmental assessment concludes that ‘O‘oma Beachside Village does not appear to have the potential to cause adverse impacts to the marine environment. The absence of plans to modify the shoreline or nearshore environment eliminates the potential for direct alteration of ecosystems. Secondary impacts associated with potential

changes to water quality will likely be undetectable. In addition, similar existing projects that have been monitored for decades reveal no changes to marine environmental quality. It can be concluded that as long as reasonable steps are taken in construction practices, there should be no adverse impacts to the marine environment (Dollar 2008).

'O'oma Beachside Village does not have any likelihood of changing the present situation with respect to turtles and Hawaiian monk seals. At present, the shoreline area is heavily used for recreational purposes, which is not likely to change. Any additional activity by people using the beach area as a result of the 'O'oma Beachside Village will not qualitatively change usage of the shoreline by humans and there are there are no physical factors that are likely to result in modification of seal behavior.

According to the revised *Recovery Plan for the Hawaiian Monk Seal* (NOAA 2007), while the majority of Hawaiian monk seals live in the Northwest Hawaiian Islands, Hawaiian monk seals appear to be growing in number and expanding their range in the Main Hawaiian Islands (MHI). Within the MHI, Hawaiian monk seals tend to distribute themselves in more remote areas where human disturbance is less likely, but a few monk seals are now observed on popular public beaches and some individual seals have become habituated to human presence. According to NOAA this situation presents management challenges, and it is often difficult to convey to the public that monk seals are sensitive to disturbance, especially when some individual animals seem content to share the beach with many people.

Monk seals are subject to harassment by people and pets. NOAA says that on more than one occasion this has led to swimmers being bitten, seals chased and/or attacked by dogs. In some cases, acclimation and habituation to humans have led to interactions that are harmful to humans and ultimately the seals. Other areas of concern include interactions with recreational fishers, as well as interactions with recreational and commercial boating. A critical threat to monk seals in the MHI is the introduction of disease from domestic, feral, and wild animals.

To minimize impacts to seals and other endangered species in the vicinity, the U.S. Fish and Wildlife Service recommends prohibiting free movement of pets, discouraging the feeding of feral cats, implementing predator control, providing public education to discourage the feeding of feral animals, and installing sturdy animal-proof garbage containers to prevent increases in the populations of house mice, rats, mongoose, and feral cats.

The growth of monk seal populations in the MHI has brought an increasingly large number of people in contact with monk seals. Closer proximity to seals can be seen as an opportunity to build a constituency for the species. Inevitably, it will also mean an increase in conflict between people and monk seals.

Appropriate protocol if a Hawaiian monk seal is encountered on a beach is to notify NOAA who will check if the animal is injured or entangled, then put tape around the site to keep people from approaching too closely.

Management measures by NOAA to ensure that haul-out beaches in the MHI are available for use by the Hawaiian monk seals include conducting workshops on managing monk seals, hiring monk seal coordinators on different islands to monitor hauled-out seals and prevent sources of

human disturbance, establishing volunteer monk seal monitoring groups, and establishing monk seal protection zones around monk seals on recreational beaches.

NOAA notes that an education and outreach program could minimize conflicts between people and monk seals, while increasing the public understanding of monk seal conservation, thus enhancing the recovery potential and conservation of the monk seal. The education and outreach program should focus on both residents and visitors, ensuring the greatest possibility for peaceful coexistence between monk seals and people.

The lack of shoreline development as well as establishment of a shoreline park and coastal preserve area will ensure that the marine environmental remains unchanged from present conditions. As a result, use of the beaches for haul-out areas by turtles or seals will not be altered from the present situation. Mitigative measures to ensure that there are no effects to turtles or Hawaiian monk seals by human interaction include appropriate signs and establishment of protective buffer zones established by trained personnel from State and/or Federal agencies.

Regarding turtle nesting, U.S Fish and Wildlife Service notes that optimal nesting habitat is a dark beach free of barriers that restrict turtle movement. The lack of shoreline development and the establishment of a shoreline park and coastal preserve area will ensure existing shoreline nesting conditions are not significantly changed. In addition, adherence with Hawai'i County law regarding lighting (Chapter 14 Article 9, HCC), which requires shielding of all outdoor lights, will ensure cumulative and secondary impacts related to light pollution will not impact the shoreline and beach.

Regarding the anchialine pond on the Property, this pond is within the proposed coastal preserve area and will be protected; no structures or construction activities are planned which would result in the filling or grading of the anchialine pond. The removal of the Christmas berry (*Schinus terebinthifolius*) and Mesquite (*Prosopis pallida*) trees overhanging the anchialine pond is recommended because the trees accelerate the filling of the pond with leaf litter and block sunlight needed for algal production, which is the basis of the pond's native food chain (Montgomary 2008). The U.S. Fish and Wildlife Service recommends the development of a long-term management plan for the pond. Buffer zones will be established around the anchialine pond area to insure no grading or construction activities in adjacent areas will result in material entering the pond. 'O'oma Beachside Village, LLC will install signs informing the public about these unique and fragile ecosystems.

Cultural Practices – Enhanced public access to the area and the coastline of 'O'oma Beachside Village is anticipated to also enhance traditional native Hawaiian cultural practices including fishing and gathering. Throughout the planning process and preparation of this EIS, 'O'oma Beachside Village representatives have consulted with lineal and cultural descendents of the area. 'O'oma Beachside Village will continue to seek input from descendents to provide guidance and insight into the use of coastline area including measures to minimize potential adverse impacts to marine resources resulting from an increase in people accessing the shoreline.

Sea Level Rise – There should be no significant impact to 'O'oma Beachside Village if sea level were to rise one or two meters in the next 40 years. 'O'oma Beachside Village will be set back at

least 1,000 feet from the shoreline. The open space between the shoreline the built environment will include a 57-acre coastal preserve and an 18-acre public shoreline park. The lowest elevation of any habitable structures within 'O'oma Beachside Village will be at the southwest corner of the Makai Village area, which is at a current elevation of 20 feet above mean sea level. Therefore, if sea level were to rise two meters in the next 40 years, the open space between the shoreline and built environment may be reduced, but there would still be a significant distance between the shoreline and the built environment and no habitable structures would be impacted.

3.6 FLORA

Geometrician Associates, LLC conducted a botanical survey for the 'O'oma Beachside Village property, which is included as Appendix C. The study considered the Property in two separate regions, coastal strand and upland, separated by the inland extent of wave-washed coral chunks and sand.

The vegetation of the upper portion has a simple and fairly uniform structure. The substrate is a mixture of pahoehoe and 'a'a, mostly the former. Vegetation cover varies from nearly continuous to sparse, and is most typically dominated by scattered bunch grasses, with low shrubs and herbs subdominant. There are a few very widely scattered trees.

The most common grass is fountain grass (*Pennisetum setaceum*), with pili grass (*Heteropogon contortus*) locally abundant. Natal red-top grass (*Rhynchelytrum repens*) is also fairly common.

The main herbs are 'ilima (*Sida fallax*) and 'uhaloa (*Waltheria indica*), with various weedy composites, spurges, and portulacas also common.

The main shrub is native pilo (*Capparis sandwichiana)*, with a fair amount of the alien species, noni (Morinda citrifolia) and klu (Acacia farnesiana). The aliens sourbush (*Pluchea symphitifolia*) and koa haole (*Leucaena leucocephala*) are abundant in a few spots or widely scattered. The alien swordfern (*Nephrolepis multiflora*) is fairly common in cracks, with a native counterpart, *N. exaltata subsp. hawaiiensis* uncommon.

Natives scattered on the lava include the Polynesian-introduced herb 'auhuhu (*Tephrosia purpurea*) and the tree naio (*Myoporum sandwicense*). Cave underhangs support a few individuals of other natives species, including lance fern (*Doryopteris decora*), the fern ally moa (*Psilotum nudum*), and the herb 'ala'ala wai nui wahine (*Plectranthus parviflorus)*.

The coastal strand area, enriched by sandy soil and groundwater, supports much higher species diversity and varies in cover from almost continuous blankets of herbs and grasses to low forests or parkland. It is dominated in biomass by the alien tree heliotrope (*Tournefortia argentea*), with the native naupaka (*Scaevola sericea*) and the aliens Christmas berry (*Schinus terebinthifolius*), noni, kiawe (*Prosopis pallida*), and koa haole (*Leucaena leucocephala*) also common.

The herbs and shrubs mentioned in the upland description are also present in the strand area, but often more vigorous and common. There is also an abundance of other grasses, with Bermuda grass (*Cynodon dactylon*) very common. Coconuts (*Cocos nucifera*) and the native kou tree (*Cordia subcordata*) are also present. Vines include the natives pa'u o hi'iaka (*Jacquemontia*

ovalifolia) and pohuehue (*Ipoemoea pes-caprae*), as well as the alien ivy gourd vine (*Coccinea grandis*). A large number of native and alien herbs typical of the strand, including heliotropes, chenopodes, and other types are present.

A full list of plant species found on the Property is contained in Appendix A. No listed or proposed threatened or endangered plant species were found. Pilo (*Capparis sandwichiana*), although common on the Property, is considered a species of concern by the U.S. Fish and Wildlife Service (USFWS) and is often listed among rare plants in Hawai'i.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The proposed 'O'oma Beachside Village will not impact any endangered or threatened plant species as none were identified on the Property. Areas with dense concentrations of the rare plant, pilo, will be preserved as part of the 57-acre coastal preserve.

Although some areas will remain intact for preservation, creation of the master-planned community will require removal of some existing scrub vegetation. To the extent practicable, other trees and plants may be relocated. Trees and plants that cannot be replanted will be chipped and recycled at the green waste recycling center.

'O'oma Beachside Village will include landscaping appropriate to the setting. Where feasible, new landscaping will include native and indigenous plants and drought tolerant hardy plants and grasses to minimize the need for irrigation. Plants such as the pilo (*Capparis sandwichiana*), 'a'ali'i (*Dodonaea viscose*), naupaka (*Scaevola sericea*) and 'ilima (*Sida fallax*), and naio (*Myoporum sandwicense*), which already occur on the Property, would make good planting material. These native species are adapted to the local environmental conditions and would require less water and little, if any, soil. Other native species known to have grown in the region or that are appropriate to a coastal environment may also be planted. Conditions, Covenants and Restrictions (CC&Rs) can be developed to specify use of native and drought-tolerant plants appropriate to a coastal environment.

As recommended by the U.S. Fish and Wildlife Service, other plants that may be used for landscaping can be found on the following website resources:[5]

- Pacific Island Ecosystems at Risk (http://www/hear.org/Pier/)
- Hawaii-Pacific Weed Risk Assessment (http://www.botany.hawaii.edu/faculty/daehler/wra/full_table.asp)
- Global Compendium of Weeds (www.hear.org/gcw)

Based on concerns from the DOT[6] that certain landscaping and water features should not become a bird/wildlife attractant or habitation that creates an interference with aircraft flight, 'O'oma Beachside Village will utilize native species presently found on the Property, as well as similar plants already used extensively at the nearby Kona International Airport at Keāhole. 'O'oma Beachside Village will work with DOT engineering staff to comply with airport safety requirements, as well as agree to design any landscaping and water features to discourage the

[5] USFWS letter dated July 11, 2008; letter included in Chapter 12 of this EIS.
[6] DOT letter dated May 30, 2007; letter included in Chapter 11 of this EIS.

attraction of birds or use as a nesting/breeding ground for other creatures that can cause or create hazards to aircraft flight. Generally, plants with fruit and berries attract birds; therefore, 'O'oma Beachside Village will minimize the use of these types of plantings.

3.7 FAUNA

Philip L. Bruner ~~prepared~~ conducted an avifauna and feral mammal survey of the 'O'oma Beachside Village property. The survey focused primarily on the coastal habitat, which was covered with native and alien trees and brush. Appendix D contains the complete survey.

Steven Lee Montgomery, Ph. D., conducted an invertebrate (which includes cave fauna and arthropods) survey of the 'O'oma Beachside Village property. Invertebrates are animals without backbones such as insects, shrimp, snails, and spiders. Appendix D contains the complete survey.

Only two feral mammal species, the Small Indian Mongoose (*Herpestes auropunctatus*) and the feral cat (*Felis catus*), were observed. Seven mongooses were observed along the coastal section and cat tracks were found along the coastal jeep road.

Although feral goats (*Capra hircus*) have been spotted on occasion along the 'O'oma and Kohanaiki coast, none were observed during the survey.

The endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) was also not recorded on the evening search using an ultrasound detector. Bats were also not detected during a previous survey conducted in 2002 (Bruner 2002). However, bats have been seen along the Kona coast so it is possible that they may occasionally forage on and around the Property.

Five species of avifauna were observed. They included four species of common migratory birds, the Pacific Golden-Plover or Kōlea (*Pluvialis fulva*), Wandering Tattler or 'Ūlili (*Heteroscelus incanus*), Ruddy Turnstone or 'Akekeke (*Arenaria interpres*) and Sanderling or Hunakai (*Calidris alba*). There was also one new alien species, the House Finch (*Carpodacus mexicanus*).

No seabirds were seen on this 2006 survey. None would be expected to nest on this site due to the abundance of ground predators and human disturbance.

The only possible native land birds that might on rare occasion forage in this area are the Hawaiian or Short-eared Owl (*Asio flammeus sandwichensis*), known as Pueo in Hawaiian, and the Io or Hawaiian Hawk (*Buteo solitarius*). These species hunt in a variety of habitats including forests, agricultural lands, and grasslands (Pratt et al. 1987; Hawaii Audubon Society 2005). Pueo are not listed as endangered or threatened on the Big Island; however, the State of Hawai'i does list them as endangered on O'ahu. The Io is an endangered species and is only found on the Big Island. Neither Pueo or Io were observed during the survey.

~~The avifauna and feral mammal survey did not include a survey of cave fauna, such as arthropods; however lava~~ Lava within the Property includes pāhoehoe which contains the potential for concealed tubes, caves, and blisters. Lava tubes and caves often provide habitat for arthropods, snails, birds, and mammals. None of the cave fauna now known from the island of

Hawaii are currently listed as candidate, threatened, or endangered species by the United States Fish and Wildlife Service (USFWS).

The invertebrate survey did not identify any threatened or endangered invertebrate species on the Property. Invertebrate species identified include: snails and slugs, scorpions, spiders, shrimp, bees, wasps, moths, dragonflies, and centipedes.

The shoreline area is the most biologically diverse. The area supports a native bee colony (*Hylaeus* sp), dragonflies (*Pantala flavescens*), and several types of ants. The anchialine pond in the shoreline area supports sails, red shrimp or opae'ula (*Halocardina rubra*) as well as native preying shrimp (*Metabetaeus lohena*). *Metabetaeus lohena* is listed by U.S. Fish & Wildlife Service as a candidate species, however, in the 2007 review of status it was assigned a rating of five (one being the most urgent, 12 least) as they appear to be relatively safe from destruction of habitat and introduction of fish to their ponds.

A survey of lava tubes on the Property did not yield native invertebrates despite the use of baits known to be attractive. The lava tubes (caves) are too dry, lack overhead vegetation and thus a strong root system (i.e. food source) and there are many skylights; consequently the tubes do not support a healthy lava tube ecosystem.

The Blackburn sphinx moth (*Manduca blackburni*) was not found on the Property. Neither the moth's solanaceous native host plant, 'aiea (*Nothocestrum* sp.), nor the best alien host, tree tobacco (*Nicotiana glauca*), was observed on the Property. No other solanaceous plants were found. *Capparis sandwichiana*, (maiapilo or pilo[7]) reported to be a nectar plant for adult Blackburn sphinx moths, is known on the Property. *Ipomea pes-caprae* subsp. *brasiliensis* (pōhuehue or beach morning glory) also grows on the Property. However, no Blackburn sphinx moths were observed feeding on the blooming flowers of either plant as observed over the course of several days.

No native fruit flies (*Drosophila*) were observed on the property. The location does not provide appropriate habitat for any of the 12 native *Drosophila* species recently listed as endangered or threatened. In addition, no native snails were observed on the Property.

As discussed in Section 3.5.2 (Nearshore Marine Environment) sea turtles or Hawaiian Monk seals were not observed on the Property during the time the marine environment assessment was conducted. However, these animals may occasionally "haul out" on beaches at the Property.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The proposed 'O'oma Beachside Village is not expected to impact any ~~rare,~~ endangered~~,~~ or threatened avifauna and feral mammal species or invertebrate species (which includes cave fauna and arthropods), as none were found within the Property (Bruner 2006; Montgomery 2008). In addition, since no native invertebrates were found in any lava tubes ~~none of the cave fauna (including arthropods) now known from the Island of Hawai'i are currently listed as candidate,~~

[7] The name *pilo* also is associated with the genus *Hedyotis*. *Hedyotis* is not associated with *Manudca* however.

~~threatened, or endangered species by the USFWS,~~ 'O'oma Beachside Village ~~is~~ will not ~~expected to~~ impact candidate, threatened, or endangered cave fauna.

Preservation of the shoreline area with the shoreline park and coastal preserve area will protect this biologically diverse area, including the anchialine pond and the native bee colony. Landscaping with native plants will also provide habitat for native arthropods, while creating an interesting recreation area for walking, cultural learning, and bird watching.

While the near-coastal and shoreline environment of the Property does not present a typical habitat suitable for bat roosting, to mitigate any potential impact to bats, any necessary clearing of woody vegetation can be scheduled for September through March, outside bat breeding season. Trees will be searched for bats before cutting.

To minimize impacts to listed and endangered species in the vicinity, the U.S. Fish and Wildlife Service recommends: prohibiting free movement of pets, discouraging the feeding of feral cats, implementing predator control, providing public education to discourage the feeding of feral animals, and installing sturdy animal-proof garbage containers to prevent increases in the populations of house mice, rats, mongoose, and feral cats. These measures should also be implemented into the 'O'oma Beachside Village CC&Rs.

Regarding sea turtles and Hawaiian monk seals, lack of shoreline development as well as establishment of a shoreline park and coastal preserve area will ensure that the marine environmental remains unchanged from present conditions. As a result, use of the beaches for haul-out areas by turtles or seals will not be altered from the present situation. Mitigative measures to ensure that there are no effects to turtles or Hawaiian monk seals by human interaction include appropriate signage and establishment of protective buffer zones established by trained personnel from State and/or Federal agencies. Section 3.5 provides additional mitigation measures regarding sea turtles and Hawaiian monk seals.

Chapter 4

Description of the Human Environment, Potential Impacts & Mitigation Measures

4 DESCRIPTION OF THE HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes the existing conditions of the human environment, potential impacts of the proposed 'O'oma Beachside Village on it, and mitigation measures to minimize any impacts.

4.1 ARCHAEOLOGICAL AND HISTORIC RESOURCES

Rechtman Consulting prepared an update to earlier State Historic Preservation Division (SHPD) approved archaeological survey work (Barrera 1985; Cordy 1986; Donham 1987) of the 'O'oma Beachside Village property (the Property). Between 1985 and 2002, the Property (in part and in whole) has been subject to intensive archaeological study, including inventory survey and data recovery (Barrera 1985, 1989, 1992; Cordy 1985, 1986; Donham 1987; Rechtman 2002).

In September of 1998, SHPD prepared an update on the historic preservation status of Parcel 4, and concluded that all historic preservation issues, except preservation planning, were complete. In October of 2002, SHPD prepared another update on the historic preservation status of Parcel 22. This SHPD correspondence likewise indicated that both survey work and data recovery had been acceptably completed and what remained to be done was preservation planning (see Appendix E for SHPD correspondence). In comments on the Draft EIS, SHPD clarified that for Parcel 4 there were five sites for which data recovery field work had not been completed.

~~However, given~~ Given the sensitive nature of archaeological resources in the immediate area and recent inadvertent discoveries at neighboring Kohanaiki, 'O'oma Beachside Village, LLC thought it prudent to re-examine the entire Property to assess the current condition of the known preservation sites and to identify any additional sites that may have gone undocumented. In 2007, Rechtman Consulting, LLC completed an intensive re-survey of the Property, identified the known preservation sites, and found one additional site that had not been previously recorded. Appendix E contains the complete updated archaeological survey.

4.1.1 Archaeological Background

In 1929-1930, John Reinecke conducted a survey of Hawaiian sites in West Hawai'i, including the 'O'oma and Kekaha region (Reinecke n.d.). 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. Where he could, he spoke with the few native residents he encountered. Among his general descriptions of the Kekaha region, Reinecke observed:

> *This coast formerly was the seat of a large population. Only a few years ago Keawaiki, now the permanent residence of one couple, was inhabited by about thirty-five Hawaiians. Kawaihae and Puako were the seat of several thousands, and smaller places numbered their inhabitants by the hundreds. Now there are perhaps fifty permanent inhabitants between Kailua and Kawaihae–certainly not over seventy-five.*

> *When the economy of Hawaii was based on fishing this was a fairly desirable coast; the fishing is good; there is a fairly abundant water supply of brackish water, some of it nearly fresh and very pleasant to the taste; and while there was no opportunity for agriculture on the beach, the more energetic Hawaiians could do some cultivation at a considerable distance mauka.*
>
> *The scarcity of remains is therefore disappointing. This I attribute to four reasons: (1) those simply over looked, especially those a short distance mauka, must have been numerous; (2) a number must have been destroyed, as everywhere, by man and by cattle grazing; (3) the coast is for the most part low and storm-swept, so that the most desirable building locations, on the coral beaches, have been repeatedly swept over and covered with loose coral and lava fragments, which have obscured hundreds of platforms and no doubt destroyed hundreds more; (4) many of the dwellings must have been built directly on the sand, as are those of the family at Kaupulehu, and when the posts have been pulled up, leave no trace after a very few years.*
>
> *The remains on this strip of coast have some special characteristics differentiating them from the rest in Kona. First, there is an unusual number of petroglyphs and papamu, especially about Kailua and at Kapalaoa. Second, probably because of the strong winds, there are many walled sites, both of houses and especially of temporary shelters… (Reinecke n.d.:1-2)*

From Reneicke's fieldwork, the following may fall at least partly within the 'O'oma Property:

- Site 66 – Very doubtful dwelling site. Then a row of sand-covered platforms at the border of the sand and the beach lava, enough for 6-10 homes. Remains of an old, large pen.
- Site 67 – Dry well on the crest of the beach.
- Site 68 – Water hole, two small platforms, four or more shelters, pens with very small platform.
- Site 69 – Large cattle pen. Doubtful old, rough platform at its north end. Remains of two old platforms by an ahu to the north.
- Site 70 – Walled platform, S.E. corner terraced, badly broken down. Platform mauka. The walls of this and of Site 73 are built of thin pieces of pahoehoe surface lava, rather unusual in appearance. [Reinecke n.d.:15]

More recently, the Property has been subject to intensive archaeological study (Barrera 1985, 1989, 1992; Cordy 1985, 1986; Donham 1987; Rechtman 2002, 2007; Rosendahl 1989; Walker and Rosendahl 1990). The sites documented indicate Precontact and Historic use of the Property for habitation, burial, and resource extraction activities. A prominent landscape feature that dates to the Historic Period is the Māmalahoa Trail, which runs a roughly north-south course through the mauka third of the Property.

4.1.2 Identified Sites

~~As a result of the earlier studies conducted within the Property, eight sites (SIHP Site 2, 1910, 1911, 1912, 1913, 10155, 18027, and 18773) were identified and approved for preservation by SHPD. During Rechtman's re-survey of the Property, one site (SIHP Site 25932) was discovered that was not previously documented.~~

Rechtman Consulting, LLC completed an intensive resurvey of the Property. As result of the survey:

- 10 sites (SIHP Site 2, 1910, 1911, 1912, 1913, 10155, 10181, 18027, 18773, and 18775) that had earlier been approved for preservation were investigated to verify current site conditions and site boundaries
- Five sites (SIHP Site 18774, 18808, 18821, 18822, and 18831) slated for data recovery were reassessed and now three are recommended for preservation (two for no further work) and
- Two sites (SIHP Site 25932 and 26678) were discovered that had not been previously documented.

~~The eight~~ Nine SHPD-approved archaeological sites have already been assessed for their significance based on criteria established and promoted by the SHPD and contained in Section 13-284-6, Hawai'i Administrative Rules (HAR). The significance of those sites, additional sites recommended by SHPD, and two newly discovered sites is presented below. The significance evaluation for the additional sites recommended by SHPD, and the newly discovered sites should be considered as preliminary until SHPD provides concurrence. For resources to be significant they 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.

Table 4 ~~3~~ presents a summary of the significance and treatment for all nine sites.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The ~~two~~ three sites containing burials (SIHP Site 18773 and 25932), which are significant under both Criterion D and Criterion E, will be preserved pursuant to a burial treatment plan prepared in consultation with recognized descendants and the Hawai'i Island Burial Council. The ~~seven~~ 12 other preservation sites, considered significant under multiple criteria, will be treated in accordance with a preservation plan submitted to and approved by SHPD prior to final subdivision approval.

Table 4 3. Archaeological Sites: Significance and Treatment

SIHP No.	Function	Temporal Association	Significance	Treatment
2	Trail	Pre-contact	A, C, D, E	Preservation
1910	Habitation	Pre-contact/Historic	C, D, E	Preservation
1911	Habitation	Pre-contact	D	Preservation
1912	Habitation	Pre-contact	D, E	Preservation
1913*	Heiau	Pre-contact	D, E	Preservation
10155	Habitation	Pre-contact	D	Preservation
10181§	Shrine	Pre-contact	D, E	Preservation
18027*	Habitation	Pre-contact	D, E	Preservation
18773	Burial	Pre-contact	D, E	Preservation
18774§	Habitation	Pre-contact	D	No further work
18775§	Habitation	Pre-contact/Historic	D	Preservation
18808§	Habitation	Pre-contact	D	Preservation
18821§	Habitation	Pre-contact	D	Preservation
18822§	Habitation	Pre-contact	D	Preservation
18831§	Resource Extraction	Modern	Not significant	No further work
25932	Burial	Pre-contact	D, E	Preservation
26678§	Burial	Pre-contact	D, E	Preservation

** Portions of both of these sites are included in the archaeological preservation area established on the NELHA property to the north.*
§ Significance and treatment for this site should be considered recommendations until SHPD provides concurrence.

Development activities will not commence until the site protection measures and stewardship aspects of these preservation plans are implemented. Two of these sites (SIHP Sites 1913 and 18027) are direct extensions of sites that exist to the north on state (NELHA) land, and the several others are part of the larger continuous coastal archaeological landscape. NELHA has committed to preserving a significant portion of this landscape (15 acres), and ‘O‘oma Beachside Village, LLC, is committed to spatially extending that preservation commitment. In an effort to reduce direct impacts to significant cultural resources, as part of the NELHA preservation plan, a coastal jeep road may be closed to vehicular traffic in the near future, as a more direct public access route for the “Pine Trees” recreational area is developed in neighboring Kohanaiki.

Given the nature of the volcanic substrate within the Property, with its potential for concealed tubes and blisters, a program of archaeological monitoring will be maintained during grading activities necessary for the creation of ‘O‘oma Beachside Village. Such a program will help to ensure that any inadvertently discovered resources would receive immediate attention and protection, while their ultimate disposition is being determined by SHPD.

‘O‘oma Beachside Village, LLC will comply with all State and County laws and rules regarding the preservation of archaeological and historic sites. Should historic remains, such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work will cease in the immediate vicinity of the find and the State Historic Preservation Division will be contacted for appropriate mitigation, if necessary.

4.2 CULTURAL RESOURCES

A cultural impact assessment to identify traditional customary practices associated with the Property was conducted. Appendix D contains the complete report. The cultural impact assessment includes archival research and interviews from people knowledgeable of the area to obtain information relating to practices and beliefs of indigenous Hawaiians within and surrounding the area. Such practices include access-driven subsistence, agricultural, recreational, healing and burial practices, and religious or spiritual traditions.

The cultural impact assessment has been designed and prepared to fulfill the mandate to the Land Use Commission from the Hawai'i State Supreme Court in its ruling, *Ka Pa'akai O Ka 'Āina v. Land Use Commission, State of Hawai'i,* 94 Haw. 31 (2000). The specific section of the ruling that served to guide the development and preparation of the cultural impact assessment is as follows:

> *In order for the rights of native Hawaiians to be enforceable, an appropriate analytical framework for enforcement is needed. Such an analytical framework must endeavor to accommodate the competing interests of protecting native Hawaiian culture and rights on the one hand, and economic development and security, on the other.*

4.2.1 Hawaiian Settlement

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. The communities shared extended familial relations, and there was an occupational focus on the collection of marine resources. 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 (see Ellis 1963; Handy et al. 1972; Kamakau 1961; Kelly 1983; and Tomonari-Tuggle 1985).

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-1930s, Handy et al. (1972) 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 et al. (1972) noted that the worship of Lono was centered in Kona. The rituals of Lono "The father of waters" and the annual Makahiki festival, that honored Lono and 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 (Handy et al. 1972: 523). 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 overlooked when viewing traditional sites of the cultural landscape.

4.2.2 Hawaiian Land Use and Resource Management Practices

On Hawai‘i, Kona is one of six major moku-o-loko (districts) 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 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 of ‘O‘oma (historically, ‘O‘oma 1st and 2nd) 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, thus there is some indication of the histories associated with this land.

While there are only limited native accounts that have been recorded about ‘O‘oma, it is known that the ahupua‘a 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 ‘O‘oma shore until he was five years old (Kamakau 1961:263-264).

4.2.3 The Environmental Setting of the Ahupua‘a of ‘O‘oma

The ahupua‘a of ‘O‘oma crosses 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.

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 (*Caesalpina kavaiensis*), 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 (Char 1991) 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 little rainfall. While on the surface, there appears to be little or no potable water, the lava flows that cover the land often contain underground streams channeled through subterranean lava tubes which feed springs, fishponds, and anchialine ponds on the kula kai (coastal flats). Also in this region, on the flat lands, about a half-mile from the shore, is the famed Alanui Aupuni (Government Trail), built in 1847, at the order of Kamehameha III. This trail or government roadway, was built to meet the needs of changing transportation in the Hawaiian Kingdom, and in many places it overlays the older near shore ala loa (ancient foot trail that encircled the island).

Continuing into the kula uka (inland slopes), based on historic surveys, it appears that ‘O‘oma ends at a survey station named Kuhiaka, 2,145 feet above sea level (cf. Register Map No. 1449). This zone is called the wao kanaka (region of man) and wao nahele (forest region). Rainfall increases at this elevation and taller forest growth has occurred. 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 the ahupua‘a of ‘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 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.

It appears that the practice of traveling between upland and coastal communities in the ‘O‘oma ahupua‘a greatly decreased by the middle 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 (see Helu 9162 to Kahelekahi, in this study). 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.

4.2.4 Native Traditions and Historical Accounts of ‘O‘oma and the Kekaha Region

There are very few historical 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.

It may be that the reason there are so few accounts for ‘O‘oma, is 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 below. 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 is perhaps among the earliest accounts of the Kekaha area, and in it is found a native explanation for the late settlement of Kekaha.

One of the earliest datable accounts that describes the importance of the Kekaha region fisheries comes from the mid-sixteenth century, following ‘Umi-a-Līloa’s unification of the island of Hawai‘i under his rule. Writing in the 1860s, native historian, Samuel Mānaiakalani Kamakau (1961) told readers about the reign of ‘Umi, and his visits to Kekaha:

> *‘Umi-a-Liloa did two things with his own hands, farming and fishing...and farming was done on all the lands. Much of this was done in Kona. He was noted for his skill in fishing and was called Pu‘ipu‘i a ka lawai‘a (a stalwart fisherman). Aku fishing was his favorite occupation, and it often took him to the beaches (Ke-kaha) from Kalahuipua‘a to Makaula[1]. He also fished for ‘ahi and kala. He was accompanied by famed fishermen such as Pae, Kahuna, and all of the chiefs of his kingdom. He set apart fishing, farming and other practices… (Kamakau 1961:19-20)*

As a child, in circa 1812, Hawaiian historian John Papa I‘i passed along the shores of Kekaha in a sailing ship, as a part of the procession by which Kamehameha I returned to Kailua-Kona from his residency on O‘ahu. In his narratives, I‘i described the shiny lava flows and fishing canoe fleets of the “Kaha” (Kekaha) lands.

In circa 1813, Kalani Kauikeaouli, who grew up to become Kamehameha III, was born. S.M. Kamakau (1961) tells 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 Kaikio‘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 2nd as through the Māhele ‘Āina, he originally claimed ‘O‘oma 2nd as his personal property, although he subsequently gave it up to the Kingdom (Government).

It is not until the early twentieth century that a few detailed native accounts are found that tell of traditional features and residents of ‘O‘oma and 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, 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.

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, we 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 of the accounts, “Ka Punawai o Wawaloli” (The Pond of Wawaloli), describes that the pond of Wawaloli, on the shore of ‘O‘oma, was named for a supernatural ocean being, who could take the form of the loli (sea cucumber) and of a handsome young man. Through this account it is learned that people regularly traveled between the uplands and shore of ‘O‘oma; the kula lands were covered with ‘ilima growth; and that a variety of fish, seaweeds, and shellfish were harvested along the shore. Also, the main figures in the tradition are memorialized as places on the lands of ‘O‘oma, Kalaoa, and neighboring ahupua‘a. These individuals and places include Kalua‘ōlapa (a hill on the boundary of Hāmanamana and Haleohi‘u), Wawaloli (a bay between ‘O‘oma and Kalaoa), Ho‘ohila (on the boundary of Kaū and Pu‘ukala), Pāpa‘apo‘o (a cave site in Hāmanamana), Kamakaoiki and Malumaluiki (locations unknown).

Other mo‘olelo and traditional accounts about ‘O‘oma and the Kekaha region are provided in Appendix D.

4.2.5 Land Tenure in ‘O‘oma and Vicinity

Through traditions and early historical accounts it can be seen that there are descriptions of early residences and practices of the native families on the lands of ‘O‘oma and within greater Kekaha. It is found that there are chiefly associations with the land of ‘O‘oma 2nd, as documented by the residency of the chiefs Kaikio‘ewa and Keaweamahi and their families and their retainers, while serving as the guardians of the young king, Kauikeaouli (Kamehameha III in circa 1813-1818).

A review of records reveals that none of the claims by native tenants made during the Māhele ‘Āina, or any of the applications for Royal Patent Grants, included lands that are a part of the Property.

While no formal awards or grants of land appear to have been made for lands that are a part of the Property, 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 were born and raised in the mauka section of ‘O‘oma, and by other kupuna from neighboring lands.

The Government Homesteading Program – 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 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.

In May 1902, the Territorial Survey Office issued Register Map No. 2123, depicting a portion of the Kalaoa-‘O‘oma Homesteads. ‘O‘oma 1st had been divided into 25 lots extending from near the shore (excluding the shore line) to the upper limits of the ahupua‘a; also excluding the early Royal Patent Grant parcels previously sold to native tenants.

‘O‘oma 2nd was also divided into Homestead parcels, but only six lots were made in the subdivision. Between 700 and 1,100 feet elevation, four Homestead lots were subdivided, containing 40.50 to 45 acres each.

Land use on the 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).

The two makai lots consisted of approximately 1,333 acres—the first lot from above the shore to the 1847 Alanui Aupuni, containing approximately 302 acres, and the other lot running mauka from the same Alanui Aupuni, to about the 800 foot elevation (containing approximately 1,031 acres).

In 1899, John A. Maguire, founder of Hu‘ehu‘e Ranch, applied for a Patent Grant on both of the makai lots, but he only secured a grant for the lower parcel of 302 acres, in ‘O‘oma 2nd (coincident with the size of the Property). Maguire’s Hu‘ehu‘e Ranch also held a lease for grazing purposes on the remaining government lands—both below and above the mauka highway—in ‘O‘oma 2nd.

Trails and Roads of Kekaha – Alahele (trails and byways) and alaloa (regional thoroughfares) are an integral part of the cultural landscape of Hawai‘i. The alahele 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 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 Māmalahoa Trail—that crosses the makai (near shore) lands, linking royal centers, coastal communities, and resources together.

The other major thoroughfare of this region is “Kealaehu” (The path of Ehu), which passes through the uplands, generally a little above the mauka old Māmalahoa Highway, out to the ‘Akāhipu‘u vicinity, and then cuts down to Kīholo in Pu‘u Wa‘awa‘a. From Kīholo, the makai alaloa and Kealaehu join together as the Alanui Aupuni, and into Kohala, passing through Kawaihae and beyond. 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 alahele and alaloa, running laterally with the shore, there are 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 (Appendix D).

Along the trails of the Kekaha region of which ‘O‘oma is a part, are found a wide variety of cultural resources, including, residences (both permanent and temporary), enclosures, wall alignments, agricultural complexes, resting places, resource collection sites, ceremonial features, ilina (burial sites), petroglyphs, subsidiary trails, and other sites of significance to the families who once lived in the vicinity of the trails. The trails themselves also exhibit a variety of construction methods, generally determined by the environmental zone and natural topography of the land. “Ancient” trail construction methods included the making of worn paths on pāhoehoe or ‘a‘ā lava surfaces, curbstone and coral-cobble lined trails, or cobble stepping stone pavements, and trails across sandy shores and dry rocky soils.

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, thus, taking travel away from the shoreline.

It was not until 1847, that detailed communications regarding road construction on 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.”

Twentieth Century Travel in ‘O‘oma and Neighboring Lands of Kekaha – Kama‘āina who have participated in oral history interviews, describe on-going 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 World War II, retired military vehicles became available to the public, and the 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 (circa 1973) that travel across the kula kai (shoreward plains) of ‘O‘oma was once again made possible for the general public.

4.2.6 Oral History Interviews

Information is presented from six oral history interviews that had been previously conducted by Kepā Maly of Kumu Pono Associates. One of these interviews was conducted in 1996 and the others between 2000 and 2003. Rechtman Consulting, LLC conducted five additional interviews, two in 2005, one in 2006, and two in 2007. The methodology for the interviews is explained in Appendix D.

All of the individuals that participated in the oral history interviews cited in the Cultural Impact Assessment are directly descended from traditional residents of ‘O‘oma and adjoining lands, and many of the personal recollections date back to the 1920s. The interviewees also benefited from the words of their own elders and extended family members, whose personal recollections dated back to the middle 1800s. 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 Kaua‘i. Interviewed in 1996, kupuna Ako visited families and fished at ‘O‘oma and neighboring lands of Kekaha (circa 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 ‘O‘oma 2nd, he continues to reside on old family land in ‘O‘oma. Uncle Kino regularly traveled the uplands and coastal lands of ‘O‘oma and Kekaha, learned of traditions and practices; and later managed the lands under Hu‘ehu‘e Ranch. He continues to fish on the coastal lands of ‘O‘oma and Kohanaiki. As a child he farmed the family lands that make up a portion of the Property, 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 ‘O‘oma. 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 resident. A descendant of families with generational ties to various lands of the Kekaha region, including ‘O‘oma, kupuna Keanaaina regularly traveled the uplands and coastal lands of ‘O‘oma 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 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-‘O‘oma and Kohanaiki. Kupuna 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 liason 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 was born at ‘O‘oma 2nd in 1918. He was raised there from infancy by his maternal grandparents, Peter Kaawa and Kahanawale Kamaka. Until kupuna Park’s recent passing, he resided nearby in Kalaoa 5th. Although he grew up on his grandparents 10 acre homestead in the upland section of ‘O‘oma 2nd he regularly traveled with his grandparents to the coastal lands of ‘O‘oma. Kupuna Park described life on the lands and identified the elder families of ‘O‘oma and neighboring lands. He noted that there was much more evidence of house sites and other features, some quite large, on the shores of ‘O‘oma when he was younger. He also shared important documentation pertaining to traditions associated with fishing and cultivation of the land. Kupuna Park’s elders were noted lauhala weavers, a craft that was passed on to him and his sisters, and that sustained their family. They collected lauhala from ‘Ohikapua on the kula lands of Kalaoa 5th. Kupuna Park was a noted weaver and resource for several cultural programs.

Summary of the Oral History Interviews – By the late 1800s, only a few permanent 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. In ‘O‘oma, near Wawaloli, 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‘onā, Kaulana, and lands further north to Kapalaoa.

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 Māmalahoa Trail, and walls, few other features were known by the interviewees on the lower kula lands (the area of the Property).

This is not surprising, as the interviewees observed 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 Property) 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 that the people of old, who once lived on the land, were 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 portion of the Property, 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 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 Property. All interviewees believe that ilina (burial sites) should be preserved in place; 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.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The OEQC *Guidelines for Assessing Cultural Impacts* (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 nature features of the landscape and historic sites, including traditional cultural properties. ~~In the Hawai‘i Revised Statutes Chapter 6E a~~ A working definition of traditional cultural property is ~~provided.~~ as follows:

> *"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. 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, in the definition of "Property" where 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, the cultural impact assessment adopted the state criteria for evaluating the significance of historic properties, of which traditional cultural properties are a subset (see Section 4.1.2).

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 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 several archaeological studies (Barrera 1985, 1989, 1992; Cordy 1985, 1986; Donham 1987; Rechtman 2002, 2007; Rosendahl 1989; Walker and Rosendahl 1990) that have been conducted within the Property, nine historic properties or portions thereof (see Table 4 ~~3~~ in Section 4.1.2 (Identified Sites) above) 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. Preservation is the SHPD approved treatment for all of these.

The two sites containing burials (SIHP Site 18773 and 25932), which are significant under both Criterion D and Criterion E, will be preserved pursuant to a burial treatment plan prepared in consultation with recognized descendants and the Hawai‘i Island Burial Council. The other preservation sites, considered significant under multiple criteria, 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. Two of these sites (SIHP Sites 1913 and 18027) are direct extensions of sites that exist to the north on state (NELHA) land, and the several others are part of the larger continuous coastal archaeological landscape. NELHA has committed to preserving a significant portion of this landscape (15 acres), and ‘O‘oma Beachside Village, LLC is committed to spatially extending that preservation commitment. In a effort to reduce direct impacts to significant cultural resources, as part of the NELHA preservation plan, the coastal jeep road may be closed to vehicular traffic in the near future, as a more direct public access route for the “Pine Trees” recreational area (which is not located within the 'O'oma Beachside Village Property) is developed in neighboring Kohanaiki.

While there were no specific ongoing traditional cultural practices identified relative to the land within the proposed ‘O‘oma Beachside Village property, there are potential cultural impacts, both specific and nonspecific, related to coastal and near-shore subsistence and recreational activities, primarily among beachgoers, fisherman, and surfers. Enhanced public access to the area and the coastline of ‘O‘oma Beachside Village is anticipated to also enhance traditional native Hawaiian cultural practices including fishing and gathering. As these activities could be characterized as traditional and customary practices, the locations of these activities could thus be considered traditional cultural properties and as such would be significant under Criterion E. As the proposed project will in no way inhibit coastal access, and as most of the proposed project elements are significantly set back (at least 1,100 feet) from the shoreline, it is envisioned that the protection and preservation of the ‘O‘oma shoreline will be enhanced; and that no traditional and customary practices will be impacted.

Throughout the planning process and preparation of this EIS, ‘O‘oma Beachside Village representatives have consulted with lineal and cultural descendents of the area. ‘O‘oma Beachside Village will continue to seek input from descendents to provide guidance and insight into the use of coastline area, including measures to minimize potential adverse impacts to marine resources resulting from an increase in people accessing the shoreline.

4.3 TRAILS AND ACCESS

‘O‘oma Beachside Village is directly accessed from Queen Ka‘ahumanu Highway via an unpaved jeep road at the southern-mauka corner of the Property. Within the Property, this access road connects to an unpaved coastal jeep road (created in the 1950s) that runs parallel to the shoreline. In the northern portion of the Property, this jeep road connects to a NELHA access road. The shoreline jeep road is currently used on a temporary basis by campers and vehicles

accessing the shoreline for recreational use at Kohanaiki pursuant to that project's public access requirements.

Two trails run through the Property: the historic Māmalahoa Trail and a shoreline trail, which is proposed to be part of the Ala Kahakai National Historic Trail System. Historic trails, such as the Māmalahoa Trail, were, and still remain important features of the cultural landscape. "Ancient" trail construction methods included the making of worn paths on pāhoehoe or 'a'ā lava surfaces, curbstone and coral-cobble lined trails, or cobble stepping stone pavements, and trails across sandy shores and dry rocky soils (Maly & Maly 2003).

The Māmalahoa Trail runs a roughly north-south course through the mauka third of the Property. This historic linear trail extends from Kailua-Kona north about seven miles to the 1801 lava flow near Keāhole Point in Kawaihae. Historical records indicate that the Māmalahoa Trail was constructed through the 'O'oma area in 1847 at the order of Kamehameha III. This trail or government roadway, was built to meet the needs of changing transportation in the Hawaiian Kingdom, and in many places it overlays the older near shore ala loa (ancient foot trail that encircled the island). Up until this point, residents built trails that typically ran mauka to makai (mountain to ocean) in the ahupua'a or village settlement to transfer goods and communicate with family and friends. When ahupua'a increased in numbers, coastal lateral trails where quickly incorporated into the trail system. The Māmalahoa Trail is a straight, curbed, cut and fill path that was built by labor forces conscripted by the island governors to transport food and other goods to the neighboring ahupua'a and the harbor of Kailua-Kona as well as a major route along the west side of the island (Rechtman 2007).

The Ala Kahakai National Historic Trail System was established by an act of the U.S. Congress in 2000, and is managed by the National Park Service. This 175-mile corridor extends from 'Upolu Point on the north tip of the island, along the west coast around Ka Lae and to the eastern boundary of Hawai'i Volcanoes National Park.[8] The designated corridor of the Ala Kahakai National Historic Trail falls within the Property.

POTENTIAL IMPACTS AND MITIGATION MEASURES

'O'oma Beachside Village will make the Property more accessible relative to the current limited access. In addition to improved roadways, a secondary circulation system of linked pedestrian/bike trails will provide options for traveling through the community, including accessing the shoreline. The community trail system will connect residential areas to the neighborhood pocket parks, the community park and facilities, the mixed-use villages, and the mauka-makai shoreline access trail.

'O'oma Beachside Village will enhance public access to the coastline. The 18 acres along the shoreline designated as a public shoreline park will be an extension of the beach parks planned at The Shores at Kohanaiki and NELHA. The shoreline park will include parking, a comfort station, and a community pavilion. In addition, the existing shoreline trail within the public shoreline park area is proposed to become part of the Ala Kahakai National Historic Trail

[8] NPS – Ala Kahakai National Historic Trail letter dated June 6, 2007; letter included in Section 11.0 of this EIS.

corridor. ~~In addition, the Ala Kahakai National Historic Trail corridor is proposed to run within this public shoreline park area.~~

The 57 acres mauka of the shoreline park will be designated as coastal preserve. The coastal preserve contains known archaeological and cultural sites, including burials. Therefore, to protect the integrity of these sites, the coastal preserve will remain generally undisturbed and development will be prohibited, with the exception of trails between the community and the shoreline. The existing coastal jeep trail will be abandoned as it is within the area proposed for a coastal preserve.

Temporary landscaping improvements are proposed on the Property in advance of the creation of ‘O‘oma Beachside Village to preserve public safety and protect beach resources from erosion caused by vehicles driving onto the sand. The landscaping will involve trimming and thinning vegetation and temporarily placing boulders to block vehicular access onto the sand. Two warning signs will also be installed at each end of the jeep road. The new warning signs will address issues of vehicular traffic and pedestrian safety.

‘O‘oma Beachside Village will protect and preserve the Māmalahoa Trail. A buffer of 50 feet on both sides of the Trail will remain undisturbed. Therefore, the Māmalahoa Trail with the buffer will provide a 110-foot wide open space corridor. This wide open space corridor will be approximately 2,520 feet long and encompass approximately seven acres. There will also be an additional 60-foot building setback on both sides of the buffer.

4.4 ROADWAYS AND TRAFFIC

M&E Pacific prepared a Traffic Impact Assessment Report (TIAR) to analyze impacts of ‘O‘oma Beachside Village. The TIAR includes an analysis of existing traffic conditions and projected future conditions without and with ‘O‘oma Beachside Village. Appendix G contains the complete TIAR.

4.4.1 Existing Roadways

The Property is on the makai side of Queen Ka‘ahumanu Highway about two miles south of the Kona International Airport at Keāhole (Airport). Major cross streets in the vicinity include Ka‘iminani Drive and OTEC Road (also referred to as NELHA Access Road) to the north, and Huliko‘a Drive and Hina Lani Street to the south.

Access - Access to the Property is via an unpaved jeep road that intersects with Queen Ka‘ahumanu Highway at an unsignalized junction near the south boundary. This connection is a State of Hawai‘i Department of Transportation (DOT) recognized access point for the Property. Additional access is possible via OTEC Road, which connects to a coastal jeep trail that extends north-south along the western portion of the Property near the shoreline.

Queen Ka‘ahumanu Highway – Queen Ka‘ahumanu Highway borders the Property to the east and is the primary north-south arterial highway on the west side of Hawai‘i. The highway passes through the North Kona and South Kohala districts and connects Kailua-Kona with the Airport, the Kohala resort areas, and Kawaihae. Queen Ka‘ahumanu Highway extends from Kawaihae

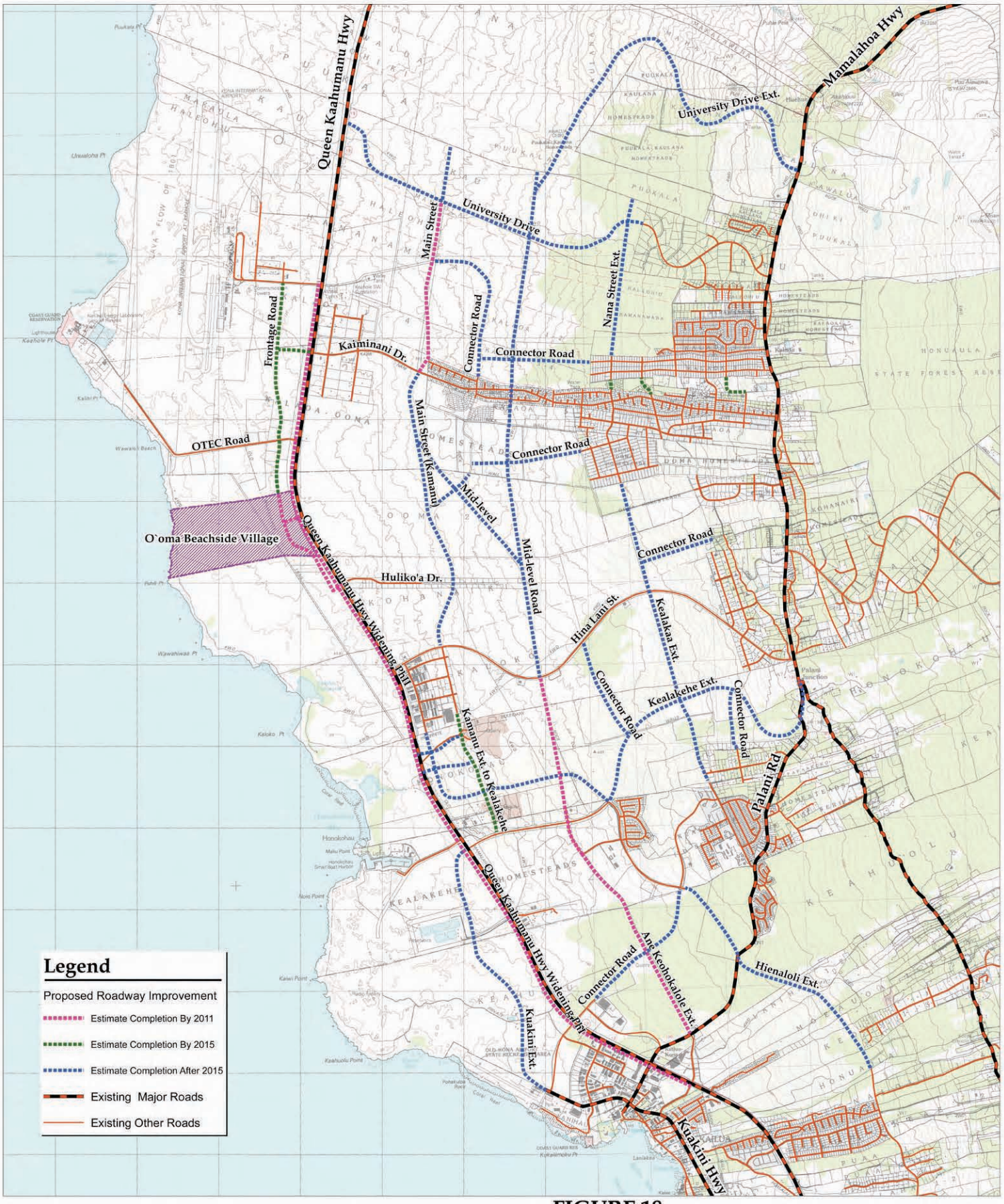


FIGURE 18
Regional Roadway Improvements
`O`oma Beachside Village

`O`oma Beachside Village LLC — ISLAND OF HAWAII

NORTH

LINEAR SCALE (FEET)
1,200 0 1,200 2,400 4,800

PBR HAWAII & ASSOCIATES, INC.

This figure has been complied from generally available information, including County of Hawaii Keahole to Honaunau Regional Circulation Plan (County of Hawaii 2006), the Kona Community Development Plan—Complete Pre-final April 17, 2008 (County of Hawaii 2008), regional development proposals, and newspaper articles. It intended for general information regarding proposed regional roadway improvements.

This graphic has been prepared for general planning purposes only.

Road in the north to merge with Kuakini Highway in the south. The highway is part of State Routes 11 and 19 that form part of the circle island route.

Queen Ka'ahumanu Highway is a two-way, two-lane Class I State highway with limited access and a design speed of 70 miles per hour. Intersections on this highway are fully channelized and signalized where warranted, including the intersections with Ka'iminani Drive and Hina Lani Streets. The highway is within a 300-foot right-of-way (ROW).

Ka'iminani Drive – Ka'iminani Drive is a collector road within a 60-foot ROW that serves the Kona Palisades subdivision and also provides mauka-makai access between Queen Ka'ahumanu Highway and Māmalahoa Highway. The Ka'iminani Drive/Queen Ka'ahumanu Highway intersection is signalized.

OTEC Road (NELHA Access Road) – OTEC Road provides access to NELHA and the shoreline. The OTEC Road/Queen Ka'ahumanu Highway intersection is channelized but not signalized.

Huliko'a Drive – Huliko'a Drive provides access to the Kohanaiki Business Park. The Huliko'a Drive/Queen Ka'ahumanu Highway intersection is channelized but not signalized.

Hina Lani Street – Hina Lani Street is a two-lane County secondary arterial road within an 80-foot ROW. It provides mauka-makai access between Queen Ka'ahumanu Highway and Māmalahoa Highway, and also serves the Kaloko Light Industrial subdivision. The Hina Lani Street/Queen Ka'ahumanu Highway intersection is signalized.

4.4.2 Existing Traffic

Currently, Queen Ka'ahumanu Highway experiences significant congestion in the vicinity during the day. Analysis of existing conditions indicates that there are two morning peak hours that reflect the commute of workers northbound from Kona to the Kohala resort area in the early morning, followed by the commute of other workers southbound to Kona later in the morning.

During the afternoon peak, traffic levels are about equal in each direction (southbound and northbound) in the first hour, while northbound traffic is much lighter in the second hour. Long traffic queues in the southbound lane occur in the early afternoon due to backup of traffic traveling to Kailua-Kona.

4.4.3 Current Traffic Issues

The State DOT is widening Queen Ka'ahumanu Highway from a two-lane highway to a four-lane divided highway from Henry Street in Kailua to Keāhole Airport Road at the Airport. Phase I of the expansion involves widening the highway from Henry Street to Kealakehe Parkway and is currently underway with substantial completion anticipated in December 2008. Phase II of the expansion involves widening the highway from Kealakehe Parkway to Keāhole Airport Road, with completion expected in 2011. The widened Queen Ka'ahumanu Highway is planned to include two through lanes in each direction, a northbound bicycle lane, and a southbound bicycle route/paved shoulder lane.

The widening of Queen Ka'ahumanu Highway is key to addressing existing congestion on Queen Ka'ahumanu Highway and to providing capacity for future growth in the Kona region. However, part of the reason for the existing congestion on Queen Ka'ahumanu Highway is the lack of parallel roadways that could provide paths for north/south circulation within the Keāhole/Kailua-Kona region. As a result, the existing Queen Ka'ahumanu Highway must serve regional, sub-regional, and local traffic. Related to the need for parallel north-south roadways is the need for mauka-makai roadways. These mauka-makai roadways would provide the ability for traffic to circulate between the regional, sub-regional, and local north-south roadways, allowing better use of the north-south roadways.

4.4.4 Planned Roadway Improvements

The State DOT and County of Hawai'i have many roadway improvements planned to meet the expected growth in the area. The *Keāhole to Hōnaunau Regional Circulation Plan County Action Plan* (August 2006) prepared by the County of Hawai'i Planning Department identifies specific improvements including the widening of Queen Ka'ahumanu Highway to the Airport and the development of an extensive roadway network mauka of the highway (see Figure 18 ~~17~~).

The State DOT is currently preparing for Phase II of the widening of the Queen Ka'ahumanu Highway to four lanes from Kealakehe Parkway to Keāhole Airport Road. The DOT intends to restrict access to the widened highway and permit fully accessible signalized intersections only at Kealakehe Parkway, Hina Lani Street, Huliko'a Drive (Kohanaiki), Ka'iminani Drive, and Keāhole Airport Road. Developments on the makai side of the highway may be permitted right turn in, right turn out movements onto the highway.

To support the limited access function of Queen Ka'ahumanu Highway, the draft Kona Community Development Plan proposes a frontage road (Frontage Road) makai of Ka'ahumanu Highway from the Airport to Honokōhau Harbor. The Frontage Road would provide a makai route parallel to Queen Ka'ahumanu Highway and would limit full Highway access points (i.e., intersections with all right and left turning movements) to signalized intersections at Keāhole Airport Road, Ka'iminani Drive, and Huliko'a Drive (Kohanaiki). If extended past Huliko'a Drive, additional full access intersections could include Hina Lani Street and Kealakehe Parkway.

The alignment of the Frontage Road though the makai properties (Kona International Airport, NELHA, 'O'oma Beachside Village, the Shores of Kohanaiki, etc.) will need to be coordinated with landowners. 'O'oma Beachside Village, LLC supports the Frontage Road and has incorporated the Frontage Road as an integral element of 'O'oma Beachside Village. ~~With~~ Until the the Frontage Road is completed between 'O'oma Beachside Vilage and one of the above signalized intersections, direct access from 'O'oma Beachside Village to Queen Ka'ahumanu Highway would be limited to a "right turn in, right turn out" intersection located approximately at the center of the eastern Property boundary. 'O'oma Beachside Village residents would be able to access Queen Ka'ahumanu Highway via the Frontage Road at full intersections at Ka'iminani Drive (north), and Huliko'a Drive (south).

To further distribute north/south traffic off Queen Ka‘ahumanu Highway, an expanded roadway network mauka of the highway will create more mauka-makai roadways between Queen Ka‘ahumanu Highway and Māmalahoa Highway and create more north-south roadways between these two existing highways (see Figure 18 ~~17~~).

A timetable for the development of these new roadways has not been established, but would be tied in to new projects being built along the roadway alignments. However, the ~~draf~~t Kona Community Development Plan has developed a priority list for roadway projects in this area:

- Keanalehu Street-Manawale‘a Street connection
- Ane Keohokalole Highway Extension (Mid-level road) in stages from Palani Road to Ka‘iminani Drive
- Kamanu Street Extension
- Kealakaa Street Extension
- Hienaloli Street Extension
- University Drive
- Queen Ka‘ahumanu Highway widening, Phase II

POTENTIAL IMPACTS AND MITIGATION MEASURES

An objective of ‘O‘oma Beachside Village is to provide homes near workplaces, thereby increasing quality of life through decreasing commuting. Many employees at Kohala resorts currently commute from other regions. Providing homes nearer the major resorts to the north is expected to decrease commuting through Kailua-Kona, lessen traffic congestion, reduce stress, allow more family and recreation time, lessen pollution, and improve overall quality of life for not only ‘O‘oma Beachside Village residents, but for West Hawai‘i residents in general.

Another objective of ‘O‘oma Beachside Village is to encourage alternative modes of travel, other than cars, to travel through the community. The traditional neighborhood design of ‘O‘oma Beachside Village serves to minimize trips onto Queen Ka‘ahumanu Highway as many essential services needed by ‘O‘oma Beachside Village residents will be within walking and biking distance, such as stores, restaurants, and parks. Thus, unlike in a conventional subdivision, ‘O‘oma Beachside Village residents will not need to drive to areas outside of ‘O‘oma Beachside Village for all their daily needs. Walking and bicycling will be a way of life for ‘O‘oma Beachside Village residents.

The traditional neighborhood design of ‘O‘oma Beachside Village will also contribute to the feasibility of public transportation by providing a concentrated population within a walkable community, thus enabling many people to walk a short distance to get to a transit stop. ‘O‘oma Beachside Village, LLC will work with State and County agencies to pursue regional transit options and is committed to exploring the designation of a transit station within ‘O‘oma Beachside Village.

Despite these positive transportation strategies, it is recognized that many of these potential positive impacts are not quantifiable or predictable. To gain an understanding of future regional traffic impacts through the build-out of ‘O‘oma Beachside Village, the TIAR analyzed traffic conditions using standard traffic engineering methods and projected future growth in traffic conditions both with and without ‘O‘oma Beachside Village.

To comply with concurrency conditions of County of Hawai'i Ordinance 07-99 (Section 25-2-46, Hawai'i County Code (HCC)), the TIAR analyzed three forecast years: 2015, 2020 and 2029. During the three periods, the ambient or background traffic on Queen Ka'ahumanu Highway can be expected to increase due to regional growth and new projects in the area. Traffic patterns would also change as new roadways are placed in operation. Projected traffic generated from 'O'oma Beachside Village was added to the projected ambient traffic conditions to obtain the total with project traffic forecast.

Ambient Traffic

To project future regional ambient traffic (without 'O'oma Beachside Village) the results of several traffic impact analysis reports for proposed projects in the area were analyzed in relation to projected conditions for Queen Ka'ahumanu Highway at Ka'iminani Drive, the OTEC Road, Huliko'a Drive, and Hina Lani Street for the three forecast years as follows:

Ka'iminani Drive – By 2015, large traffic increases are forecast for the Ka'iminani Drive/ Queen Ka'ahumanu Highway intersection because the mauka network of roadways is not assumed to be well developed by then. By 2020, traffic is expected to increase by 1.3 percent over the 2015 projections, which represents a 4.83 percent annual growth rate. Conservatively, only 20 percent of this growth is projected to be routed to the then incomplete mauka roadway network. By 2029, traffic is expected to increase by five percent over the 2020 volumes, which represents a 4.83 percent annual growth with 28 percent being routed to the then more complete mauka roadway network.

OTEC Road – Currently this road experiences a sharp inbound peak in the morning and a sharp outbound peak in the afternoon reflecting the commuting behavior of traveling to work in the morning and leaving work in the afternoon. However, these peak hours include less than 100 vehicles per hour in the peak direction. Traffic volumes at other times are low. For the forecast years, entering and exiting peak hour volumes were increased by three percent annually. After the Frontage Road is completed, it is anticipated that this intersection will only provide right turn in, right turn out access to Queen Ka'ahumanu Highway.

Huliko'a Drive – This intersection is currently unsignalized but there are plans to make this a fully accessible signalized intersection with the widening of Queen Ka'ahumanu Highway. In addition, it is assumed that this intersection will be a four-way signalized intersection to provide access to the Shores at Kohanaiki and the Frontage Road. Kohanaiki Business Park is accessed by Huliko'a Drive on the mauka side of the highway and it was assumed to be fully occupied by 2015. With the build-out of Kohanaiki Business Park and the completion of the Shores at Kohanaiki, large increases in traffic volumes are anticipated at this intersection.

Hina Lani Street – By 2015, traffic is expected to increase by the annual growth rate of 4.83 percent. By 2020, traffic is expected to increase by 1.3 percent over the 2015 projections similar to Ka'iminani Drive. This increase includes traffic from the proposed Kula Nei Residential development and the proposed Kaloko Heights subdivision. By 2029, traffic is expected to increase by five percent over the 2020 volumes.

Project-Generated Traffic

The traditional three-step process of trip generation, trip distribution, and trip assignment was used to forecast future traffic that would be generated by 'O'oma Beachside Village. The project-generated trips were distributed by three primary directions of travel: 1) north of the Property; 2) south of the Property; and 3) internal to the Property. Analysis indicated that trips north and south of the Property would be distributed 55 percent south and 45 percent north. The trip assignment analysis assigned the trips to specific turning movements at the study intersections.

The analysis estimates that by 2015, 'O'oma Beachside Village is projected to generate 187 outbound and 131 inbound trips in the morning peak hour, and 310 inbound and 243 outbound trips in the afternoon peak hour. In 2020, 'O'oma Beachside Village is projected to generate 445 outbound and 421 inbound trips in the morning peak hour, and 656 inbound and 701 outbound trips in the afternoon peak hour. At build-out in 2029, 'O'oma Beachside Village is projected to generate 884 outbound and 906 inbound trips in the morning peak hour, and 1,023 inbound and 1,128 outbound trips in the afternoon peak hour.

With trips distributed regionally and turning movements for study intersections calculated, the analysis concludes the following:

Ka'iminani Drive – The analysis for the Queen Ka'ahumanu Highway/Ka'iminani Drive intersection indicates that this intersection could operate at acceptable levels of service[9] with mitigation measures for the ambient traffic forecasts. These include: 1) double left turn lanes on the Ka'iminani Drive westbound approach by 2015; and 2) double left turn lanes on the Queen Ka'ahumanu Highway southbound approach and double right turn lanes on the Queen Ka'ahumanu Highway northbound approach by 2020. Additional mitigating measures would not be required to accommodate traffic generated from 'O'oma Beachside Village.

OTEC Road – With the Frontage Road, the Queen Ka'ahumanu Highway/OTEC Road intersection is expected to be unsignalized and limited to right turn in, right turn out movements. For each of the forecast years, the intersection is projected to operate at acceptable levels of service. Traffic generated by 'O'oma Beachside Village would not have an adverse traffic impact on this intersection or highway operations.

'O'oma Access Road (new road providing access to 'O'oma Beachside Village) – ~~With~~ Until the Frontage Road is completed between 'O'oma Beachside Village and one of the above referenced signalized intersections, direct access to 'O'oma Beachside Village is expected to be via a~~, the~~ new Queen Ka'ahumanu Highway/'O'oma Access Road intersection, which is expected to be unsignalized and limited to right turn in, right turn out movements. For each of the forecast years, the intersection is projected to operate at acceptable levels of service. This

[9] Hawai'i County Code (HHC) Section 25-2-46 defines "level of service" as a qualitative measure describing operational conditions within a traffic stream as determined using the procedures of the latest edition of the Highway Capacity Manual of the Transportation Research Board. Section HHC 25-2-46 defines "acceptable level of service" to mean that the level of service of a transportation facility at the AM and PM peak is "D" or better. The Transportation Research Board defines six levels of service with "A" being the least congested conditions and "F" being the most congested conditions. LOS "E" represents "at capacity" operations.

indicates that the traffic generated by ‘O‘oma Beachside Village at this intersection would not have an adverse traffic impact on highway operations.

Huliko‘a Drive – The analysis for the Queen Ka‘ahumanu Highway/Huliko‘a Drive intersection indicates that this intersection would be impacted by traffic generated from ‘O‘oma Beachside Village and would require mitigation to operate at acceptable levels of service. Mitigation measures include having double left turn lanes on the Queen Ka‘ahumanu Highway northbound approach by 2015, and double left turn lanes on Huliko‘a Drive westbound approach by 2029.

Hina Lani Street – The analysis for Queen Ka‘ahumanu Highway/Hina Lani Street intersection indicates an acceptable level of service for the 2015 ambient without project and with the project forecasts. Mauka residential projects will generate the need for a double left turn lane on the westbound approach of Hina Lani Street by 2020. Additional traffic generated by the ‘O‘oma Beachside Village would not trigger the need for any additional mitigation. ‘O‘oma Beachside Village is not expected to contribute to adverse traffic impacts at the Hina Lani Street intersection until after 2020. By 2029, the additional traffic from ‘O‘oma Beachside Village would require mitigation to maintain acceptable level of service for the intersection. A double left turn lane on the southbound highway approach would be necessary.

Queen Ka‘ahumanu Highway Analysis – The analysis for the overall operation of Queen Ka‘ahumanu Highway indicates that the highway will operate at acceptable levels of service with the highway widening. There is no difference between the ambient without project and the total with project results, indicating that the traffic generated by ‘O‘oma Beachside Village will not have an adverse traffic impact on this aspect of the highway operations.

Conclusions

Traffic on Queen Ka‘ahumanu Highway is expected to increase even if ‘O‘oma Beachside Village is not built. The State DOT and County of Hawai‘i have many roadway improvements planned to meet the expected growth in the area and distribute north/south traffic off Queen Ka‘ahumanu Highway to an expanded roadway network mauka of the highway (Figure 18 ~~17~~).

‘O‘oma Beachside Village will be part of the regional solution to address congestion and improve traffic circulation on Queen Ka‘ahumanu Highway by working cooperatively with the State, County, and adjoining landowners to plan and develop its portion of a Frontage Road makai of, and parallel to, Queen Ka‘ahumanu Highway.

The widening of Queen Ka‘ahumanu Highway, the Frontage Road, and the development of the mauka roadway network would accommodate much of the anticipated growth in the North Kona region. The highway system is expected to operate at acceptable levels of service in the forecast future.

The ‘O‘oma Beachside Village is not expected to have a fully accessible intersection connection with the widened Queen Ka‘ahumanu Highway; however, the Frontage Road will allow access to fully accessible intersections at Ka‘iminani Drive and Huliko‘a Drive. These intersections would require mitigating measures to accommodate the ambient forecast traffic. The additional traffic generated by the ‘O‘oma Beachside Village would require further mitigating measures to

maintain acceptable levels of service at the Huliko‘a Drive and Hina Lani Street intersections including the following.

- Huliko‘a Drive - a double left turn lane on the northbound highway approach by 2015.
- Huliko‘a Drive - a double left turn lane on the westbound approach by 2029.
- Hina Lani Street - a double left turn lane on the southbound highway approach by 2029.

The need for mitigating measures to accommodate ‘O‘oma Beachside Village generated traffic by 2029 should be considered speculative due to the uncertainties associated with such a long forecast period, including: 1) whether or not other development projects in the region are built or are built with as many units as currently anticipated; 2) the implementation of the mauka roadway network as currently planned; 3) how much turning movement traffic is diverted to the mauka roadway system as it is completed; and 4) the level of mitigating measures provided by other projects in the region that could mitigate the amount and impact of ambient.

The TIAR analyzed traffic conditions using standard traffic engineering methods; however, the traditional neighborhood design of ‘O‘oma Beachside Village is expected to reduce overall traffic impact. Many of these potential positive impacts of the ‘O‘oma Beachside Village design are not quantifiable or predictable using standard traffic engineering methods. Due to the walkability of ‘O‘oma Beachside Village’s traditional town plan, many trips may be captured on-site, rather than become external trips. Since standard traffic engineering trip-generation rates (from the Institute of Transportation Engineers) are based on data collected in suburbs where automobiles are essential for every trip, these rates may underestimate the number of trips that will remain on-site in a walkable community such as ‘O‘oma Beachside Village, which in turn may overestimate the number of trips that will travel the regional roadway network, primarily Queen Ka‘ahumanu Highway. In other words, any potential traffic reductions due to the ‘O‘oma Beachside Village design are not accounted for in the TIAR and proposed mitigation measures are not minimized to take into account any less traffic compared to a standard, conventional development. Therefore, the TIAR represents a conservative analysis of the expected traffic conditions.

4.5 KONA INTERNATIONAL AIRPORT AT KEĀHOLE

Kona International Airport at Keāhole (Airport) located one mile north of the ‘O‘oma Beachside Village property, occupies 3,450 acres of land. The Airport has a single 11,000-foot runway (Runway 17/35) and a complex of facilities at the eastern edge of the airfield for arriving and departing passengers, air cargo and mail, airport support, and general aviation operations. The airport is accessed from Queen Ka‘ahumanu Highway.

The Airport serves the West Hawai‘i region, including the major population center Kailua-Kona and visitor industry hotel properties along the Kohala Coast and within the Kailua-Kona region. With over 3.03 million passengers in 2006, the Airport is the third busiest airport in the State behind Honolulu International Airport and Kahului Airport.

The Airport accommodates domestic overseas, international, interisland, commuter/air taxi, and general aviation activities. As of August 2006, there were nine commercial passenger airline carriers with scheduled service to and from the Airport. Aircraft utilized by the commercial

airline carriers range from the Canadair Regional Jet CRJ-200 to the Boeing 777. The commercial passenger airlines include: Hawaiian Airlines, Island Air, go! (Mesa Airlines), American Airlines, Delta Airlines, Japan Airlines (JAL), Northwest Airlines, United Airlines, and US Airways.

The Airport's 11,000-foot runway meets the existing needs of the commercial passenger and cargo aircraft. The present length of 11,000 feet would also be adequate for the newer A380-800 and B747-8 jumbo jets.

There are no avigation easements over the Property. Occasionally, depending on weather, visibility, or air traffic conditions, helicopter and light, fixed wing aircraft may cross over the Property. The flight tracks of noisier jet aircraft typically remain west of Property and are aligned with the Airport's single runway.

POTENTIAL IMPACTS AND MITIGATION MEASURES

'O'oma Beachside Village and the Airport operations are not expected to negatively impact each other. If necessary, 'O'oma Beachside Village will work with DOT regarding any necessary avigation easement. Potential Airport-related impacts and mitigation measures regarding noise (Section 4.6) and air quality (Section 4.7) are discussed in following sections.

Based on DOT concerns that certain landscaping and water features should not become a bird/wildlife attractant or habitation that may result in interference with aircraft flight, landscaping at 'O'oma Beachside Village will include native species presently found on the Property, as well as similar plants already used extensively at the Airport. 'O'oma Beachside Village, LLC will work with DOT engineering staff to comply with airport safety requirements and design any landscaping to discourage the attraction of birds or use as a nesting/breeding ground for other creatures that can cause or create hazards to aircraft flight. A management and control plan for bird/wildlife attractant and habitation mitigation will be submitted to the DOT Airports for approval. Generally, plants with fruit and berries attract birds; therefore, 'O'oma Beachside Village will minimize the use of these types of plantings.

In compliance with Title 14 of the Code of Federal Regulations (CFR), part 77, 'O'oma Beachside Village, LLC will complete a Federal Aviation Administration (FAA) Form 7460-1 (Notice of Proposed Construction or Alteration) for proposed 'O'oma Beachside Village buildings and structures. All buildings and structures at 'O'oma Beachside Village will conform to height limitations within runway approach zones; therefore, it is expected that the FAA will issue a "Determination of No Hazard to Air Navigation."

4.6 NOISE

Y. Ebisu & Associates prepared an acoustic study to: 1) describe the existing and future noise environment in the environs of 'O'oma Beachside Village; and 2) provide recommendations for minimizing noise impacts. Appendix F contains the complete acoustic study.

Sources of noise in the vicinity of the 'O'oma Beachside Village area stem from:

- Aircraft flying to/from the Kona International Airport at Keāhole.

- Traffic traveling along Queen Ka'ahumanu Highway and other surrounding roads.
- Natural sources, such as wind, rain, and the ocean.

The noise descriptor used by federal agencies (such as the Federal Housing Administration, Housing and Urban Development (FHA/HUD), Federal Aviation Administration (FAA) and the Department of Transportation) to assess environmental noise is the Day-Night Average Sound Level (DNL or Ldn). These measures are also used by the Hawaii State Department of Transportation. The DNL values represent the average noise during a typical day of the year.

DNL exposure levels of 55 or less are typical of quiet rural or suburban areas. DNL exposure levels of 55 to 65 are typical of urbanized areas with medium to high levels of activity and street traffic. DNL exposure levels above 65 are representative of densely developed urban areas and areas fronting high volume roadways.

4.6.1 Road Traffic Noise

The existing traffic noise levels in the Property vicinity vary from levels of approximately 64 DNL along the mauka (east) property boundary, to less than 45 DNL at the makai (west) property boundary and interior locations. Traffic noise levels along Queen Ka'ahumanu Highway are less than 65 DNL at 180 feet or greater from the highway centerline. At the west boundary of the Property, which adjoins the shoreline, existing traffic noise levels are very low and less than 45 DNL. At the interior portions of the Property traffic noise levels are low (less than 45 DNL) due to distances from Queen Ka'ahumanu Highway. At these interior locations, aircraft noise and the natural sounds of surf, birds, and wind in foliage are the dominant noise sources.

4.6.2 Aircraft Noise

Aircraft noise sources in the Property environs are associated with aircraft operations at the Airport. Figure ~~18~~ 19 shows the existing aircraft noise contours over the Property.[10] As can be seen in Figure ~~18~~ 19: 1) the 65 DNL line is roughly along the shoreline; 2) the 60 DNL line extends across the proposed coastal preserve area; 3) and the 55 DNL line extends somewhat diagonally across the Property on the mauka side of the Makai Village.

Under FAA and FHA/HUD noise compatibility guidelines, dwelling units (houses and apartments) are acceptable in areas below the 65 DNL noise contour. Commercial uses, such as offices and businesses, and public uses, such as schools and churches, are also acceptable in areas below the 65 DNL contour.

[10] Y. Ebisu & Associates prepared the existing aircraft noise contours shown in Figure 18 ~~17~~ in 2008 for the 'O'oma Beachside Village acoustic study (Appendix H). The most recent 14 CFR Part 150 noise contours for the Airport were completed in 1997 and reflect conditions through 2001. The DOT is currently updating the airport noise contours in conjunction with the 14 CFR Part 150 update for the Airport. The DOT's draft noise contours for 2008, 2013, and 2030 are included in the 'O'oma Beachside Village acoustical study (Appendix H) for comparison with the estimated noise contours developed by Y. Ebisu & Associates. Since completion of the 'O'oma Beachside Village acoustic study, DOT has revised their draft projected noise contours. DOT's revised draft projected noise contours are similar to the estimated noise contours developed by Y. Ebisu & Associates and contained in O'oma Beachside Village acoustic study.

The State DOT Airports Division noise compatibility guidelines are more restrictive. Naturally ventilated homes are not recommended within or above the 60 to 65 DNL contours. If homes are within the 60 to 65 DNL contours, noise level reduction measures, such as insulation and air conditioning, are recommended to achieve interior levels of 45 DNL or less. Commercial uses and most public uses (with the exception of schools and churches) are acceptable in areas below the 65 DNL contour. Schools and churches are acceptable in areas below the 60 DNL contour.

Under both the FAA and the State DOT Airports Division airport noise compatibility guidelines, homes and other uses, such as schools and businesses, located below the 55 DNL contour are considered compatible and “unconditionally acceptable.”

The acoustic study concludes that existing aircraft noise levels over the Property are compatible with the proposed land uses of ‘O‘oma Beachside Village.

POTENTIAL IMPACTS AND MITIGATION MEASURES

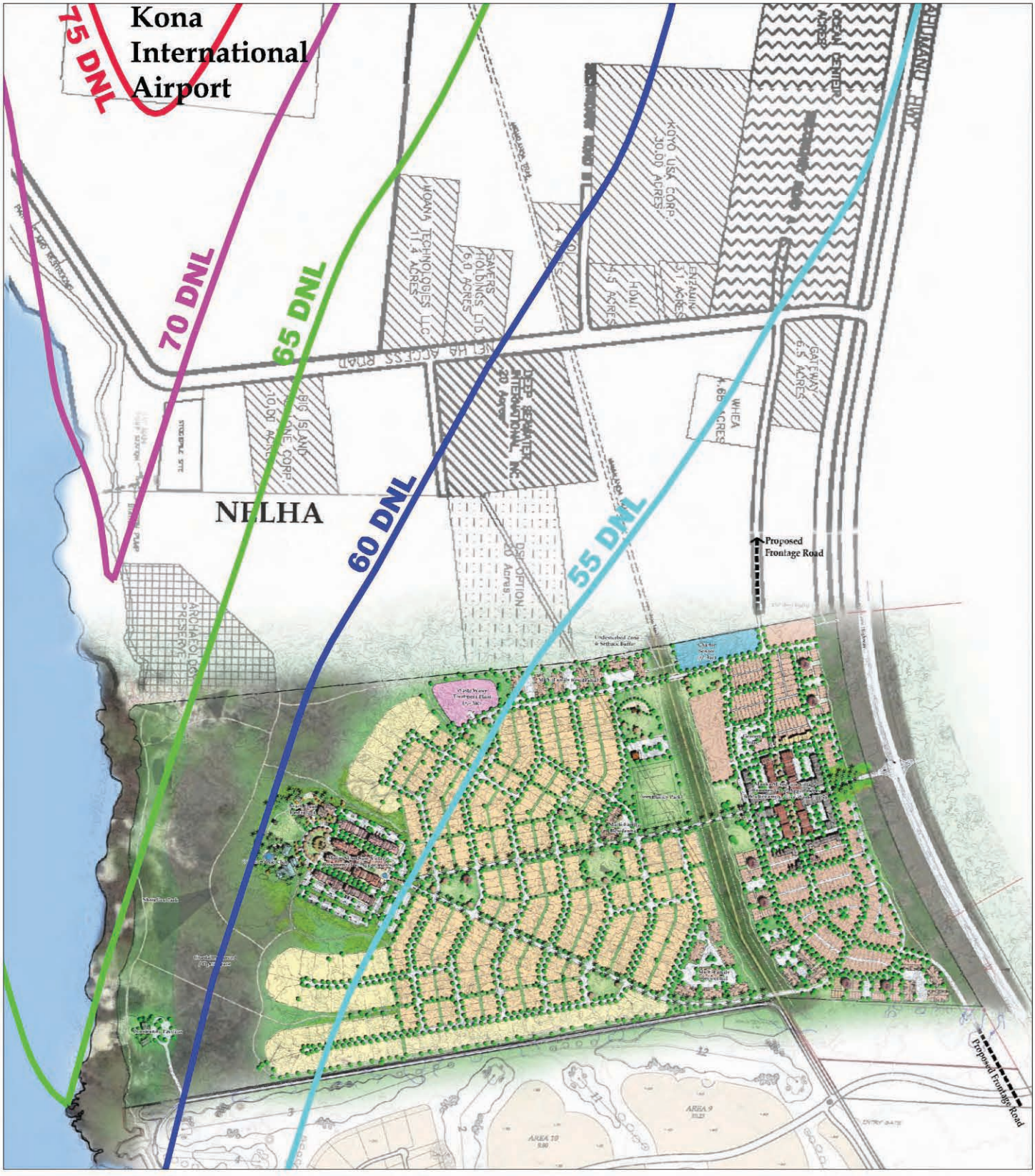
Potential impacts on the ambient quality of the site and surrounding area due to the creation of the ‘O‘oma Beachside Village are primarily limited to short-term construction activity and, in the long-term, human activity within the community and increases in traffic. Planning of ‘O‘oma Beachside Village has taken into account potential aircraft noise impacts on uses within ‘O‘oma Beachside Village.

Short-term Construction Noise – During construction, there will likely be noise impacts associated with operation of heavy construction machinery, paving equipment, and material transport vehicles. Proper mitigating measures will be employed to minimize construction-related noise impacts and comply with all Federal and State noise control regulations. Increased noise activity due to construction will be limited to daytime hours and persist only during the construction period. Noise from construction activities will be short-term and will comply with DOH noise regulations (HAR, Chapter 11-46, Community Noise Control). When construction noise exceeds, or is expected to exceed the DOH’s allowable limits, a permit must be obtained from the DOH. Specific permit restrictions for construction activities are:

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

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

Long-term Traffic Noise – The acoustic study concludes that traffic noise increases due to traffic generated from ‘O‘oma Beachside Village are considered to be insignificant. Because of relatively high noise levels along Queen Ka‘ahumanu Highway and the planned widening of the highway, a 150-foot wide buffer is planned for ‘O‘oma Beachside Village. This buffer will be an



Legend

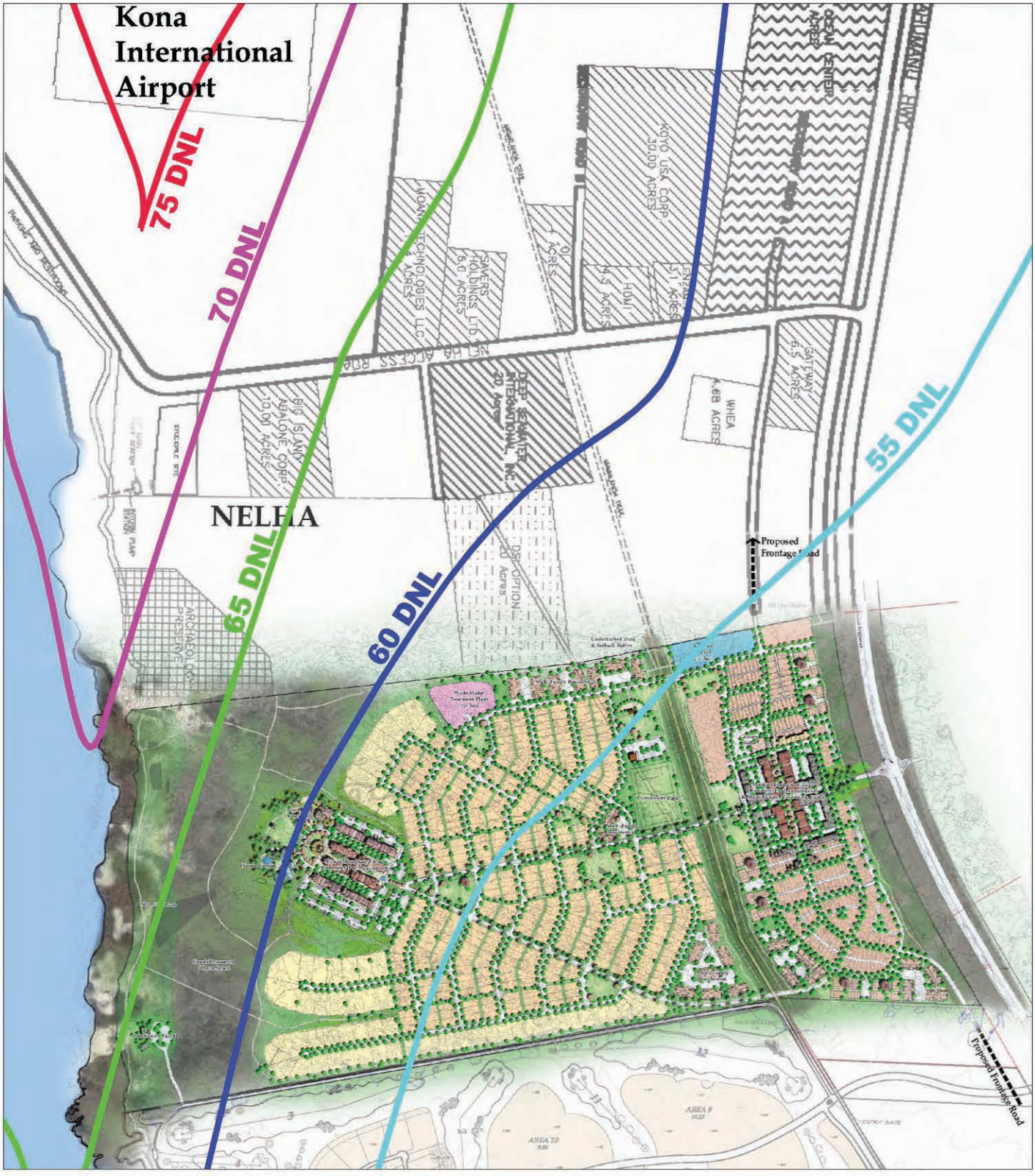
- 75 DNL
- 70 DNL
- 65 DNL
- 60 DNL
- 55 DNL

Source: Y. Ebisu & Associates
Disclaimer: This graphic has been prepared for general planning purposes only.

FIGURE 19
Existing Aircraft Noise Contours
'O'oma Beachside Village
'O'oma Beachside Village, LLC
ISLAND OF HAWAI'I

NORTH
LINEAR SCALE (FEET)
0 450 900 1,800

PBR HAWAII & ASSOCIATES, INC.



Legend

- 75 DNL
- 70 DNL
- 65 DNL
- 60 DNL
- 55 DNL

Source: Y. Ebisu & Associates
Disclaimer: This graphic has been prepared for general planning purposes only.

FIGURE 20
2013 Estimated Aircraft Noise Contours
'O'oma Beachside Village
'O'oma Beachside Village, LLC
ISLAND OF HAWAI'I

NORTH

LINEAR SCALE (FEET)
0 450 900 1,800

PBR HAWAII & ASSOCIATES, INC.

Legend

- 75 DNL
- 70 DNL
- 65 DNL
- 60 DNL
- 55 DNL

Source: Y. Ebisu & Associates
Disclaimer: This graphic has been prepared for general planning purposes only.

FIGURE 21
2030 Estimated Aircraft Noise Contours
'O'oma Beachside Village

'O'oma Beachside Village, LLC
ISLAND OF HAWAI'I

NORTH
LINEAR SCALE (FEET)
0 450 900 1,800

PBR HAWAII & ASSOCIATES, INC.

effective traffic noise mitigation measure, and will keep future traffic noise levels from exceeding FHA/HUD noise standards.

Noise levels along the Frontage Road could exceed FHA/HUD noise standards for residential uses; however it is expected that any residential structures along the Frontage Road would either have an adequate setback so as to not be impacted, or impacts could be mitigated. Air conditioning is a typical means of sound attenuation for traffic noise, particularly on upper floors.

Aircraft Noise – All uses within ‘O‘oma Beachside Village, including homes, the school, and businesses, are located in accord with current FAA and State DOT airport noise compatibility guidelines. The current FAA-approved (14 CFR Part 150) noise contours for the Airport were completed in 1997 and reflect conditions through 2001. The DOT is currently updating the airport noise contours in conjunction with the 14 CFR Part 150 update for the Airport. The 14 CFR Part 150 update has not yet been completed or submitted to the FAA for approval. Consequently, the revised airport noise contours have not yet been approved by the FAA. ‘O‘oma Beachside Village will comply with all FAA and State DOT airport noise compatibility guidelines in effect at the time of building permit approval for any ‘O‘oma Beachside Village structure.

Projections of increases of airport noise for the years 2013 and 2030 were developed using operational forecasts, existing aircraft flight tracks for the existing runway, and assumed flight tracks for a proposed new runway. Potential noise impacts from additional military operations at the Airport were also investigated. Figure ~~19~~ 20 shows the 2013 estimated aircraft noise contours over the Property and Figure ~~20~~ 21 shows the 2030 estimated aircraft noise contours over the Property.[11] As shown for both 2013 and 2030, the 60 DNL contour will not extend into ‘O‘oma Beachside Village residential areas. Under both FAA and State DOT airport noise compatibility guidelines dwelling units (houses and apartments) are acceptable in areas below the 60 DNL noise contour.

By 2013 a small portion of the Makai Village commercial area may be above the 60 DNL contour; however commercial uses within the 60 DNL contour are acceptable. The areas of the coastal preserve and shoreline park will be above the 60 DNL line. Locating recreational uses within areas above the 60 DNL contour is acceptable and is usually encouraged, since this tends to preclude future development of noise sensitive uses on the same lands.

The acoustic study concludes that because noise sensitive uses are located outside the existing and forecasted 60 DNL noise contour, risks of adverse aircraft noise impacts have been reduced to acceptable levels. The acoustic study also concludes that special aircraft noise attenuation measures should not be considered mandatory for ‘O‘oma Beachside Village. However, the Hawai‘i State Department of Transportation-Airports Division recommends that disclosures be given in any real property transaction for areas above the 55 DNL.

[11] Y. Ebisu & Associates prepared the projected aircraft noise contours shown in Figure 20 and Figure 21 for the ‘O‘oma Beachside Village acoustic study. The DOT is currently updating the projected airport noise contours in conjunction with the 14 CFR Part 150 update for the Airport. The 14 CFR Part 150 update has not yet been completed or submitted to the FAA for approval.

4.7 AIR QUALITY

B.D. Neal & Associates prepared an air quality study to: 1) describe existing air quality in the area; 2) assess the potential short- and long-term direct and indirect air quality impacts that could result from 'O'oma Beachside Village; 3) recommend measures to mitigate possible impacts where possible and appropriate. The air quality study is summarized below. Appendix I contains the full study.

Regional and local climate together with the amount and type of human activity generally dictate the air quality of a given location. The climate in the vicinity of Property is very much affected by its near coastal situation and by nearby mountains. Winds are predominantly light and variable, although kona storms generate occasional strong winds from the south or southwest during winter. Temperatures are generally very consistent and moderate with average daily temperatures ranging from about 65°F to 85°F. Average annual rainfall in the area amounts to about 25 inches with each month typically contributing about 2 inches.

Hawai'i Island is unique from its neighbor islands in terms of the natural volcanic air pollution emissions that occur. Volcanic emissions periodically plague the region. This is especially so since the latest eruption phase of Kīlauea Volcano began in 1983. Air pollution emissions from the volcano consist primarily of sulfur dioxide. Although emissions from Kīlauea are vented on the other side of the mountain barrier over 50 miles east of the Property, the prevailing wind patterns eventually carry some of the emissions into the Kona area. These emissions can be seen in the form of a volcanic haze (vog), which persistently hangs over the area.

The present air quality in the vicinity of Property is believed to be relatively good except for periodic impacts from volcanic emissions (vog) and possibly occasional localized impacts from traffic congestion. Air quality data from the Department of Health indicate that concentrations are well within state and national air quality standards (despite the vog). Besides vog, other sources of potential air pollution in the area are traffic and the Keāhole Power Plant, mauka of the Airport.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Creation of 'O'oma Beachside Village may result in short and long-term impacts on air quality either directly or indirectly as a consequence of construction and use. However, it is anticipated that no Federal or State air quality standards will be violated as a result of 'O'oma Beachside Village.

Short-term Impacts – Short-term impacts from fugitive dust will likely occur during construction. Construction will include earthmoving activity, excavating, trenching, and filling. To a lesser extent, exhaust emissions from stationary and mobile construction equipment, from disruption of traffic, and from workers' vehicles may also affect air quality during the period of construction.

A dust control plan will be implemented during all construction phases. All construction activities will comply with the provisions of Chapter 11-60.1-33, HAR on fugitive dust. Measures to control dust during may include:

- Planning phases of construction to minimize the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of least impact.
- Watering active work areas and any temporary unpaved work roads daily.
- Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase.
- Minimizing dust from shoulders and access roads.
- Providing adequate dust control measures during weekends, after hours and before daily start-up of construction activities.
- Controlling dust from debris being hauled away.
- Using wind screens and/or limiting the area of disturbance at any given time.
- Covering dirt-hauling trucks traveling on roadways.
- Preventing trucks from tracking dirt onto paved roadway by routine road cleaning and/or tire washing.
- Establishing landscaping early in the construction schedule.
- Monitoring dust at the Property boundary during the construction period as a means to evaluate the effectiveness of the dust control program, and adjusting the program if necessary.

Long-term Impacts – After construction, motor vehicles coming to and from 'O'oma Beachside Village will result in a long-term increase in emissions; however, it is expected that concentrations will remain well within State and Federal standards.

To assess the impact of emissions from vehicles, a computerized air quality modeling study was undertaken to estimate current ambient concentrations of carbon monoxide at roadway intersections in the vicinity and to predict future levels both with and without 'O'oma Beachside Village.

During worst-case conditions, model results indicated that present one-hour and eight-hour carbon monoxide concentrations are within both the State and Federal ambient air quality standards. In the year 2029 without the project, carbon monoxide concentrations were predicted to increase in the area, but concentrations should remain within State and Federal standards. With 'O'oma Beachside Village in the year 2029, carbon monoxide concentrations were estimated to increase by about 10 to 20 percent compared to the without-project case, but worst-case concentrations should remain within both State and Federal standards.

The air quality study concludes that implementing mitigation measures for traffic-related air quality impacts is probably unnecessary and unwarranted.

Electrical Demand and Solid Waste Disposal – The air quality study concludes that significant long-term impacts on air quality are unlikely due to indirect emissions associated with the community's electrical power and solid waste disposal requirements. Nevertheless, 'O'oma Beachside Village will include energy conservation strategies and conservation and recycling programs to further reduce any associated impacts and conserve the island's resources.

4.8 VISUAL RESOURCES

The Property is currently vacant, sparsely vegetated, and slightly sloped from Queen Ka'ahumanu Highway to the shoreline. There are few distinguishing landmarks on the Property that can be detected over a distance of 100 yards or more, other than an occasional tree or shrub. The dominant landscape feature is black-grey pāhoehoe lava sparsely covered with widely distributed yellow-brown fountain grass. Other visible vegetation includes noni plants and maiapilo.

From the Property looking mauka, Hualālai defines the scenic resources east of the Property.

Along Queen Ka'ahumanu Highway between Keāhole Point and Honokōhau Small Boat Harbor, the Property is visible for short periods of time.

From the southbound direction beginning at the NELHA Access Road intersection, the Property and ocean are visible; however, the shoreline is not visible since it is obscured by the terrain.

Further along in the southbound direction, looking makai, the Property is only briefly visible. The ocean is visible, but the shoreline is still not visible, as it is obscured by the terrain, which also blocks views of the makai portion of the Property. In this area the elevation of the highway is depressed relative to the land makai of the highway, and all makai views are blocked by a berm or by vegetation. The berm is a remnant from grading conducted for the construction of Queen Ka'ahumanu Highway. A cut in the lava flow created the width of the highway and its shoulder, so the elevation of the highway for most of the length the Property is several feet below that of the berm. Figure ~~21~~ 22 provides a visual analysis.

From the northbound direction on Queen Ka'ahumanu Highway from Hina Lani Street, views toward the Property and ocean are available. Approaching the Property boundary in a northbond direction along Queen Ka'ahumanu Highway, makai views become obscured by the berm.

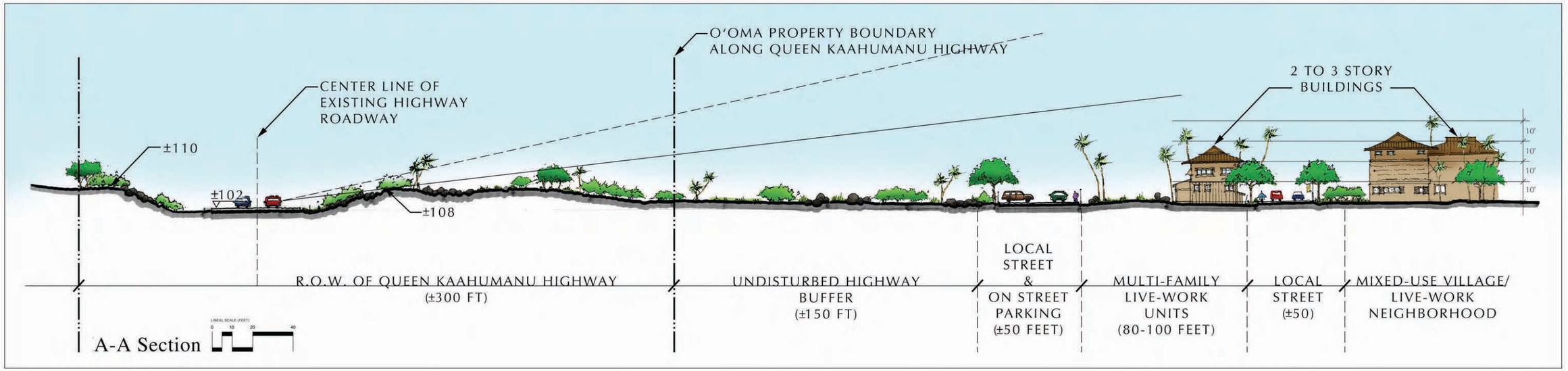
~~The Property is not included within significant view corridors for North Kona.[12]~~

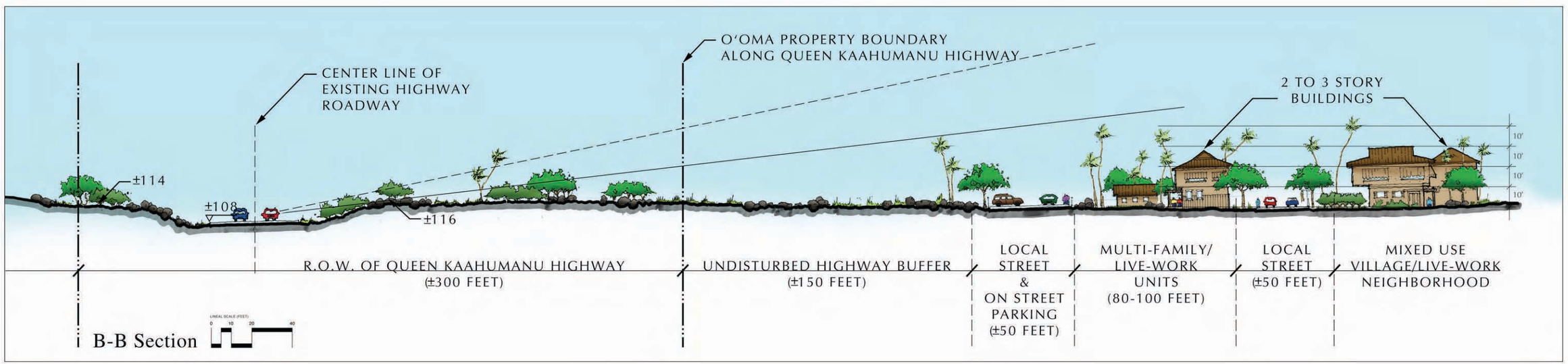
POTENTIAL IMPACTS AND MITIGATION MEASURES

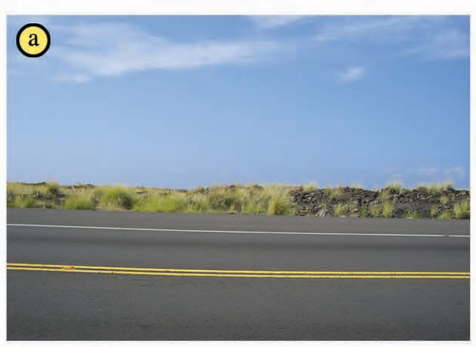
Creation of 'O'oma Beachside Village will change the visual appearance of the Property from vacant land to a built environment. This change will be visible from some points on Queen Ka'ahumanu Highway looking across the Property. However, the line-of-sight toward the ocean on Queen Ka'ahumanu Highway directly in front of the Property will not be affected since vegetation, terrain, and a berm already obscure makai views.

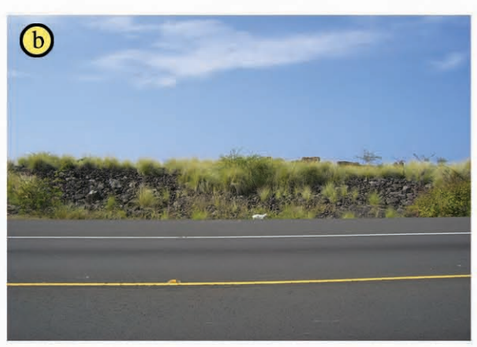
As shown in Figure 22 ~~21~~, much of 'O'oma Beachside Village will not be visible from Queen Ka'ahumanu Highway because of: 1) the lower elevation of the Highway relative to the terrain and berm directly maikai of the Highway; and 2) the significant highway right-of-way area and buffer area between the Highway and the first 'O'oma Beachside Village buildings (over 500

~~[12] As shown in Figure 1.5 of the *Keāhole to Kailua Development Plan* (1991).~~









Typical views from vehicle looking makai from Queen Kaahumanu Highway (north bound). Note vegetation growing beyond existing grade.

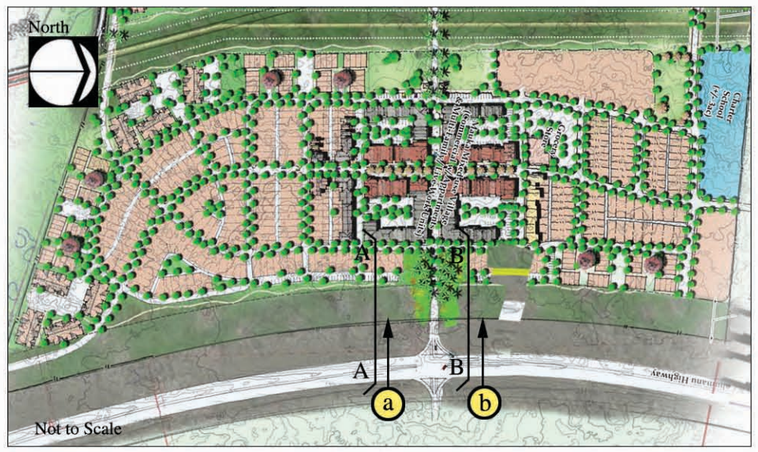


FIGURE 22
Visual Analysis
'O'oma Beachside Village
'O'oma Beachside Village, LLC
ISLAND OF HAWAI'I

PBR HAWAII & ASSOCIATES, INC.

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

feet). Looking mauka, ‘O‘oma Beachside Village have no impact on views of Hualālai from Queen Ka‘ahumanu Highway.

In the vicinity of the Property along Queen Ka‘ahumanu Highway, most of the coastline is not visible; therefore, ‘O‘oma Beachside Village will not significantly impact views of the coastline from the highway.

‘O‘oma Beachside Village will conform to all County ordinances regarding building heights, mass, and setbacks. As shown on Figure 22 ~~21~~ the first ‘O‘oma Beachside Village buildings will be over 500 feet from the centerline of Queen Ka‘ahumanu Highway.

‘O‘oma Beachside Village will be in character with north and south surrounding uses and will complement the pattern of in-fill development along the coast in a way that is envisioned and consistent with the *County of Hawai‘i General Plan* and ~~draft~~ Kona Community Development Plan. ‘O‘oma Beachside Village will incorporate appropriate materials, colors, site design standards, and landscaping in character with the area.

4.9 INFRASTRUCTURE AND UTILITIES

M&E Pacific prepared a Civil and Electrical Infrastructure Assessment report for ‘O‘oma Beachside Village. Key elements of the report are summarized in the following sections. Appendix J contains the complete report.

4.9.1 Water System

The regional aquifer in the vicinity of ‘O‘oma Beachside Village is the Keauhou Aquifer System, a basal aquifer covering a 167 square mile area with a presently designated sustainable yield of 38 mgd (CWRM 2008). Reported pumpage of the Keauhou Aquifer is about 12 mgd (TNWRE 2008). ~~The sustainable yield was set before high level groundwater was discovered above Māmalahoa Highway; as such, actual yield sustainable is estimated to be more than 38 mgd (TNWRE 2008).~~

The County of Hawai‘i Department of Water Supply (DWS) is the major purveyor for potable water. ~~Four major~~ Thirteen wells serve the North Kona System, running from the Airport south to Kealakekua.

The DWS North Kona Water System provides the region’s potable water and is integrated with sources south of Hina Lani Street, down to the intersection of Māmalahoa Highway and Queen Ka‘ahumanu Highway. The system extends from the Airport in the north to Kealakekua to the south.

Presently, there are no public or private water transmission lines within the Property. An existing 12-inch transmission main runs along Queen Ka‘ahumanu Highway from the north and presently terminates at NELHA. This line connects to two storage tanks above the airport, Keāhole Tank and Keāhole No. 1 tank.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Projected Water Demand

Potable water demand for ‘O‘oma Beachside Village will be limited to that used for consumption, general household and commercial use, and irrigation of landscaping within individual residential lots. The potable water demand for ‘O‘oma Beachside Village at full build-out is estimated to be 0.694 mgd.

‘O‘oma Beachside Village will utilize non-potable recycled water (R-1) from its on-site wastewater treatment plant (discussed below in Section 4.9.2) for general irrigation of common landscaping features, including community parks, neighborhood parks, open spaces (as necessary), and the school. The non-potable water demand for ‘O‘oma Beachside Village at full build-out is estimated to be 0.405 mgd.

Demand calculation amounts for both potable and non potable water have been adjusted above County standards to take into account the arid conditions of the area and consumption rates of similar, nearby developments; however, actual demand is expected to be less.

Water Source Alternatives

A~~n~~ (on-site or offsite) desalination plant is the preferred alternative for water for ‘O‘oma Beachside Village. Desalination is self-sufficient and environmentally sound, as it will not negatively impact the basal lens or nearshore water quality (see Section 3.5 for a detailed discussion).

~~‘O‘oma Beachside Village, LLC is continuing to explore other alternate sources of water including an off site desalination plant with an off site well and storage, or utilization of a conventional potable well system. ‘O‘oma Beachside Village LLC will undertake additional research to assess the potential impacts and appropriate mitigation measures of the selected systems.~~

If a desalination plant proves unfeasible, O‘oma Beachside Village will explore alternate sources of water including connection to the County of Hawai‘i potable water system, partnership with private water system owners, or utilization of independent wells. In providing a source of potable water for ‘O‘oma Beachside Village, ‘O‘oma Beachside Village, LLC will comply with all laws and regulations As necessary, ‘O‘oma Beachside Village, LLC will undertake additional research to assess the potential impacts and appropriate mitigation measures of the selected systems.

The Commission on Water Resource Management (CWRM) application process for water use permits entails: 1) the preparation of an extensive application that includes analysis of: a) the public interest; b) the rights of the Department of Hawaiian Home Lands; c) any interference with any existing legal uses; and d) alternatives; 2) an thorough public and agency review process; 3) public hearing(s); and 4) a formal decision from CWRM. Well construction/pump installation permits also have an extensive application process that includes thorough review.

Therefore, there will be extensive analysis, review, and evaluation of potential impacts of any alternative potable water system.

Desalination System

A~~n on site~~ reverse osmosis (RO) desalination plant feeding a ~~private~~ transmission, storage, and distribution system is proposed for 'O'oma Beachside Village. The RO process uses a membrane filter that is highly permeable to water and only slightly permeable to dissolved solids. The membranes are subjected to high-pressure seawater, allowing only pure (potable) water through the membrane and leaving a brine solution. The proposed desalination system will be subject to regulation as a public water system and will meet conditions of the State Department of Health, including HAR Chapter 11-20, 11-21, and 11-25.

The desalination plant may be located on-site on the Property, or off-site: 1) at the existing DWS Keahole Tank site (TMK (3) 7-3-010: 043); 2) on, or in the vicinity of, the land for the future 1.0 million gallon Pālamanui reservoir site (TMK (3) 7-3-010: portion of 044): 3) on land directly mauka of 'O'oma Beachside Village (TMK (3) 7-3-009: portion of 005); or 4) on other mauka lands mutually agreed upon by DWS and 'O'oma Beachside Village, LLC.

On November 25, 2008, the Water Board of the County of Hawai'i adopted Resolution No. 08-08 supporting the development of desalination facilities by private parties such as 'O'oma Beachside Village, LLC, for dedication to the Water Board, provided however, that the DWS and the State Department of Health both approve of the desalination facilities and of the quality of water produced by said facilities and that there is sufficient demand and infrastructure for distribution of the water to operate the facility in an economically responsible manner. Appendix N contains the complete resolution.

Two possible sources of feedwater supply considered for desalinization are: 1) the NELHA deep (cold) or shallow (warm) systems; or 2) on-site or off-site deep wells that would tap saline groundwater at a depth beneath the brackish lens. Off-site wells would be located at the selected off-site desalination plant location. A study conducted by Tom Nance Water Resource Engineering, concludes that feedwater received from NELHA or drawn from on-site or off-site wells at depths below the basal lens will not impact the existing basal groundwater source (see Section 3.5 and Appendix A). The likely depth that the on-site deep wells would draw from is 60 to 90 feet below sea level. The anticipated feedwater salinity from the on-site deep wells would be 25 (ppt) or greater.

Desalination Process – Prior to reverse osmosis, the feedwater will undergo pre-treatment to remove particles and compounds that can negatively impact RO membranes. This process adjusts the acidity of the feedwater, and prevents formation of scales on RO membranes thereby maximizing the RO performance and life span. After pre-treatment, the feedwater is sent through the RO membranes at high pressure to reduce total dissolved solids. The by-product is a concentrated brine solution with a salinity concentration much higher than intake feedwater. The RO product water is conditioned for pH adjustment and disinfection. This water is then the final product water and available for storage and distribution as "potable" (or "safe drinking") water.

Through the desalination process approximately 40 to 45 percent of the feedwater will become usable water. Approximately 55 to 60 percent of the feedwater will become a concentrated brine solution. This concentrate will be disposed of in on-site wells that will deliver the concentrate into the saltwater zone below the basal lens. The concentrate would have a salinity of approximately 60 ~~percent~~ ppt, which is substantially denser than either open coastal seawater (salinity of 35 ~~percent~~ ppt) or saline groundwater (salinity of 33-35 ~~percent~~ ppt).

Owing to the greater density, as well as the horizontal-to-vertical anisotropy of the subsurface lava flows, the concentrate will flow seaward without rising into and impacting basal groundwater. Discharge into the marine environment would be offshore at a substantial distance and depth. Three factors will cause the concentrate to move seaward at depth: 1) injection will be into and join the seaward moving saline groundwater beneath the basal lens; 2) the concentrate will have a greater density than the receiving saline groundwater, meaning there will be no tendency for the concentrate to rise due to density; and 3) lava permeabilities are on the order of 200 times greater in the direction of the flow (ie. horizontal) than across the flow (ie. vertical) (TNWRE 2008).

The concentrate, diluted by mixing into the receiving saline groundwater, will diffusively discharge into the marine environment at a depth comparable to its depth of initial injection (tentatively between 200 and 250 feet). In the marine environment, the concentrate will be rapidly mixed to background levels (in a matter of a few feet) with no impact on the marine environment (TNWRE 2008; MRC 2008).

In addition to potable and non-potable water and the concentrated brine solution, the desalination process will also produce small amounts of reject water from the pre-treatment process, backwash water from membrane cleaning, and wasted membrane cleaning solution. These by-products will be properly treated and processed at the on-site wastewater treatment facility or disposed of in the same deep wells used for the concentrated brine solution.

The desalination water system will have no impact on potable and brackish groundwater or nearshore waters including groundwater used by neighboring projects or anchialine pools and fishponds in the nearby Kaloko-Honokōhau National Park. This conclusion is more fully discussed in Section 3.5 and is based on analysis of: 1) feedwater supply, desalination, and concentrate disposal; 2) percolation of excess irrigation water (including R-1 water from the wastewater treatment plant and applied fertilizers); and 3) stormwater collection and disposal.

Storage and Distribution – Two alternatives for storage and distribution of the desalinated water are being explored: 1) a gravity-fed system with storage mauka of Queen Ka'ahumanu Highway at an elevation sufficient to create adequate water pressure; or 2) an on-site, mechanically pressurized system with on-site storage.

For the gravity-fed system, the storage facility is proposed to be a new 0.5 million gallon tank ~~at the existing DWS Keāhole Tank site mauka of the Airport, as this area has been previously developed and is being used for water storage.~~ located: 1) at the existing DWS Keahole Tank site (TMK (3) 7-3-010: 043); 2) on, or in the vicinity of, the land for the future 1.0 million gallon Pālamanui reservoir site (TMK (3) 7-3-010: portion of 044): 3) on land directly mauka of

‘O‘oma Beachside Village (TMK (3) 7-3-009: portion of 005); or 4) on other mauka lands mutually agreed upon by DWS and ‘O‘oma Beachside Village, LLC.

Currently, DWS does not have a policy or regulations for infusing desalinated water into their distribution systems; therefore a separate tank and transmission system is proposed. ~~This would make the ‘O‘oma Beachside Village treatment, storage, transmission, and distribution system independent from the DWS system.~~ However, due to decreasing potable well water availability in the region for existing and new customers, DWS has begun to consider the use of a blended well/desalination system.

~~Under this system,~~ For locations 1 and 2 a pressurized eight-inch force main ~~from the desalination plant~~ will run along the NELHA/‘O‘oma boundary (on the Property), enter the existing utility corridor on Queen Ka‘ahumanu Highway and proceed ~~north to the Keāhole Tank site~~ up to the storage facility. A gravity-fed 12-inch return main will run back within the same utility corridor and connect to the distribution system within ‘O‘oma Beachside Village. For locations 3 and 4 transmission line locations would need to be determined based on the location. The distribution system for an off-site desalination plant would be similar as for the off-site storage system except that only a 12-inch main would be required to transmit potable water from the off-site desalination plant to ‘O‘oma Beachside Village.

For the on-site mechanically pressurized system, an on-site storage tank and pressurized system would be provided as part of the desalination facility. This system would supply pressurized water to the O‘oma Beachside Village distribution system. A system of check valves and pressure reducing valves would regulate water pressure. While unusual in Hawai‘i, mechanically pressurized systems are commonly operated in lower lying areas around the mainland such as the mid-western plains, and level topographic municipalities found in Florida and Texas.

Water Conservation

‘O‘oma Beachside Village, LLC is committed to aggressive water conservation strategies to reduce consumption, conserve resources, and minimize water demands. The goal is to reduce the total water requirements through a combination of water saving equipment and strategies.

Efficient fixtures and appliances will reduce indoor water use. The water distribution system will be maintained to prevent water loss and homeowners and businesses will be encouraged to maintain fixtures to prevent leaks. Landscaping will emphasize climate-adapted native and other appropriate plants suitable for coastal locations. To further conserve water within ‘O‘oma Beachside Village:

- Single pass cooling will not be allowed.
- Best management practices will be designed and implemented to minimize infiltration and runoff from daily operations.
- Irrigated turf will be limited where possible.

4.9.2 Wastewater System

Presently, there are no public or private wastewater treatment facilities on the Property or wastewater transmission lines fronting the Property.

Wastewater treatment plants (WWTP) in the vicinity of the Property include: 1) a private system at the Crown Lands of Keauhou to the south; 2) the County's Kealakehe WWTP south of Kealakehe Parkway; and 3) the DOT-Airports division WWTP at the Airport to the north.

The private WWTP at the Crown Lands of Keauhou is far from the Property, and therefore, not feasible for connection with 'O'oma Beachside Village. In addition, all available capacity at this facility is reserved.

The DOT-Airport's WWTP at the Airport is currently available only for use by the Airport.

The Kealakehe WWTP is slated for an upgrade and expansion (Hawai'i County 2007). In addition, the County Department of Environmental Management (DEM) will be installing infrastructure from Kealakehe Parkway to Kohanaiki in conjunction with Phase II of the DOT's Queen Ka'ahumanu Highway widening project.[13] Plans for installing additional sewer and reuse infrastructure to service the North Kona area and upgrades of the Kealakehe WWTP to provide R-1 reuse water are to be performed in later phases. The DEM has indicated that it may be able to supplement the irrigation supply for 'O'oma Beachside Village with effluent reuse from the expanded Kealakehe WWTP.

The Kona Community Development Plan includes conceptual plans which may result in a new, decentralized WWTP mauka of the Property. Thus, public wastewater treatment facilities to serve 'O'oma Beachside Village and the surrounding area may be available in the future.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Projected Wastewater Flow

The County of Hawai'i Department of Public Works determines wastewater requirements on the basis of acreage, residential unit counts, and inflow/infiltration for dry and wet weather conditions. For 'O'oma Beachside Village, the average wastewater flow at full build-out is projected to be 0.479 mgd.

Wastewater Treatment Alternatives

An on-site wastewater treatment plant is the preferred alternative for processing 'O'oma Beachside Village wastewater. An on-site wastewater treatment plant is self-sufficient, water efficient, and environmentally sound, as it will provide recycled (R-1) water for general irrigation within 'O'oma Beachside Village and thus lessen demand for potable water.

[13] DEM letter dated May 30, 2007; letter included in Chapter 11 of this EIS.

‘O‘oma Beachside Village, LLC is continuing to explore connection to the County wastewater system as an alternative for wastewater disposal. Connection to the County wastewater system could include: 1) connecting to the County’s expanded Kealakehe WWTP; 2) participation in a County improvement district project; 3) connecting to the Airport WWTP, if expanded to allow for public uses; or 3) connection to new WWTP mauka of the Property proposed in the Kona CDP. However, without confirmation on the schedule of any of the above initiatives, ‘O‘oma Beachside Village, LLC intends to move forward with plans to provide a private wastewater treatment facility within ‘O‘oma Beachside Village.

‘O‘oma Beachside Village, LLC and/or its successors and assigns will not obtain a certificate of occupancy for a residential lot within ‘O‘oma Beachside Village until the residential lot to be occupied is connected to one of the following:

1 A public WWTP;
2. A private WWTP and effluent disposal system serving ‘O‘oma Beachside Village (or portion thereof) designed to reduce Total Nitrogen to a concentration of <5 mg/l and Total Phosphorus to a concentration of <2 mg/l (aerobic nitrification processes combined with anoxic/anaerobic sand filters to perform denitrification, or comparable technology); or
3. An Individual Wastewater System ("IWS"), for lots 10,000 square feet or larger, that uses an enhanced treatment (such as Sequential Batch Reactor, CBT, or technology with a comparable nutrient removal efficiency) and an absorption field of import material, featuring adequate percolation rate, such that the IWS and absorption field are designed to reduce Total Nitrogen to a concentration of <5 mg/l and Total Phosphorus to a concentration of <2 mg/l .

Effluent disposal for a WWTP within O‘oma Beachside Village shall be in accordance with applicable laws and will include either:

1. Horizontal absorption system with absorption trenches or beds of sufficient import material (meeting the Hawai‘i State Department of Health specifications) featuring adequate percolation rate and constructed in a manner to achieve the level of nutrient removal stated above; or
2. An irrigation system for disposing of effluent within ‘O‘oma Beachside Village in accordance with applicable laws and Hawai‘i State Department of Health requirements; or
3. A combination thereof. Installation is subject to conditions of approval by the Director of the Hawai‘i State Department of Health and Chapter 11-62, HAR.

Wastewater Treatment Plant

A membrane bioreactor (MBR) wastewater treatment system is proposed for ‘O‘oma Beachside Village to produce R-1 quality effluent for non-potable use throughout the community. The MBR process is a biological treatment process (activated sludge process) combined with a separation process (membrane system). MBR systems are widely used throughout the world and are considered an industry standard for the production of reliable R-1 recycled water. An additional benefit of the MBR system is that is has a smaller facility footprint than other systems.

The MBR system will provide for on-site sludge handling, including a sludge holding tank and a sludge dewatering facility. The dewatering process will produce "cake sludge" that can be disposed of at the Pu'uanahulu landfill, which accepts sewage sludge.

On-site sewer mains will run along 'O'oma Beachside Village roadways wherever possible for the ease of maintenance. The majority of the collection system will be designed as a gravity flow system; however, due to site topography, flows in some areas may be pumped to the WWTP.

The recycled water system will include a 1.2 million gallon reservoir for R-1 water storage, water pumps, and R-1 water transmission mains. While non-potable irrigation water demands are expected to utilize all R-1 water produced, if necessary, overflow from the storage reservoir would discharge into standby injection wells, absorption trenches, and/or leachfields. Injection wells for overflow R-1 water would be located nearby the wastewater treatment plant (as shown Figure 1), which is below the Underground Injection Control line, i.e., injection wells will be placed in an area where they may be permitted.

Wastewater system design, ~~and~~ construction, and operation will be in accordance with County standards and all wastewater plans will conform to applicable provisions of HAR Chapter 11-62, Wastewater Systems, HAR, Section 11-62-27, Recycled Water Systems, and HAR Section 11-21-2, Cross-Connection and Backflow Control. In addition, any injection well that may be required will be in compliance with HAR Chapter 11-23, Underground Injection Control.

R-1 Water

The use of R-1 irrigation water is not expected to have negative impacts on groundwater or nearshore waters, including groundwater used by neighboring projects or anchialine pools and fishponds in the nearby Kaloko-Honokōhau National Historic Park. This conclusion includes analysis of percolation of excess irrigation water and applied fertilizers (see Section 3.5.1).

R-1 water would contain nitrogen and phosphorus in concentrations assumed to be 300 and 100 microns (µM), respectively. It is assumed that approximately 15 percent of irrigation water will percolate downward into the underlying basal lens. The percolate water from excess irrigation may also contain applied fertilizer that will be dissolved as the water moves through the soil. Of the applied fertilizer it is assumed that 10 percent of the nitrogen and two percent of phosphorus will percolate past the root zone. However, as the percolate water travels through the vadose (unsaturated) zone to underlying groundwater, removal rates of nitrogen and phosphorus will be 80 and 95 percent, respectively (TNWRE 2002).

4.9.3 Drainage System

Due to high permeability of the natural ground surface across the Property and on the upland slopes mauka of the Property, surface runoff does not occur even during the most intense rainfalls. As a result, no natural gulches or waterways have been created on the Property and there are no drainage culverts along Queen Ka'ahumanu Highway in front of the Property. At present, about half of the annual rainfall that occurs on the Property percolates to the underlying groundwater. The balance is evaporated or transpired into the atmosphere.

While surface runoff does not occur on the Property, the County of Hawai'i Department of Public Works determines stormwater discharge flows based on acreage, ground cover conditions, rainfall intensity (by locale), and a design storm condition. Based on County drainage standards, existing total flow (10-year storm) from the Property is calculated to be 228.5 cubic feet per second (cfs).

Presently, there are no constructed drainage facilities within the Property.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Drainage from 'O'oma Beachside Village is not expected to have a significant adverse effect on groundwater or coastal marine waters. The post development runoff from the Property is estimated to be 411.5 cfs, an increase of 183 cfs over calculated existing conditions. However, all additional runoff due to the community will be retained on site with no flow off the Property or into the ocean.

Stormwater over 'O'oma Beachside Village will either percolate directly into the ground (in natural and landscaped area) or will be collected in a system of catch basins and drain lines and disposed of in drywells located throughout the community.

Analysis of storm water percolation indicates insignificant impacts to ground water due to storm water runoff (see Section 3.5.1). It is assumed that the nutrient levels in post-development runoff percolating to groundwater will be increased by 20 μM for nitrogen and 2 μM for phosphorus (TNWRE 2002), as nitrogen and phosphorus levels from developed areas are relatively low (lower than the underlying groundwater). As with irrigation percolate water, for stormwater percolating into the ground (either pre- or post-development) removal rates of nitrogen and phosphorus will be 80 and 95 percent, respectively (TNWRE 2002).

The marine water quality assessment (see Section 3.5.2) concludes that 'O'oma Beachside Village will not have any significant negative effect on ocean water quality. Creation of 'O'oma Beachside Village is likely to result in undetectable changes to the marine environment. No changes to the current marine environment are anticipated for the following reasons: 1) the park and coastal preserve along the shoreline create a substantial setback; 2) lack of potential for surface runoff and sediment effects; 3) small projected groundwater subsidies; and 4) the strong mixing characteristics of the nearshore environment.

All drainage improvements will be developed in accordance with applicable DOH and County drainage requirements and standards. In addition, 'O'oma Beachside Village, LLC will comply with all laws and regulations regarding runoff and non-point source pollution.

<u>To reduce the potential of non-point source pollution to impact groundwater and marine waters 'O'oma Beachside Village, LLC (or its successors, and/or the 'O'oma Beachside Village Association) will:</u>

- <u>Engineer, construct (or require to be constructed), and maintain storm and surface-water runoff best management practices ("BMPs") designed to prevent violation of State water quality standards as a result of storm-water discharges originating from the Property. To the extent practicable and consistent with applicable laws, 'O'oma Beachside Village,</u>

LLC will design storm and surface runoff BMPs to treat the first-flush runoff volume to remove pollutants from storm and surface-water runoff, and to prevent pollutants from reaching the Kaloko-Honokōhau National Historical Park (National Park) or entering the water table.

- Seek to participate with the County of Hawai‘i in its pilot storm drain program for roadways within the Kaloko-Honokōhau region. This program is specified in County Ordinance 02-114, Condition F which requires: 1) all roadways be constructed to County decidable standards with paved swales and striped on-street parking; and 2) the drainage system within road-right-of-ways include storm drainage filtration devices which meet the approval of the County Department of Public Works, in consultation with the National Park Service, and the applicable permitting requirements of the Underground Injection Control (UIC) of the Federal Safe Drinking Water Act and the National Pollutant Discharge Elimination System (NPDES) of the Federal Clean Water Act.

- Design all subsurface drainage structures with a debris catch basin to allow the detention and periodic removal of rubbish and sediments deposited by runoff. Storm water runoff shall first enter the debris catch basin before flowing into any subsurface drainage structures. The debris catch basin’s volume will be designed using current industry and engineering standards. The debris catch basin shall be periodically inspected and cleaned accordingly.

- Design and construct (or require to be constructed), to extent practicable and consistent with applicable laws, landscaped areas, including grassed or vegetative swales, grass filter strips, vegetated open space areas, check dams, or other comparable advanced storm water BMPs, specifically engineered to treat the first flush runoff volume from roadways, and from exposed parking lots designed for more than ten vehicles within the Property to remove pollutants. Additionally, ‘O‘oma Beachside Village, LLC will design and install storm water BMPs for treating the first flush runoff volume to remove suspended solids and oils and greases from storm runoff from ‘O‘oma Beachside Village roadways and parking lots designed for more than 50 vehicles.

- Provide signs for all subsurface drainage structures in ‘O‘oma Beachside Village with warnings such as the following: DUMP NO WASTES. (DUMPING IS ILLEGAL AND MAY BE REPORTED TO 974-4000, ext. 64258.) GOES TO GROUNDWATER AND OCEAN. HELP PROTECT HAWAI‘I’S ENVIRONMENT. Signs will be stand up signs or riveted placards, or will be painted on a paved surface next to the drainage structures' inlet. Signs shall be situated so as to not obscure scenic views, contribute to visual blight or obstruct an accessible route.

- Develop an Owner’s Pollution Prevention Plan (OPP Plan), before constructing ‘O‘oma Beachside Village, that: 1) addresses environmental stewardship and non-point sources of water pollution that can be generated in residential areas, and 2) provides best management practices for pollution prevention. The OPP Plan will include: water conservation, lot and landscape runoff, erosion control, use of fertilizers, use of pesticides, environmentally safe automobile maintenance, and management of household

chemicals. The OPP Plan shall include information on the National Park and the nationally significant cultural and natural resources within the National Park.

- Consult with the County of Hawai'i Planning Director and the National Park Service regarding the potential for groundwater contamination by oil and termiticides and adopt further mitigation measures as may be necessary to protect the environment from contamination.

4.9.4 Solid Waste

The County of Hawai'i currently maintains two active landfills. One is located in Hilo, and the other is located north of the Property at Pu'uanahulu. According to the County of Hawai'i, as of April 2008, the Pu'uanahulu landfill has an anticipated remaining life of 47 years and meets all current EPA requirements for landfills.[14]

Island residents collect their solid waste trash and transport it to any one of the 21 solid waste transfer stations located around the island. In some areas of the island, residents may hire a private collection company to pick-up their solid waste for disposal. The nearest transfer station to the Property is the Kailua Transfer Station, located approximately 2.7 miles to the southeast of the Property.

Currently, solid waste is not being generated on the Property.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Waste generated by site preparation will primarily consist of vegetation, rocks, and debris from clearing, grubbing, and grading. Soil and rocks displaced from grading and clearing will be used as fill within the site as needed. Construction waste will consist of waste lumber, concrete, and other building materials.

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

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

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

Construction materials that cannot be recycled will be disposed of in the Pu'uanahulu landfill.

[14] County of Hawai'i Mayor's Office. 2008. *Public Information - Waste Reduction Proposal* [Brochure].

Green waste from grubbing will either be chipped into mulch for use on site or will be taken to green waste recycling centers. If large amounts of green waste are expected, delivery will be coordinated with the recycling centers to ensure that there is adequate capacity.

At full build-out and occupancy, 'O'oma Beachside Village is estimated to produce approximately 2,160 to 2,568 tons of solid waste per year. Provisions for recycling, such as collection systems and space for bins for recyclables, will be incorporated into 'O'oma Beachside Village. Architects for individual business buildings will be required to provide space for individual dumpsters to separate recyclable materials, such as cardboard, from municipal solid waste. In addition, 'O'oma Beachside Village will work with the County regarding feasible alternatives for residential curbside collection, including source-separated recyclables. Waste that cannot be recycled or incorporated into on-site green waste processing will be disposed of in the Pu'uanahulu landfill.

These provisions are in accordance with the following Kona CDP objective and policy:

> ***Objective PUB- 5: Zero Waste.*** *To maximize recycling, reuse, and reduction.*
>
> ***Policy PUB–5.2:*** *Solid Waste. Within the Kona Urban Area, to increase the capture of recyclable materials and also to decrease the number of automobile trips, the County shall explore feasible alternatives for residential curbside collection, including source-separated recyclables.*

4.9.5 Electrical System

Electrical power on Hawai'i primarily is supplied by Hawai'i Electric Light Company, Inc. (HELCo). The Property is not currently served by any existing HELCo facilities. The nearest source of existing power is the 69 KV transmission overhead line on the mauka (east) side of Queen Ka'ahumanu Highway.

Mauka of the Airport and Queen Ka'ahumanu Highway is the Keāhole Power Plant, the largest power producer on the Island, generating up to 75 percent of the power needed by West Hawai'i, and 35 percent of the electricity for the entire island.

HELCo's current system peak load is 201,300 kW and total generation system capability is 271,850 kW. The reserve margin is 35 percent. HELCo plans on installing a new 18,000 kW turbine in 2009.[15]

HELCo supports net energy metering as a way to encourage the use of eligible renewable energy electricity generators by residential and commercial customers. HELCo customers that own or lease an eligible renewable energy generator (e.g. solar photovoltaic system) may enter into an agreement with HELCo to connect their generator to the utility grid, allowing it to feed surplus electricity into the grid. Net energy metering means that any kilowatt-hours the customer's renewable energy generator feeds into the grid will be subtracted from the kilowatt-hours of

[15] HELCo letter dated February 2, 2007 provided in *Kona Kai Ola Final EIS*, Oceanit, 2007.

electricity the customer obtains from HELCo to determine the net amount of kilowatt-hours. The customer is then billed only on the net kilowatt-hours.

POTENTIAL IMPACTS AND MITIGATION MEASURES

When fully built out, the annual electrical demand for ‘O‘oma Beachside Village is expected to reach a maximum of approximately 71 million kilowatt-hours. This estimate does not take into account demand reductions resulting from energy conservation strategies, such as the use of solar power or photovoltaic systems.

HELCo will require a new substation to provide electrical service to ‘O‘oma Beachside Village, preferably near the 69 KV transmission overhead line on the mauka (east) side of Queen Ka‘ahumanu Highway. If creating a substation mauka of Queen Ka‘ahumanu Highway is problematic, the alternate choice is to construct the substation makai of the highway within the Property. ‘O‘oma Beachside Village, LLC will coordinate any facility expansion requirements with HELCo. Within ‘O‘oma Beachside Village, electrical systems are expected to be underground.

In compliance with Chapter 344 (State Environmental Policy) and Chapter 226 (Hawai‘i State Planning Act), HRS, all ‘O‘oma Beachside Village buildings, activities, and grounds will be designed with energy-saving considerations. Energy-efficient design practices and technologies will be specifically addressed in the design phase of ‘O‘oma Beachside Village. Buildings will also comply with the County of Hawai‘i Energy Code (Hawai‘i County Code, Section 5, Article 2). In addition, solar water heaters will be used as required under Section 196-6.5, HRS.

‘O‘oma Beachside Village, LLC will consult with HELCo regarding suggestions for customized demand-side management programs that offer rebates for installation of energy-efficient measures and technologies.

To reduce energy consumption, ‘O‘oma Beachside Village, LLC will consider implementing elements of the United States Environmental Protection Agency (EPA) EPA) ENERGY STAR Program including effective insulation, high performance windows, tight construction, efficient cooling equipment, and energy efficient lighting and appliances. O‘oma Beachside Village will also strive to incorporate energy conservation strategies such as use of solar power or photovoltaic systems and will consider possibilities for net energy metering in building design to allow residents and businesses to lower electricity costs and provide energy back into the system.

Energy conservation measures will be implemented where possible in the design of ‘O‘oma Beachside Village. Energy-saving technologies to be considered for incorporation include:

- Solar energy for water heating.
- Use of photovoltaic systems, fuel cells, and other renewable energy sources.
- Maximum use of day lighting.
- Installation of high efficiency compact fluorescent lighting.
- Roof and wall insulation, radiant barriers, and energy efficient windows.
- Installation of light colored roofing.
- Use of landscaping for shading of buildings.

- Use of landscaping for dust control and to minimize heat gain.
- Exceeding Model Energy Code requirements.
- Use of solar parking lot lighting.
- Installation of a "district cooling" system that utilizes cold sea water as a chilling agent for air conditioning systems. NELHA currently utilizes such technology, which requires less maintenance than compressor systems, resulting in energy cost savings, fresh water conservation, and fuel conservation needed for electricity production.

These measures are in accordance with the following Kona CDP objective and policy:

> ***Objective ENGY-1.*** *To provide a multi-prong framework, including standards, innovations, incentives, and education, to reduce the dependency on imported fossil fuels through energy efficiency and renewable energy generation.*
>
> > ***Policy ENGY-1.5: Distributed Energy and Other Innovative Technology Support.*** *Photovoltaic systems are typically used as distributed generation when connected to the electrical grid where they have the potential to sell excess energy back to the grid. This is an emerging technology with challenges for the utility to incorporate such systems into the grid. This policy is aspirational and expresses general support in whatever way possible (e.g., permit coordination, grants) to encourage further development in this endeavor.*

4.9.6 Telephone

Presently the Property has no Hawaiian Telcom telephone facilities. The nearest source of telecommunications service is Hawaiian Telcom's fiber optic lines on HELCo's 69 KV pole line mauka of Queen Ka'ahumanu Highway.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Hawaiian Telcom will construct a new "pair-gain" on-site to provide telecommunications service to 'O'oma Beachside Village. A pair-gain is a packaged, self-contained equipment rack that is fed with fiber optic lines and generates thousands of telephone copper pairs. A pair gain requires a 30-foot x 30-foot lot or may be placed in a building.

'O'oma Beachside Village, LLC will coordinate any facility expansion requirements with Hawaiian Telcom. As there are no existing ducts across Queen Ka'ahumanu Highway to access the Property, new telephone ductlines will have to be added at the highway intersection. Within 'O'oma Beachside Village, telephone systems are expected to be underground.

4.9.7 Cable Communication

Presently, the Property has no cable communication (CATV) facilities. The nearest source of CATV service is Oceanic Time Warner Cable's fiber optic lines on HELCo's 69 KV pole line mauka of Queen Ka'ahumanu Highway.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Oceanic Time Warner Cable will require several "nodes" within 'O'oma Beachside Village. A "node" is a free-standing cabinet located within a 6-foot x 6-foot easement. It is anticipated that Oceanic Time Warner Cable's system will also provide high-speed data connectivity.

'O'oma Beachside Village, LLC will coordinate any facility expansion requirements with Oceanic Time Warner Cable. As there are no existing ducts across Queen Ka'ahumanu Highway to access the Property, new CATV ductlines will have to be added to cross the highway. Within 'O'oma Beachside Village, cable systems are expected to be underground.

4.10 SOCIO-ECONOMIC CHARACTERISTICS

Mikiko Corporation prepared a market assessment report and an economic and fiscal impacts report for 'O'oma Beachside Village. The key points from the reports are included below. Appendix K contains the full market assessment report and Appendix L contains the full economic and fiscal impact report.

4.10.1 Population

The 2000 United States Census reported that resident population of Hawai'i County was 148,677 people in 2000.

Population projections commissioned by the State Housing Finance and Development Corporation of Hawai'i (HFDCH) and calculated by SMS Research indicate that the Hawai'i County population reached 170,689 people in 2007 (SMS 2007).

The Property is in the North Kona region of Hawai'i, north of Kailua. For the purpose of analyzing population and housing supply in the region around the Property, United States Census tracts for the North Kona District (Census Tract 215.01) and South Kohala District (Census Tract 217.01) were examined. For these tracts, the United States Census reported a total population of 15,520 people in 2000. The SMS Research projections for these tracts indicate that the population reached 21,918 people in 2007 (SMS 2007).

Currently the Property does not contain any residents.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Projections indicate that the Hawai'i County population will increase to 224,573 people in 2030, a 51 percent increase from the 2007 population (SMS 2007). For the North Kona District (Census Tract 215.01) and South Kohala District (Census Tract 217.01), the population is expected to increase to 58,300 people in 2030, a 160 percent increase from the 2007 population and an average annual increase of 4.3 percent (SMS 2007).

'O'oma Beachside Village will respond to the demand for housing for the growing population in the North Kona and South Kohala areas as well as provide opportunities for existing Hawai'i residents wishing to relocate to West Hawai'i.

‘O‘oma Beachside Village will provide opportunities for people currently living in other parts of the island, such as Hilo, to move to homes closer to jobs in West Hawai‘i. This is seen as a positive impact as it will decrease commuting to and from West Hawai‘i, lessen traffic congestion, reduce stress, reduce gasoline consumption, lessen pollution, allow more family and recreation time, and improve overall quality of life for not only ‘O‘oma Beachside Village residents, but for Hawai‘i residents in general.

Demand for homes in the North Kona region is also characterized by the following trends and market segments:

- **Downsizers** – Between 2010 and 2020, the Baby Boom generation will begin to downsize their residential needs. Many can be expected to seek to live closer to community amenities. As they enter retirement and their adult children move out from the family home, many are expected to no longer care to maintain a large home.
- **Entry level markets** – Hawai‘i’s next most rapidly growing group between 2010 and 2020 is likely to be persons aged 25 to 34, the “Echo Boom” generation. This life phase often includes household formation and rental or purchase of the first home.
- **First move-ups** – A strong move-up market could emerge after 2020, as the Echo Boom group ages into its mid 30s and early 40s.
- **Retirement/senior markets** – The retiree/senior market will also show significant gains between 2010 and 2030. This market is typically one or two persons per household.

‘O‘oma Beachside Village is an attractive option for growing population market segments because of its location makai of Queen Ka‘ahumanu Highway and proximity to existing and future anticipated centers of employment, the shoreline, shopping and services, entertainment, the Airport, and the many ongoing regional investments in public and private infrastructure throughout the region.

When fully built out in 2029, ‘O‘oma Beachside Village will provide homes for approximately 2,580 full-time residents, based on 84 percent of the homes being used by full-time residents, an average occupancy of 95 percent, and an average household size of 2.7 people per home (Mikiko Corporation 2008).

Potential impacts and mitigative measures related to ‘O‘oma Beachside Village-generated population, such as traffic, infrastructure, and public services, are discussed in other sections of this EIS. However, it should be noted that the population of Hawai‘i is projected to grow independent of ‘O‘oma Beachside Village. Therefore, population related impacts to traffic, infrastructure, public services, and other issues will need to be addressed regardless of whether ‘O‘oma Beachside Village is built.

4.10.2 Housing

West Hawai‘i is among the most desirable resort and residential areas in Hawai‘i. The area has many full-time residents, but is also a popular vacation destination, with many visitors, resorts, and second homes.

The North Kona and South Kohala Districts have been dominated by resort and resort residential projects makai of Queen Ka'ahumanu Highway. Oceanfront developments generally have been devoted to vacation or second- home uses, with limited numbers of full-time residents, while the more mauka areas (such as Kona Palisades) have been more commonly occupied by full-time residents. Most buyers within the resort subdivisions have been non-State residents.

In ~~January~~ September 2008, the median sales price of a single-family home in Hawai'i County was $285,000 ~~$330,000~~; however, the median sales price of a single-family home in the North Kona/South Kohala area was $516,000 ~~$595,000~~ (Hawai'i Island Board of Realtors 2008). This price premium reflects both: 1) the strong demand to live in the North Kona/South Kohala area compared to a limited supply of area housing; and 2) the relatively high mix of resort residential homes in the region.

It is projected that approximately 15,000 new homes will be needed in the North Kona/South Kohala area by 2030 (Mikiko Corporation 2007). ~~If developed with all currently proposed units, projects in the region and currently within the State Urban District, could provide up to 7,600 homes.[16]~~ Currently proposed projects in the region within the State Urban District could provide up to 7,600 homes. Projects within the State Urban District are considered more likely to proceed than projects proposed on land within the State Agricultural or Conservation districts because projects in the State Agricultural or Conservation districts would require a State Land Use District Boundary Amendment and may also require other discretionary approvals at both the State and County levels to proceed. These approvals could take many years to obtain and are subject review and approval of State and County decision making bodies, which will need to weigh the merits of each project at the time approvals are requested. Therefore, proposed projects in the State Agricultural or Conservation district are considered more speculative and cannot be assumed to proceed and contribute to the housing supply in the foreseeable future.

In addition, while many projects are proposed in the region (in the State Urban District and also in the State Agricultural or Conservation districts), it is unknown whether all proposed projects will proceed or be built as currently proposed, as desired product types change over time and project developers are constantly assessing project feasibility. It should be noted that for several proposed projects in the area, there has been no movement on the proposed plans—in some cases for many years. Other projects may be proceeding only with preliminary or first phases.

Therefore, considering proposed projects within the State Urban District, even with substantial proposed development and a strong and sustained rate of new home production, a shortage of approximately 7,900 homes is anticipated in North Kona/South Kohala by 2030 (Mikiko Corporation 2007). Thus, there is a need for additional homes in the region and a reclassification of land to the State Urban District.

Compounding the housing shortage, North Kona/South Kohala was estimated to provide 21 percent of the Island's employment in 2006, but these areas provide enough residences to

~~[16] The projected future supply does not include proposed developments within lands designated within the State LUC Agricultural or Conservation Districts as of October 1, 2007, because such projects require discretionary approvals at both the State and County levels and thus are currently considered too speculative to assume production. Such projects include 'O'oma itself, as well as other announced proposals such as Kula Lei, Kaloko Makai and Waikoloa Highlands.~~

support only 12 percent of the Island’s population, leading to a tremendous amount of commuting into the region. A relative lack of resident-oriented shopping, entertainment, and other services in the North Kona/South Kohala area also adds to traffic headed into the Kailua-Kona area from the north.

POTENTIAL IMPACTS AND MITIGATION MEASURES

‘O‘oma Beachside Village will help to satisfy the housing demand of a growing population by providing 950 to 1,200 new homes in West Hawai‘i. ‘O‘oma Beachside Village is close to major employment centers to the north and its mixed use design will provide shopping and other services. Objectives of ‘O‘oma Beachside Village include: 1) providing homes near workplaces, thereby increasing quality of life through decreasing commuting; and 2) creating a complete and vibrant community of mixed uses, such as homes, retail-commercial spaces, recreation areas, and open space.

‘O‘oma Beachside Village also responds to the demand for housing in the North Kona/South Kohala area by providing a broad spectrum of housing opportunities including market, workforce, gap group, and affordable homes. ‘O‘oma Beachside Village is unique because even though it is located makai of Queen Ka‘ahumanu Highway, an area ~~often reserved for~~ with many resort developments, it offers a wide range of housing choices, focused on the primary resident market. ‘O‘oma Beachside Village’s inclusionary design provides for a mixed-income community allowing for social diversity, a range of ages, and diverse life experiences.

‘O‘oma Beachside Village’s range of housing will include affordable housing in accordance with the County’s affordable housing requirements (currently 20 percent of the number of units under Hawai‘i County Code, Chapter 11). The pricing of such units will be in compliance with applicable State and County regulations. ‘O‘oma Beachside Village’s range of housing will also include ~~homes for~~ “gap group” and “workforce housing” ~~households~~, defined as homes priced for households earning 150 percent to 220 percent of the median income.

Based on projected sales prices, households earning 150 percent to 180 percent of the 2007 County median income should be able to purchase ~~multiple family units~~ a multi-family home at ‘O‘oma Beachside Village assuming interest rates of six percent to seven percent and a 20 percent down payment. Households earning between 200 to 220 percent of the 2007 County median income (assuming similar interest rates and down payment amounts), should be able to purchase the single family homes at ‘O‘oma Beachside Village. “Move-up” households, or others with more than 20 percent available for a down payment, would be able to purchase any of the homes at lower income ranges than those noted above.

It is expected that ‘O‘oma Beachside Village’s traditional neighborhood design will promote walking within the community and interaction among residents, thus fostering a sense of neighborliness, civic pride, and shared responsibility. Community amenities such as neighborhood parks, the coastal preserve, and the trail system, will be available to all residents regardless of housing type or cost.

4.10.3 Neighborhood Commercial Uses

Currently, there are no commercial uses within the Property. Kailua-Kona to the south is West Hawai'i's primary regional commercial area. The North Kona/South Kohala area contains approximately 2.1 million square feet of retail space and approximately 500,000 square feet of office space. The majority of the retail and office space is in the North Kona area.

Commercial establishments in North Kona serve broad regional markets across the County. Examples of this are Costco and The Pottery Terrace, the largest office building on the island.

The retail vacancy rate in the North Kona/South Kohala area is approximately two to three percent, indicating that the retail market is undersupplied. Office vacancies are about seven percent in North Kona, and zero percent in South Kohala,

POTENTIAL IMPACTS AND MITIGATIVE MEASURES

'O'oma Beachside Village will be a complete community with neighborhood shops, a small grocery store, restaurants, offices, and other businesses. Commercial uses will be located within the Mauka and Makai Mixed-Use Villages (See Figure 1). Businesses and other elements, such as parks, trails, and the school, are critical to make 'O'oma Beachside Village a real, vibrant community with essential services for residents within walking distance.

As an integral part of 'O'oma Beachside Village, stores and services will help to reduce car trips onto Queen Ka'ahumanu Highway since many establishments providing for residents' day-to-day needs will be within walking and biking distance. Therefore, unlike residents in conventional residential subdivisions, 'O'oma Beachside Village residents will not need to drive outside of the community for many of their daily needs.

The North Kona/South Kohala area is projected to support approximately 4.67 million square feet of additional commercial (retail and office) space by 2030. Commercial projects in the region that are proposed on land currently within the State Urban District could provide up to 2.6 million square feet of commercial space if they are developed as currently proposed.[17] Therefore, even if all such commercial projects are developed in full, it is estimated that the region could support an additional 2.07 million square feet of commercial space by 2030 (Mikiko Corporation 2007).

A total of approximately 200,000 square feet of commercial space is proposed within 'O'oma Beachside Village: approximately 50,000 square feet in the Makai Village and approximately 150,000 square feet in the Mauka Village. It is projected that by 2020 the total area of the Makai Village (50,000 square feet) and approximately 100,000 of the Mauka Village would be built

[17] ~~Similar to the residential analysis, the~~ The projected future supply does not take into account development proposed on lands within the State Agricultural or Conservation Districts as of October 1, 2007, nor does it take into account projects designated for industrial use, such as the West Hawai'i Business Park and the Kaloko Industrial Park. In addition, although the Department of Transportation-Airports division is currently working on a revised master plan for KOA, such potential development has not been considered here as, at this early stage, it is too speculative for analysis.

out. The balance of commercial space in the Mauka Village is anticipated to be completed by 2029.

While ‘O‘oma Beachside Village residents are expected to support the commercial uses, additional market support is expected from populations that originate within a three- to four mile radius of ‘O‘oma Beachside Village. In addition to offering convenience to these populations, the commercial area at ‘O‘oma Beachside Village is also anticipated to alleviate the need for some trips into Kailua-Kona.

4.10.4 Community Character

Forty years ago, West Hawai‘i was a stable agrarian culture with scattered villages, a resident population of about 14,000, little tourism activity, and limited commercial and industrial development. All products were shipped from O‘ahu and there were few major retailers. West Hawai‘i had a relatively simple financial structure, and most of the County’s businesses were located in East Hawai‘i.

The construction of Queen Ka‘ahumanu Highway in the early 1970s led to the development of major destination resorts along the North Kona and South Kohala coastlines, including the Mauna Kea Resort, Waikoloa Resort, and Hualālai Resort. Over the last several decades land uses in West Hawai‘i have undergone a gradual change as more in-fill urban uses were built on previously vacant properties, particularly makai of Queen Ka‘ahumanu Highway.

Today, the North Kona and South Kohala districts contain the primary drivers of the region’s economy, which is anchored in the visitor, construction, and related service industries. Kailua-Kona is the regional hub and has attracted retailers, shopping centers, residential and vacation home development, and industrial uses.

POTENTIAL IMPACTS AND MITIGATION MEASURES

‘O‘oma Beachside Village will complement the pattern of in-fill development along the coast in a way that is envisioned in, and consistent with, the *County of Hawai‘i General Plan* and ~~draft~~ Kona Community Development Plan. In doing so, ‘O‘oma Beachside Village will help to satisfy the housing demand of a growing population and provide for a complete and vibrant community of mixed uses.

‘O‘oma Beachside Village differs substantially from the major coastal resort designations makai of Queen Ka‘ahumanu Highway by providing diverse housing opportunities within a beachside setting, rather than an economically stratified, primarily second home, resort residential development. ‘O‘oma Beachside Village will provide a broad range of residential opportunities, which are not currently not available along the coastline.

Creation of ‘O‘oma Beachside Village will change the visual appearance of the Property from vacant land to a built environment. This change will be visible from some points on Queen Ka‘ahumanu Highway looking across the Property. However, the line-of-sight toward the ocean on Queen Ka‘ahumanu Highway directly in front of the Property will not be affected since vegetation, terrain, and a berm, already obscure makai views (See Figure ~~21~~ 22).

4.10.5 Economy

The growth of Hawai'i County 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. As tourism became the primary economic generator during the 1980s, a shift in employment from the non-service to the service industry sector was evident.

In 1980, the service industry accounted for approximately 60.6 percent of average employment, rising to 71.3 percent in 1990 and 78.5 percent in 1997. Between 1981 and 1997, the County experienced the largest growth in hotel job count statewide with an average annual growth rate of 5.2 percent. The principal visitor destination area of the County is the North Kona and South Kohala regions (Hawai'i County 2005).

The County of Hawai'i has supported annual increases in the number of employed persons since 2000. In February 2007, there were an estimated 81,450 employed persons in the County (DLIR 2007).

POTENTIAL IMPACTS AND MITIGATION MEASURES

'O'oma Beachside Village will generate significant, on-going positive economic and fiscal benefits for residents of Hawai'i, and for the County and State governments. Creation of 'O'oma Beachside Village will generate employment, income, and taxes. In addition, 'O'oma Beachside Village is expected to support long-term positive economic impacts, including additional consumer expenditures, employment opportunities, personal income, and government revenue enhancement.

Employment

Development Employment – During initial construction up to 2020, 'O'oma Beachside Village is projected to generate approximately 380 full-time equivalent (FTE) jobs per year. During subsequent years of build-out (2021 to 2030), this may subside to approximately 290 FTE development-related jobs per year.

Development-related jobs are expected to generate annual personal earnings of approximately $21.4 million from 2010 to 2030 and approximately $17.1 million from 2021 to 2030. This represents an annual income of approximately $57,000 to $59,000 per full-time job.

Operational Employment - By full build-out in 2030, the improvements at 'O'oma Beachside Village are expected to have created approximately 480 direct permanent, ongoing FTE new jobs. The great majority of these new jobs would be at the retail and office facilities on-site, while a handful other jobs may be physically located off-site. These direct new jobs would include professional, technical and managerial, as well as entry-level positions.

At build-out, about 200 of the direct new jobs to be generated by 'O'oma Beachside Village are expected to represent net additional employment opportunities within the County. These differ from the new job count noted above in that these are jobs expected to be created by the new on-

Island expenditures that O'oma Beachside Village is likely to attract. These new expenditures would come from those persons anticipated to move to the Island because of 'O'oma Beachside Village's housing opportunities. These net additional jobs would be spread throughout the Island, and in all sectors of the local economy. They would reflect the direct, indirect, and induced impacts of the new on-Island spending generated by 'O'oma Beachside Village, and are the basis for the projected new personal earnings and fiscal impacts reported below.

Altogether, by full build-out in 2030, the 200 net additional jobs created as a result of 'O'oma Beachside Village are estimated to generate personal earnings of about $10.8 million per year, at average annual earnings of about $54,000 per full-time job.

Government Revenues and Expenditures

County Revenues – 'O'oma Beachside Village's most significant fiscal impact would be the higher real property taxes it would generate compared to those currently paid on the Property. By 2030, 'O'oma Beachside Village is projected to supply the County with approximately $3.7 million in additional real property tax revenues on an on-going annual basis.

'O'oma Beachside Village would also generate various minor taxes and fees for the County. Added to real property taxes, total taxes earned by the County as a result of 'O'oma Beachside Village are estimated at $3.8 million per year by 2030 and thereafter.

After associated County expenditures, net County revenues (taxes less operating revenues) from 'O'oma Beachside Village are expected to be approximately $3.2 million per year by 2030 and thereafter.

State Revenues – 'O'oma Beachside Village's impact to the State will accrue from: 1) general excise tax (GET); 2) employee income taxes from both on- and off-site jobs; and 3) other taxes, licenses, fees, and payments. By 2030 'O'oma Beachside Village is projected to supply the State with approximately $2.8 million in tax revenues on an on-going annual basis.

After associated State expenditures, net State revenues (taxes less operating revenues) from 'O'oma Beachside Village are expected to be approximately $1.4 million per year by 2030 and thereafter.

4.11 PUBLIC SERVICES AND FACILITIES

Overview

As discussed in Section 4.10.1 (Population), projections indicate that the Hawai'i County population will increase to 224,573 people in 2030, a 51 percent increase from the 2007 population (SMS 2007). For the North Kona District (Census Tract 215.01) and South Kohala District (Census Tract 217.01), the population is expected to increase to 58,300 people in 2030, a 160 percent increase from the 2007 population and an average annual increase of 4.3 percent (SMS 2007).

'O'oma Beachside Village will provide homes for Hawai'i's growing population. Build-out of 'O'oma Beachside Village will occur over approximately 20 years and thus the need for additional public services to serve 'O'oma Beachside Village residents is expected to occur incrementally and in proportion with Hawai'i's population growth. The needs of a growing population relating to public services and other issues will need to be addressed regardless of whether 'O'oma Beachside Village is built.

'O'oma Beachside Village will contribute to increased State and County revenues in the form of increased property taxes, general excise taxes, and increased income taxes from increased employment. Should the State and County choose to allocate these additional tax revenues to fund more services to protect public health, welfare, and safety, any cost to the public that may result will be effectively minimized.

4.11.1 Schools

Presently, the State of Hawai'i Department of Education (DOE) operates five public schools in the Kealakehe Complex of the Honoka'a-Kealakehe-Kohala-Konawaena Complex Area, which include: Kealakehe High School (grades 9-12), Kealakehe Intermediate School (grades 6-8) and Kealakehe Elementary School (grades K-5), Kahakai Elementary School (grades K-5) and Hōlualoa Elementary School (grades K-5). Table 5 contains current and projected school enrollment information.

Table 5. Capacity and Enrollment for Public Schools

Kealakehe Complex			
School	**Capacity**	**Enrollment in 2006-2007 School Year**	**Projected Enrollment 2011-2012**
Kealakehe High School (Grades 9-12)	1,480	1,567	1,395
Kealakehe Intermediate School (Grades 6-8)	1,055	933	874
Kealakehe Elementary School (Grades K-5)	983	983	1,118
Kahakai Elementary School (Grades K-5)	819	564	703
Hōlualoa Elementary School (Grades K-5)	473	447	623

Source: State of Hawai'i Department of Education, 2006.

According to DOE,[18] enrollment at Kealakehe Elementary School is at its facility capacity, and is expected to grow over the next six years and exceed the school's facility capacity by 388 students in the 2012-2013 school year.

[18] DOE letter dated May 24, 2007; letter included in Chapter 11 of this EIS.

The enrollment at Kealakehe Intermediate School in the 2006-2007 school year is approximately 122 students below the school's facility capacity. Enrollment at Kealakehe is expected to level off over the next six years.

Kealakehe High School is presently over school facility capacity and enrollment is expected to fluctuate only slightly over the next six years.

There are also three public charter schools in the region: Innovations Public Charter School (PCS) (grades 1-6) located on Queen Ka'ahumanu Highway in Kailua; Kanu o ka 'Āina New Century Public Charter School (NCPCS) (grades K-12), which operates out of the Lālāmilo Experiment Station in Waimea; and West Hawai'i Explorations Academy Public Charter School (grades 7-12) operating at NELHA.

Innovations PCS, which has an open admissions policy, integrates multi-age groupings, project-based focus and technology into its curriculum. The school has a capacity for 120 students. For the 2006-2007 school year more than 150 students applied, and approximately 242 students were on the wait list (Innovations PCS 2006).

Kanu o ka 'Āina NCPCS, which has an open admissions policy, integrates native Hawaiian culture project-based learning and technology into its curriculum. Students have access to outdoor learning laboratories in Kawaihae, Pu'upulehu, Kukui, and Waipi'o Valley. The school has a capacity for 150 students but may be able to accommodate up to 250 students upon permanent site relocation (Kanu o ka 'Āina 2006).

The West Hawai'i Explorations Academy PCS, which has an open admissions policy, integrates inquiry-based, problem-solving and project-based learning, for students interested in marine and environmental science. Grades 7 and 8 currently have a capacity for 25 students per grade level. Grades 9 to 12 can accommodate 15 students per grade level (West Hawai'i Explorations Academy 2006).

POTENTIAL IMPACTS AND MITIGATION MEASURES

According to their letter dated May 24, 2007, DOE estimates that 'O'oma Beachside Village (based on a proposed 950 to 1,200 homes) will generate 239 to 296 elementary students, 89 to 110 middle school students, and 71 to 88 high school students. Public school students from 'O'oma Beachside Village would attend schools in the Kealakehe High School Complex.

'O'oma Beachside Village has designated a three-acre site, adjacent to the Community Park, for a school site. It is expected that a charter school could occupy the site.

'O'oma Beachside Village, LLC will comply with all applicable laws regarding school impact fees. In 2007, the State Legislature passed a law establishing school impact fees (See HRS Section 302A-1601 et. seq). Under this new law, it is possible that 'O'oma Beachside Village, LLC will be required to pay an impact fee.

Representatives from 'O'oma Beachside Village have had several meetings with DOE. Currently, 'O'oma Beachside Village, LLC is working with DOE on an agreement to address the

means by which ‘O‘oma Beachside Village will fulfill its obligations with respect to school impact fees.

4.11.2 Police

The County of Hawai‘i Police Department’s Kealakehe Station is located mauka of Queen Ka‘ahumanu Highway, approximately two miles south of the Property. The station provides service to the North and South Kona Districts. There are also substations in Keauhou and Captain Cook, and a mini-station in Kailua Village.

POTENTIAL IMPACTS AND MITIGATION MEASURES

It is not expected that ‘O‘oma Beachside Village would require an extension of the existing service area for police services, although additional personnel may be necessary. As Hawai‘i County’s population grows, there is a need for the County to allocate resources necessary to adequately fund police services. These additional funds could potentially be allotted from the increased tax revenues resulting from ‘O‘oma Beachside Village, as previously discussed.

‘O‘oma Beachside Village, LLC will coordinate with the Police Department to address service capabilities of police operations, address their concerns, and develop appropriate mitigation measures, if necessary.

4.11.3 Fire

Fire prevention, suppression and protection services for the region are provided by the Kailua-Kona Fire Station, approximately four miles south of the Property, near the intersection of Palani Avenue and Queen Ka‘ahumanu Highway. The station, which serves areas within a 30-mile radius, from Keauhou to the Kona Village Resort, is equipped with a ladder truck, tanker, rescue boat and Emergency Medical Service ambulance. Back-up support to the station is provided by a volunteer-operated fire station located along Māmalahoa Highway. Other fire stations are located in Keauhou, Waikoloa, and South Kohala.

POTENTIAL IMPACTS AND MITIGATION MEASURES

‘O‘oma Beachside Village is not expected to require an extension of the existing service area for fire prevention and emergency services, although additional personnel may be necessary. As Hawai‘i County’s population grows, there is a need for the County to allocate resources necessary to adequately fund fire prevention and emergency services. These additional funds could potentially be allotted from the increased tax revenues resulting from ‘O‘oma Beachside Village, as previously discussed.

‘O‘oma Beachside Village, LLC will coordinate with the Fire Department to address service capabilities of Fire Department operations, address their concerns, and develop appropriate mitigation measures, if necessary.

Within ‘O‘oma Beachside Village fire apparatus access roads shall be in accordance with Uniform Fire Code (UFC) Section 10.207; water supply shall be in accordance with UFC

Section 10.301(c); and buildings under construction shall comply with the provisions of UFC Article 87.

4.11.4 Medical

The closest health care facility to the Property is Kona Community Hospital, located approximately 17 miles southeast on Haukapila Street in Kealakekua. The 94-bed facility provides acute and long-term care services (HHSC 2006).

Other private medical and dental service providers, which have regular business hours, are located in West Hawai'i, including a Kaiser Permanente Clinic.

POTENTIAL IMPACTS AND MITIGATION MEASURES

'O'oma Beachside Village residents, at some time, may require health care and emergency medical services. 'O'oma Beachside Village's commercial areas provide the opportunity for medical services, such as doctors' offices and/or a medical clinic, to be developed within 'O'oma Beachside Village to serve the community and neighboring communities.

4.11.5 Recreational Facilities

Numerous recreational parks and facilities are located in close proximity to the Property. Bordering to the northwest is Wāwāloli Beach Park, operated by NELHA. The white sand beach has a children's swimming area, consisting of a large tide pool surrounded by a lava rock wall, which serves to break waves during high tide. It also has picnic tables, barbecue pits, showers, and other public facilities. On-shore pole fishing is possible along the southern shore, amidst the cliffs. Along the shoreline, there is an existing dirt trail with access to many small tide pools.

To the south of the Property, in the Kohanaiki shoreline area, are four open campground areas, a popular surf spot, known as "Pine Trees," a trail with benches and vista points, and a trail that will connect to the 175-mile Ala Kahakai National Historic Trail corridor, which traverses through numerous ancient Hawaiian settlement sites and ahupua'a.

Kekaha Kai State Park (formerly known as Kona Coast State Park) is a 1,700-acre park and wildlife sanctuary, situated four miles north of the Property, along the coast. Facilities at the park are minimal with portable toilets and a graded, unpaved access road and parking area at the Mahai'ula section. The Kua Bay section at north end of the park offers beach-related activities.

The Kaloko-Honokōhau National Historical Park, a 1,160-acre national historical landmark, is located approximately 0.5 miles south of the Property. The park consists of extensive natural and cultural resources, including archaeological sites, wetlands, and fishponds.

Approximately three miles south of the Property is the Old Kona Airport State Recreation Area, which is an 84-acre coastal park that includes areas for picnicking, sunbathing, fishing, wading, tidepooling, and surfing. Facilities include a special events pavilion and a jogging path.

The Honokōhau Small Boat Harbor, located 1.5 miles south of the Property, has a capacity for 450 small boats, and has other facilities to accommodate boat repair, restaurant, dry storage, etc.

The Kona Aquatic Center has facilities for lap swimming and water activity area for young children.

POTENTIAL IMPACTS AND MITIGATION MEASURES

'O'oma Beachside Village will enhance recreational resources in the area by providing approximately 75 acres of public open space (18-acres as a public shoreline park with community pavilion and 57 acres designated as a coastal preserve) along the ocean frontage. In addition the Māmalahoa Trail will remain protected and preserved.

Public Shoreline Park & Community Pavilion – The 18 acres along the shoreline will be designated as a public shoreline park, and will be an extension of the beach parks planned at The Shores at Kohanaiki and NELHA. The shoreline park will include parking, comfort station, and a public-use community pavilion.

Coastal Preserve – 57 acres adjoining and mauka of the public shoreline park will be designated as coastal preserve. The coastal preserve contains known archaeological and cultural sites, including burials. Therefore, to protect the integrity of these sites, the coastal preserve will remain generally undisturbed and development will be prohibited, with the exception of trails between the community and the shoreline.

Community and Neighborhood Parks – A centrally located community park will include recreational facilities such as a soccer field and restrooms. Smaller, neighborhood pocket parks will be dispersed throughout 'O'oma Beachside Village, and connected by the community trail system. Pedestrian trails and paths will make these green spaces accessible for residents to enjoy, and add a layer of interconnectivity within the community. The neighborhood parks total approximately five acres.

Māmalahoa Trail – The Māmalahoa Trail, which will remain protected and preserved, is approximately 10 feet wide and runs north-south through the Property. A buffer of 50 feet on both sides of the Trail will remain undisturbed. Therefore, the Māmalahoa Trail and buffer area will provide a 110-foot wide open space corridor, approximately 2,520 feet long, and encompassing approximately seven acres.

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Chapter 5

Land Use Conformance

5 LAND USE CONFORMANCE

State of Hawai‘i and Hawai‘i County land use plans, policies, and ordinances relevant to ‘O‘oma Beachside Village are described below.

5.1 STATE OF HAWAI‘I

5.1.1 Chapter 343, Hawai‘i Revised Statutes

Compliance with Chapter 343, HRS is required as described in Section 1.5 of this EIS.

5.1.2 State Land Use Law, Chapter 205, Hawai‘i Revised Statutes

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

As discussed in Section 2.1.3 (Property Description), a State Land Use District Boundary Amendment (SLUDBA) is being sought to reclassify approximately 181.169 acres (the Petition Area) of the ‘O‘oma Beachside Village property from the State Land Use Conservation District to the State Land Use Urban District (see Figure 10). This Petition Area includes approximately 179.355 acres of Parcel 4 and the 1.814-acre portion of the State ROW. Approximately 38.211 acres of Parcel 4 (consisting of the shoreline area and proposed coastal preserve) will remain in the Conservation District, and therefore are not included as part of the Petition Area.

The 83 acres of Parcel 22 were reclassified to the State Land Use Urban District by Land Use Commission Decision and Order dated February 6, 1986, in Docket No. A85-592. The original Petitioner in Docket A85-592 was the State of Hawai‘i through the Department of Planning and Economic Development (DPED). DPED had proposed to develop a research and technology industrial park on the reclassified parcel. Because ‘O‘oma Beachside Village, LLC’s plans for Parcel 22 are different from DPED’s proposed development in Docket No. A85-592, ‘O‘oma Beachside Village, LLC, intends to file a Motion to Amend the Conditions in that Decision and Order to conform to its residential, mixed use development plans for ‘O‘oma Beachside Village.

The current owners of Parcel 22, ‘O‘oma Beachside Village, LLC, envision a master-planned residential community with mixed uses. The proposed ‘O‘oma Beachside Village, which includes Parcel 22 and Parcel 4, will be positioned as a primary residential community with a full range of housing opportunities and access to the shoreline.

Decision-making criteria to be used in the LUC’s review of petitions for reclassification of district boundaries is found in Section 205-17, HRS, and Section 15-15-77, HAR. In addition, standards for determining the Urban district are contained in Section 15-15-18, HAR. The following is an analysis of how ‘O‘oma Beachside Village conforms to these criteria and standards.

HRS §205-17 Land use commission decision making criteria*. In its review of any petition for reclassification of district boundaries pursuant to this chapter, the commission shall specifically consider the following:*

(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;

Discussion: ‘O‘oma Beachside Village conforms to the applicable goals, objectives, and policies of the Hawai‘i State Plan and functional plans, as discussed in Sections 5.1.4 and 5.1.5 of this EIS.

(2) The extent to which the proposed reclassification conforms to the applicable district standards;

Discussion: ‘O‘oma Beachside Village conforms to the Urban District standards as discussed below in “§15-15-18 Standards for determining ‘U’ urban district boundaries.”

(3) The impact of the proposed reclassification on the following areas of state concern:
(A) Preservation or maintenance of important natural systems of 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: Natural areas within ‘O‘oma Beachside Village will be preserved and remain undeveloped, such as the 75 acres along the shoreline to be designated as a shoreline park and coastal preserve.

The community design has been planned to avoid known archaeological sites within the Property, and to preserve the Māmalahoa Trail in place with appropriate buffers

‘O‘oma Beachside Village is not located on existing agricultural land; therefore, the project will not impact agricultural resources.

(D) Commitment of state funds and resources;

Discussion: As discussed in Section 2.1.2 (Land Ownership), the State of Hawai‘i is the fee owner of the State ROW, erroneously referred to on survey maps as “King’s Highway,” which is located between Parcels 4 and 22 and extends north-south, paralleling Queen Ka‘ahumanu Highway. At the southern boundary of the Property, the State ROW and the Māmalahoa Trail share the same alignment; however, approximately one-third of the way into the Property, the two separate, with the historic Māmalahoa Trail veering slightly mauka and the State ROW coming to a dead end north of ‘O‘oma Beachside Village. It is understood that the portion of the State ROW not aligned with the Māmalahoa Trail is the result of a mapping error. ‘O‘oma Beachside Village, LLC has obtained State authorization to include the State ROW and the Māmalahoa Trail in its State Land Use and County zoning applications.

‘O‘oma Beachside Village also proposes an access onto Queen Ka‘ahumanu Highway, which is a State highway.

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

Discussion: 'O'oma Beachside Village will stimulate the local economy as discussed in Section 4.10.4 of this EIS.

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

Discussion: 'O'oma Beachside Village will provide housing opportunities for all income groups as discussed in Section 4.10.2 of this EIS.

(4) The standards and criteria for the reclassification or rezoning of important agricultural lands in section 205-50;

Discussion: 'O'oma Beachside Village does not involve the reclassification or rezoning of important agricultural lands.

(5) The county general plan and all community, development, or community development plans adopted pursuant to the county general plan, as they relate to the land that is the subject of the reclassification petition; and

Discussion: 'O'oma Beachside Village conforms to the Urban Expansion designation of the Property under the *County of Hawai'i General Plan* and the proposed Kona Community Development Plan as discussed in Sections 5.2.1 and 5.2.3.

(6) The representations and commitments made by the petitioner in securing a boundary change.

Discussion: The petitioner, 'O'oma Beachside Village, LLC, is committed to following through with the representations and commitments it has made to the community and the State Land Use Commission. The financial statements of the petitioner were provided as an exhibit of the SLUDBA petition submitted on April 3, 2007. O'oma Beachside Village, LLC has done an Fiscal and Economic Impact Assessment (Appendix L) for 'O'oma Beachside Village to more accurately determine project costs and will be submitting revised financial statements further demonstrating 'O'oma Beachside Village, LLC's economic ability to carry out its representations and commitments relating to the project.

HAR §15-15-77 Decision-making criteria for boundary amendments. *(a) The commission shall not approve an amendment of a land use district boundary unless the commission finds upon the clear preponderance of the evidence that the proposed boundary amendment is reasonable, not violative of section 205-2, HRS, and consistent with the policies and criteria established pursuant to sections 205-16, 205-17, and 205A-2, HRS.*

(b) In its review of any petition for reclassification of district boundaries pursuant to this chapter, the commission shall specifically consider the following:

(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;

Discussion: 'O'oma Beachside Village's conformance with the applicable goals, objectives, and policies of the Hawai'i State Plan and Functional Plans are discussed in Sections 5.1.4 and 5.1.5 of this EIS.

(2) The extent to which the proposed reclassification conforms to the applicable district standards;

Discussion: The extent to which the proposed reclassification conforms to the applicable district standards is discussed below.

(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 or other natural resources relevant to Hawaii's economy including, but not limited to agricultural resources;
(D) Commitment of state funds and resources;
(E) Provision for employment opportunities and economic development; and
(F) Provision for housing opportunities for all income groups, particularly the low, low-moderate, and gap groups;

Discussion: The impact of the proposed reclassification on areas of state concern is discussed in the preceding section regarding Section 205-17, HRS, *Land Use Commission Decision Making Criteria*.

(4) In establishing the boundaries of the districts in each county, the commission shall give consideration to the general plan of the county in which the land is located;

Discussion: 'O'oma Beachside Village's conformance with the *County of Hawai'i General Plan* (2005) land use policies is discussed in Section 5.2.1 of this EIS.

According to the *General Plan*, the most makai sliver of Parcel 4 is designated as "Open Space" with the bulk of Parcel 4 designated as "Urban Expansion" (Figure 7 ~~11~~). "Urban Expansion" allows for a mix of high density, medium density, low density, industrial, industrial-commercial, and/or open designations in areas where new settlements may be desirable. The shoreline park, coastal (archaeological) preserve, greenway trails, and landscape buffers proposed within the Open Space portion of Parcel 4 are consistent and compatible with the "Open Space" designation. The residential and mixed uses planned for Parcel 22 is designated as "Urban Expansion," with a narrow strip of "Open Space" bordering the east end of the parcel along Queen Ka'ahumanu Highway. The State ROW is designated "Urban Expansion."

The land uses proposed in the 'O'oma Beachside Village Conceptual Master Plan (Figure 1) are consistent with the "Urban Expansion" designation and "Open Space" designation along the highway.

Discussion on 'O'oma Beachside Village's conformance with the ~~current working draft of the~~ Kona Community Development Plan is discussed in Section 5.2.2 of this EIS.

(5) The representations and commitments made by the petitioner in securing a boundary change, including a finding that the petitioner has the necessary economic ability to carry out the representations and commitments relating to the proposed use or development; and

Discussion: The petitioner, 'O'oma Beachside Village, LLC, is committed to following through with the representations and commitments it has made to the community and the State Land Use Commission. The financial statements of the petitioner were provided as an exhibit of the SLUDBA petition submitted on April 3, 2007. 'O'oma Beachside Village, LLC has done an Fiscal and Economic Impact Assessment (Appendix L) for 'O'oma Beachside Village to more accurately determine project costs and will be submitting revised financial statements further demonstrating 'O'oma Beachside Village, LLC's economic ability to carry out its representations and commitments relating to the project.

(6) Lands in intensive agricultural use for two years prior to date of filing of a petition or lands with a high capacity for intensive agricultural use shall not be taken out of the agricultural district unless the commission finds either that the action:

(A) Will not substantially impair actual or potential agricultural production in the vicinity of the subject property or in the county or State; or

Discussion: 'O'oma Beachside Village will not impact agricultural activities since none currently occur on the Property. As discussed in Section 3.3 (Soils), the Property is rated "E" and unclassified on the LSB classification, and not classified for the ALISH, indicating that the Property is not agriculturally significant. Therefore, the proposed project will not reduce the inventory of agriculturally significant lands.

(B) Is reasonably necessary for urban growth.

Discussion: The 'O'oma Beachside Village is surrounded by existing urban uses. The extent to which the proposed reclassification for 'O'oma Beachside Village conforms to the Urban District standards is discussed below.

(c) Amendments of a land use district boundary in conservation districts involving land areas fifteen acres or less shall be determined by the commission pursuant to this subsection and section 205-3.1, HRS.

(d) Amendments of land use district boundary in other than conservation districts involving land areas fifteen acres or less shall be determined by the appropriate county land use decision-making authority for the district.

(e) Amendments of a land use district boundary involving land areas greater than fifteen acres shall be determined by the commission, pursuant to this subsection and section 205-3.1, HRS.

Discussion: 'O'oma Beachside Village Petition Area is larger than 15 acres; therefore, the State Land Use Commission is the appropriate authority to consider the reclassification sought under the SLUDBA. The State Land Use Commission shall be the decision-making authority for the SLUDBA and accepting authority for the EIS.

Standards for Determining Urban District Boundaries

***§15-15-18 Standards for determining "U" urban district boundaries**. Except as otherwise provided in this chapter, in determining the boundaries for the "U" urban district, the following standards shall be used:*

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

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

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

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

(C) Sufficient reserve areas for foreseeable urban growth;

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

(4) Land contiguous with existing urban areas shall be given more consideration than non-contiguous land, and particularly when indicated for future urban use on state or county general plans;

(5) It shall include lands in appropriate locations for new urban concentrations and shall give consideration to areas of urban growth as shown on the state and county general plans;

(6) It may include lands which do not conform to the standards in paragraphs (1) to (5):

(A) When surrounded by or adjacent to existing urban development; and

(B) Only when those lands represent a minor portion of this district;

(7) It shall not include lands, the urbanization of which will contribute toward scattered spot urban development, necessitating unreasonable investment in public infrastructure or support services; and

(8) It may include lands with a general slope of twenty per cent or more if the commission finds that those lands are desirable and suitable for urban purposes and that the design and construction controls, as adopted by any federal, state, or county agency, are adequate to protect the public health, welfare and safety, and the public's interests in the aesthetic quality of the landscape.

Discussion: The 'O'oma Beachside Village property includes 83 acres (TMK 7-3-009:022; "Parcel 22") of existing Urban District land. The proposed reclassification of approximately 181.169 acres (179.355-acre portion of TMK 7-3-009:004 and the 1.814-acre portion of the State ROW; "Petition Area") from Conservation District to Urban District conforms to the standards and characteristics of the Urban District set forth above.

The Petition Area is contiguous with Urban land to the south and east, and is only approximately five miles north of the Queen Ka'ahumanu Highway/Palani Road junction. The Petition Area and Urban District Parcel 22 will be planned and developed together as one project.

East of the 'O'oma Beachside Village property is Queen Ka'ahumanu Highway, and to the south is the approximately 470-acre golf course community called The Shores at Kohanaiki, currently under construction, and located within the Urban District.

The NELHA property, directly north of 'O'oma Beachside Village, consists of a mix of commercial, public, quasi-public, and industrial uses. Directly north of NELHA is the Kona International Airport at Keāhole, which is primarily within the Urban District.

The requested reclassification of the Petition Area and a subsequent change of zone by the County of Hawai'i will permit the Petition Area to be developed in conformity with the surrounding land uses.

5.1.3 Coastal Zone Management Act, Chapter 205A, Hawai'i Revised Statutes

The Coastal Zone Management Area as defined in Chapter 205A, HRS, includes all the lands of the State. As such, the proposed 'O'oma Beachside Village lies within the Coastal Zone

Management Area. The County's SMA extends from Queen Ka'ahumanu Highway in the makai/west direction through the 'O'oma Beachside Village site and to the shoreline.

The relevant objectives and policies of the Hawai'i Coastal Zone Management (CZM) Program along with a detailed discussion of how the 'O'oma Beachside Village will coincide with these objectives and policies, is discussed below.

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
RECREATIONAL RESOURCES			
Objective: Provide coastal recreational opportunities accessible to the public.			
Policies:			
(A) Improve coordination and funding of coastal recreational planning and management; and	X		
(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:	X		
(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;	X		
(ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;			X
(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;	X		
(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;	X		
(v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;	X		
(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;	X		
(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and			X
(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6.	X		
Discussion: The 'O'oma Beachside Village project will enhance public shoreline access by providing an 18-acre shoreline park with related facilities, which include a community pavilion, comfort station, and free parking. The results of the marine water chemistry analysis, including further evaluation of the potential changes to groundwater composition, indicate that there is little or no potential for alteration of the marine environment or negative impacts to marine waters due to the development of 'O'oma Beachside Village, as discussed in Section 3.5 (Groundwater Resources and Nearshore Marine Environment).			
HISTORIC RESOURCES			
Objective: *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.*			

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
Policies:			
(A) Identify and analyze significant archaeological resources;	X		
(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and	X		
(C) Support state goals for protection, restoration, interpretation, and display of historic resources.	X		

Discussion: Extensive archaeological surveys were conducted for the 'O'oma Beachside Village property, as discussed in Section 4.1 (Archaeological Resources). Eight sites (SIHP Site 2, 1910, 1911, 1912, 1913, 10155, 18027, and 18773) were identified and approved for preservation by the SHPD. During Rechtman's recent (2006) fieldwork, a new site (SIHP Site 25932) was discovered

The two sites containing burials (SIHP Site 18773 and 25932), which are significant under both Criterion D and Criterion E, will be preserved pursuant to a burial treatment plan prepared in consultation with recognized descendants and the Hawai'i Island Burial Council. The other preservation sites, considered significant under multiple criteria, will be treated in accordance with a preservation plan, to be submitted to and approved by SHPD prior to final subdivision approval.

'O'oma Beachside Village, LLC will comply with all State and County laws and rules regarding the preservation of archaeological and historic sites. Should historic remains, such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work will cease in the immediate vicinity of the find and the State Historic Preservation Division will be contacted for appropriate mitigation, if necessary.

SCENIC AND OPEN SPACE RESOURCES			
Objective: *Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.*			
Policies:			
(A) Identify valued scenic resources in the coastal zone management area;	X		
(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;	X		
(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and	X		
(D) Encourage those developments that are not coastal dependent to locate in inland areas.	X		

Discussion: 'O'oma Beachside Village will conform to all County ordinances regarding building heights, mass, and setbacks, as discussed in Section 4.8 (Visual Resources). 'O'oma Beachside Village is proposed to be low-rise, using appropriate materials, colors, site design standards, and landscaping for the area. 'O'oma Beachside Village will be in character with surrounding uses, north and south of the Property.

In addition, there will be approximately 75 acres of parks and open space near the shoreline consisting of approximately 57 acres of open space and an 18-acre shoreline park. The shoreline park will align with NELHA's shoreline park and archaeological preserve to the north and The Shores at Kohanaiki Shoreline park to the south.

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
COASTAL ECOSYSTEMS			
Objective: *Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*			
Policies:			
(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;	X		
(B) Improve the technical basis for natural resource management;			X
(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;	X		
(D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and			X
(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.	X		

Discussion: As discussed in Section 3.5 (Groundwater Resources and Nearshore Marine Environment), the results of the marine water chemistry analysis, including further evaluation of the potential changes to groundwater composition, indicate that there is little or no potential for alteration of the marine environment or negative impacts to marine waters due to the development of 'O'oma Beachside Village.

ECONOMIC USES			
Objective: *Provide public or private facilities and improvements important to the State's economy in suitable locations.*			
Policies:			
(A) Concentrate coastal dependent development in appropriate areas;	X		
(B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and			X
(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:	X		
(i) Use of presently designated locations is not feasible;			X
(ii) Adverse environmental effects are minimized; and	X		
(iii) The development is important to the State's economy.	X		

Discussion: 'O'oma Beachside Village is an infill development, located between existing Urban uses. 'O'oma Beachside Village is in the *County of Hawai'i General Plan*'s planned path of urbanization and near existing and growing centers of employment.

COASTAL HAZARDS			
Objective: *Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.*			
Policies:			
(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;	X		
(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;	X		

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and			X
(D) Prevent coastal flooding from inland projects.	X		

Discussion: Section 3.4 (Natural Hazards) of this EIS provides discussion of potential natural hazards such as flooding, tsunami inundation, hurricanes, volcanic eruptions, and earthquakes. The development of 'O'oma Beachside Village, however, will not exacerbate any natural hazard conditions.

To mitigate potential impacts to life and property that could be caused by a natural disaster, no habitable structures will be built within the 100-year floodplain (Zone A) or the tsunami inundation zone, and all structures will be constructed in compliance with requirements of the UBC, appropriate to the Zone 4 Seismic Probability Rating, as well as applicable County, State, or Federal standards.

MANAGING DEVELOPMENT			
Objective: *Improve the development review process, communication, and public participation in the management of coastal resources and hazards.*			
Policies:			
(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;			X
(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and			X
(C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.	X		

Discussion: This EIS discusses potential impacts and mitigation measures of 'O'oma Beachside Village.

PUBLIC PARTICIPATION			
Objective: *Stimulate public awareness, education, and participation in coastal management.*			
Policies:			
(A) Promote public involvement in coastal zone management processes;	X		
(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and	X		
(C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.	X		

Discussion: As discussed in Chapter 8 (Consultation), information regarding the proposed 'O'oma Beachside Village has been disseminated to the public through community meetings and presentations, community consultation, printed handouts, a website, and this EIS.

Through this EIS, the State Land Use District Boundary Amendment petition hearings, and the County permitting process, the public has additional opportunities to be involved in the public review process for 'O'oma Beachside Village.

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
BEACH PROTECTION			
Objective: *Protect beaches for public use and recreation.*			
Policies:			
(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;	X		
(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and			X
(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.	X		

Discussion: Any structures in 'O'oma Beachside Village will be set back more than 1,000 feet from the shoreline. The only exception will be public shoreline park facilities, which will be approximately 330 feet away from the shoreline, but still outside of the shoreline setback area.

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

Discussion: The 'O'oma Beachside Village project will enhance public shoreline access by providing an 18-acre shoreline park with related facilities, which include a community pavilion, comfort station, and free parking.

As discussed in Section 3.5 (Groundwater Resources and Nearshore Marine Environment), the results of the marine water chemistry analysis, including further evaluation of the potential changes to groundwater composition, indicate that there is little or no potential for alteration of the marine environment or negative impacts to marine waters due to the development of 'O'oma Beachside Village.

5.1.4 Hawai'i State Plan, Chapter 226, Hawai'i Revised Statutes

The Hawai'i State Plan (Chapter 226, HRS), establishes a set of goals, objectives and policies that serve as long-range guidelines for the growth and development of the State. The Plan is divided into three parts: Part I (Overall Theme, Goals, Objectives and Policies); Part II (Planning, Coordination and Implementation); and Part III (Priority Guidelines). Part II elements of the State Plan pertain primarily to the administrative structure and implementation process of the Plan. As such, comments regarding the applicability of Part II to 'O'oma Beachside Village are not appropriate. The sections of the Hawai'i State Plan directly applicable to 'O'oma Beachside Village, along with a discussion of how the project conforms to the State Plan are included below.

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
HRS § 226-1: Findings and Purpose			
HRS § 226-2: Definitions			
HRS § 226-3: Overall Theme			
HRS § 226-4: State Goals. *In order to guarantee, for the 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 fulfillment of the needs and expectations of Hawaii's present and future generations.* *(2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.* (3) *Physical, social and economic well-being, for individuals and families in Hawaii, that nourishes a sense of community responsibility, of caring and of participation in community life.*			
Discussion: 'O'oma Beachside Village contributes to the attaining these three goals by 1) providing direct employment opportunities for present and future residents of the area; 2) generating increased State and County tax revenues; 3) contributing to the stability, diversity, and growth of local and regional economies; and 4) protecting the archaeological, historic, and natural feature of the Property.			
HRS § 226-5: Objectives and policies for population.			
Objective: *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.*			
Policies:			
(1) Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social and economic aspirations while recognizing the unique needs of each County.	**X**		
(2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.	**X**		
(3) Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.			**X**
(4) Encourage research activities and public awareness programs to foster an understanding of Hawaii's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawaii's population.			**X**
(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.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.			**X**
(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.	**X**		

Discussion: 'O'oma Beachside Village will promote increased opportunities for Hawai'i's people to pursue their physical, social, and economic aspirations by:

- Creating a complete and vibrant community of mixed uses, such as homes, retail-commercial spaces, recreation areas, and open space.
- Providing housing for working families of Hawai'i.
- Providing homes near workplaces, thereby increasing quality of life through decreasing commuting.
- Including a mix of uses and housing types that embrace a diversity of people and activities.
- Contributing to the social infrastructure by including a school site, parks, and other public facilities.

HRS § 226-6: Objectives and policies for the economy in general.			
Objectives: *Planning for the State's economy in general shall be directed toward achievement of the following objectives:*			
(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people.	**X**		
(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.			**X**
Policies:			
(1) Expand Hawaii'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.			**X**
(2) Promote Hawaii as an attractive market for environmentally and socially sound investment activities that benefit Hawaii's people.			**X**
(3) Seek broader outlets for new or expanded Hawaii business investments.			**X**
(4) Expand existing markets and penetrate new markets for Hawaii's products and services.			**X**
(5) Assure that the basic economic needs of Hawaii's people are maintained in the event of disruptions in overseas transportation.			**X**
(6) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.	**X**		
(7) Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawaii's small scale producers, manufacturers, and distributors.			**X**
(8) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.			**X**
(9) Foster greater cooperation and coordination between the government and private sectors in developing Hawaii's employment and economic growth opportunities.	**X**		
(10) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.			**X**
(11) Maintain acceptable working conditions and standards for Hawaii's workers.	**X**		
(12) Provide equal employment opportunities for all segments of Hawaii's population through affirmative action and nondiscrimination measures.			**X**

HAWAI‘I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(13) Encourage businesses that have favorable financial multiplier effects within Hawaii's economy.			**X**
(14) Promote and protect intangible resources in Hawaii, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.	**X**		
(15) 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.			**X**
(16) Foster a business climate in Hawaii--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.			**X**

Discussion: ‘O‘oma Beachside Village would generate significant, on-going economic and fiscal benefits for residents of Hawai‘i, as well as for the County and State governments. Creation of ‘O‘oma Beachside Village would generate employment and consequent income and taxes. In addition, by attracting new and returning residents to the Island and generating additional real estate sales activity, ‘O‘oma is expected to support long-term positive fiscal impacts, including additional consumer expenditures, employment opportunities, and personal income and government revenue enhancement.

HRS § 226-7: Objectives and policies for the economy - agriculture			
Objectives: *Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:*			
(1) Viability of Hawaii's sugar and pineapple industries.			**X**
(2) Growth and development of diversified agriculture throughout the State.			**X**
(3) An agriculture industry that continues to constitute a dynamic and essential component of Hawaii's strategic, economic, and social well-being.			**X**
Policies:			
(1) Establish a clear direction for Hawaii's agriculture through stakeholder commitment and advocacy.			**X**
(2) Encourage agriculture by making best use of natural resources.			**X**
(3) Provide the governor and the legislature with information and options needed for prudent decision making for the development of agriculture.			**X**
(4) Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.			**X**
(5) Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawaii's economy.			**X**
(6) Seek the enactment and retention of federal and state legislation that benefits Hawaii's agricultural industries.			**X**
(7) Strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawaii's producers and consumer markets locally, on the continental United States, and internationally.			**X**
(8) Support research and development activities that provide greater efficiency and economic productivity in agriculture.			**X**
(9) Enhance agricultural growth by providing public incentives and encouraging private initiatives.			**X**
(10) Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.			**X**
(11) Increase the attractiveness and opportunities for an agricultural education and livelihood.			**X**
(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.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
(13) Promote economically competitive activities that increase Hawaii's agricultural self-sufficiency.			**X**
(14) Promote and assist in the establishment of sound financial programs for diversified agriculture.			**X**
(15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.			**X**
(16) Facilitate the transition of agricultural lands in economically nonfeasible agricultural production to economically viable agricultural uses.			**X**

Discussion: 'O'oma Beachside Village will not impact agricultural activities since none currently occur on the Property. As discussed in Section 3.3 (Soils), the Property is rated "E" and unclassified on the LSB classification, and not classified for the ALISH, indicating that the Property is not agriculturally significant. Therefore, the proposed project will not reduce the inventory of agriculturally significant lands.

HRS § 226-8: Objectives and policies for the economy – visitor industry			
Objectives: *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.*			
Policies:			
(1) Support and assist in the promotion of Hawaii's visitor attractions and facilities.			**X**
(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people.			**X**
(3) Improve the quality of existing visitor destination areas.			**X**
(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.			**X**
(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawaii's people.			**X**
(6) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the visitor industry.			**X**
(7) Foster a recognition of the contribution of the visitor industry to Hawaii's economy and the need to perpetuate the aloha spirit.			**X**
(8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawaii's cultures and values.			**X**

Discussion: 'O'oma Beachside Village is not proposed to be a visitor-oriented development; therefore, these objectives and policies are not applicable.

HRS § 226-9: Objective and policies for the economy – federal expenditures			
Objective: *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 Hawaii's economy.*			
Policies:			
(1) Encourage the sustained flow of federal expenditures in Hawaii that generates long-term government civilian employment.			**X**
(2) Promote Hawaii's supportive role in national defense.			**X**
(3) Promote the development of federally supported activities in Hawaii that respect state-wide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawaii's environment.			**X**
(4) Increase opportunities for entry and advancement of Hawaii's people into federal government service.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
(5) Promote federal use of local commodities, services, and facilities available in Hawaii.			**X**
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawaii.			**X**
(7) Pursue the return of federally controlled lands in Hawaii 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.			**X**

Discussion: 'O'oma Beachside Village will not use federal funds or federal lands; therefore, these objective and policies are not applicable.

HRS § 226-10: Objectives and policies for the economy – potential growth activities.			
Objective: *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 Hawaii's economic base.*			
Policies:			
(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.			**X**
(2) Expand Hawaii's capacity to attract and service international programs and activities that generate employment for Hawaii's people.			**X**
(3) Enhance and promote Hawaii's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts.			**X**
(4) Accelerate research and development of new energy- related industries based on wind, solar, ocean, and underground resources and solid waste.			**X**
(5) Promote Hawaii's geographic, environmental, social, and technological advantages to attract new economic activities into the State.			**X**
(6) Provide public incentives and encourage private initiative to attract new industries that best support Hawaii's social, economic, physical, and environmental objectives.			**X**
(7) Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research.			**X**
(8) Develop, promote, and support research and educational and training programs that will enhance Hawaii's ability to attract and develop economic activities of benefit to Hawaii.			**X**
(9) Foster a broader public recognition and understanding of the potential benefits of new, growth-oriented industry in Hawaii.			**X**
(10) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawaii's social, economic, physical, and environmental objectives.			**X**
(11) Increase research and development of businesses and services in the telecommunications and information industries.			**X**

Discussion: 'O'oma Beachside Village is not aimed at increasing the State's potential growth activities; therefore, these objective and policies are not applicable.

HRS § 226-10.5: Objectives and policies for the economy – information industry			
Objective: *Planning for the State's economy with regard to the information industry shall be directed toward the achievement of the objective of positioning Hawaii as the leading dealer in information businesses and services in the Pacific Rim.*			
Policies:			
(1) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawaii to accommodate future growth in the information industry;			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(2) Facilitate the development of new business and service ventures in the information industry which will provide employment opportunities for the people of Hawaii;			**X**
(3) Encourage greater cooperation between the public and private sectors in developing and maintaining a well- designed information industry;			**X**
(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 Hawaii's people;			**X**
(5) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the information industry;			**X**
(6) Foster a recognition of the contribution of the information industry to Hawaii's economy; and			**X**
(7) Assist in the promotion of Hawaii as a broker, creator, and processor of information in the Pacific.			**X**

Discussion: 'O'oma Beachside Village is not related to the information industry; therefore, these objective and policies are not applicable.

HRS § 226-11: Objectives and policies for the physical environment – land-based, shoreline, and marine resources.			
Objectives: *Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources.*			
(1) Prudent use of Hawaii's land-based, shoreline, and marine resources.	**X**		
(2) Effective protection of Hawaii's unique and fragile environmental resources.	**X**		
Policies:			
(1) Exercise an overall conservation ethic in the use of Hawaii's natural resources.	**X**		
(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.	**X**		
(3) Take into account the physical attributes of areas when planning and designing activities and facilities.	**X**		
(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.	**X**		
(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.	**X**		
(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.	**X**		
(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.	**X**		
(8) Pursue compatible relationships among activities, facilities, and natural resources.	**X**		
(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.	**X**		

Discussion: The proposed 'O'oma Beachside Village will not impact any endangered or threatened plant species because none were identified on the Property, as discussed in Section 3.6 (Flora). Areas with dense concentrations of the rare plant, pilo, will be preserved as part of the 75-acre open space area (57-acre coastal preserve and 18-acre shoreline park) located makai of the development.

The proposed 'O'oma Beachside Village is also not expected to impact any ~~rare,~~ endangered or threatened fauna species, as discussed in Section 3.7 (Fauna).

The results of the marine water chemistry analysis, including further evaluation of the potential

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
changes to groundwater composition, indicate that there is little or no potential for alteration of the marine environment or negative impacts to marine waters due to the development of 'O'oma Beachside Village, as discussed in Section 3.5 (Groundwater Resources and Nearshore Marine Environment).			
HRS § 226-12: Objectives and policies for the physical environment – scenic, natural beauty, and historic resources.			
Objective: *Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources.*			
Policies:			
(1) Promote the preservation and restoration of significant natural and historic resources.	**X**		
(2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.	**X**		
(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.	**X**		
(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.	**X**		
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.	**X**		

Discussion: Extensive archaeological surveys were conducted for the 'O'oma Beachside Village property, as discussed in Section 4.1 (Archaeological Resources). ~~Eight~~ Nine sites (SIHP Site 2, 1910, 1911, 1912, 1913, 10155, 18027, and 18773) were identified and approved for preservation by the SHPD. During Rechtman's recent (2006) fieldwork, an additional site (SIHP Site 25932) was discovered.

The ~~two~~ three sites containing burials (SIHP Site 18773, 26678, and 25932), which are significant under both Criterion D and Criterion E, will be preserved pursuant to a burial treatment plan prepared in consultation with recognized descendants and the Hawai'i Island Burial Council. The other preservation sites, considered significant under multiple criteria, will be treated in accordance with a preservation plan to be submitted to and approved by SHPD prior to final subdivision approval.

'O'oma Beachside Village, LLC will comply with all State and County laws and rules regarding the preservation of archaeological and historic sites. Should historic remains, such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work will cease in the immediate vicinity of the find and the State Historic Preservation Division will be contacted for appropriate mitigation, if necessary.

'O'oma Beachside Village will conform to all County ordinances regarding building heights, mass, and setbacks, as discussed in Section 4.8 (Visual Resources). 'O'oma Beachside Village is proposed to be low-rise, using appropriate materials, colors, site design standards, and landscaping for the area. 'O'oma Beachside Village will be in character with surrounding uses, north and south of the Property.

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
HRS § 226-13: Objectives and policies for the physical environment – land, air, and water quality.			
Objectives: *Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:*			
(1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.	**X**		
(2) Greater public awareness and appreciation of Hawaii's environmental resources.	**X**		
Policies:			
(1) Foster educational activities that promote a better understanding of Hawaii's limited environmental resources.	**X**		
(2) Promote the proper management of Hawaii's land and water resources.	**X**		
(3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.	**X**		
(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people.	**X**		
(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.	**X**		
(6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.	**X**		
(7) Encourage urban developments in close proximity to existing services and facilities.	**X**		
(8) Foster recognition of the importance and value of the land, air, and water resources to Hawaii's people, their cultures and visitors.	**X**		

Discussion: Energy conservation measures will be implemented where possible in the design of 'O'oma Beachside Village, as discussed in Section 4.9.5 (Electrical System).

Creation of 'O'oma Beachside Village may result in short and long-term impacts on air quality either directly or indirectly as a consequence of construction and use. However, it is anticipated that no Federal or State air quality standards will be violated as a result of the 'O'oma Beachside Village. Section 4.7 (Air Quality) provides a full discussion.

Section 3.4 (Natural Hazards) of this EIS provides discussion of potential natural hazards, such as flooding, tsunami inundation, hurricanes, volcanic eruptions, and earthquakes. The development of 'O'oma Beachside Village, however, will not exacerbate any natural hazard conditions.

To mitigate potential impacts to life and property, caused by a natural disaster, no habitable structures will be built within the 100-year floodplain (Zone A) or the tsunami inundation zone, and all structures will be constructed in compliance with requirements of the UBC, appropriate to the Zone 4 Seismic Probability Rating and any appropriate County, State, or Federal standards.

'O'oma Beachside Village is an infill development, located between existing Urban uses. 'O'oma Beachside Village is in the *County of Hawai'i General Plan*'s planned path of urbanization and near existing and growing centers of employment.

HRS § 226-14: Objective and policies for facility systems – in general
Objective: *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.*

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
Policies:			
(1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.			**X**
(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.			**X**
(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.			**X**
(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.			**X**
Discussion: 'O'oma Beachside Village does not involve planning for the State's facility systems; therefore, these objective and policies are not applicable.			
HRS § 226-15: Objectives and policies for facility systems – solid and liquid wastes.			
Objectives: *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.	**X**		
(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.	**X**		
Policies:			
(1) Encourage the adequate development of sewerage facilities that complement planned growth.	**X**		
(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.	**X**		
(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.	**X**		
Discussion: 'O'oma Beachside Village, LLC will develop an on-site one mgd private wastewater treatment plant (WWTP) currently sited in an area in the center of the Property just along the north boundary. The WWTP for 'O'oma Beachside Village will be designed to produce an R-1 quality effluent for non-potable reuse throughout the community. Design and construction will be in accordance with State Department of Health and County of Hawai'i standards and treated water would be reused for irrigation. Section 4.9.2 (Wastewater System) provides a full discussion.			
HRS § 226-16: Objectives and policies for facility systems – water.			
Objective: *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.*			
Policies:			
(1) Coordinate development of land use activities with existing and potential water supply.	**X**		
(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.	**X**		
(3) Reclaim and encourage the productive use of runoff water and wastewater discharges.	**X**		
(4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.	**X**		
(5) Support water supply services to areas experiencing critical water problems.	**X**		
(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.	**X**		

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
Discussion: 'O'oma Beachside Village, LLC's preferred alternative for providing both potable and non-potable water to 'O'oma Beachside Village is an on-site desalination plant, as discussed in Section 4.9.1 (Water System). Due to the availability of R-1 effluent from the private wastewater treatment plant to be installed with 'O'oma Beachside Village as described in Section 4.9.2 (Wastewater System), non-potable recycled water will be used for general irrigation of the landscaping features within the community. Potable water demand will be limited to that used for consumption, general household/commercial use, and irrigation of landscaping within residential areas.			
HRS § 226-17: Objectives and policies for facility systems – transportation.			
Objective: *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) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.	**X**		
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.			**X**
Policies:			
(1) Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter;	**X**		
(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;			**X**
(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;			**X**
(4) Provide for improved accessibility to shipping, docking, and storage facilities;	**X**		
(5) Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;			**X**
(6) Encourage transportation systems that serve to accommodate present and future development needs of communities;	**X**		
(7) Encourage a variety of carriers to offer increased opportunities and advantages to interisland movement of people and goods;			**X**
(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs;			**X**
(9) Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;			**X**
(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii's natural environment;	**X**		
(11) Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;	**X**		
(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			**X**
(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.			**X**
Discussion: 'O'oma Beachside Village envisions a "live-work-play" model for the project that will help to mitigate the traffic impact on Queen Ka'ahumanu Highway and the surrounding areas, as discussed in Section 4.4 (Roadways and Traffic).			

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
'O'oma Beachside Village's homes will be near employment centers allowing workers alternative transportation options to get to work, such as walking and bicycling. Public transportation will also be more feasible since 'O'oma Beachside Village is along the planned transit corridor. The neighborhood design of 'O'oma Beachside Village will serve to minimize trips onto Queen Ka'ahumanu Highway as many essential services, such as stores, restaurants, parks, and a school, will be within walking and biking distance to residents. 'O'oma Beachside Village is currently working with both the County of Hawai'i and the State Department of Transportation to develop solutions that will help to further mitigate traffic impacts of this development.			
HRS § 226-18: Objectives and policies for facility systems – energy.			
Objectives: *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;			**X**
(2) Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased;	**X**		
(3) Greater energy security in the face of threats to Hawaii's energy supplies and systems; and			**X**
(4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use.	**X**		
Policies:			
(1) Support research and development as well as promote the use of renewable energy sources;			**X**
(2) Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth;			**X**
(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;			**X**
(4) Promote all cost-effective conservation of power and fuel supplies through measures including:			**X**
(A) Development of cost-effective demand-side management programs;			**X**
(B) Education; and			**X**
(C) Adoption of energy-efficient practices and technologies;	**X**		
(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;			**X**
(6) Support research, development, and demonstration of energy efficiency, load management, and other demand-side management programs, practices, and technologies;	**X**		
(7) Promote alternate fuels and energy efficiency by encouraging diversification of transportation modes and infrastructure;	**X**		
(8) Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications; and	**X**		
(9) Support actions that reduce, avoid, or sequester Hawaii's greenhouse gas emissions through agriculture and forestry initiatives.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
Discussion: Energy conservation measures will be implemented where possible in the design of 'O'oma Beachside Village, as discussed in Section 4.9.5 (Electrical System).			
HRS § 226-18.5: Objectives and policies for facility systems—telecommunications.			
Objective: *Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people.*			
Policies:			
(1) Facilitate research and development of telecommunications systems and resources;			**X**
(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning;			**X**
(3) Promote efficient management and use of existing telecommunications systems and services; and			**X**
(4) Facilitate the development of education and training of telecommunications personnel.			**X**
Discussion: Coordination with the various communication companies will be undertaken, as discussed in Sections 4.9.6 (Telephone) and 4.9.7 (Cable). 'O'oma Beachside Village, however, is not involved with the planning of the State's telecommunications facility systems. Therefore, these objective and policies are not applicable.			
HRS § 226-19: Objectives and policies for socio-cultural advancement – housing.			
Objectives: *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 Hawaii'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 Hawaii's population.	**X**		
(2) The orderly development of residential areas sensitive to community needs and other land uses.	**X**		
(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawaii's people.	**X**		
Policies:			
(1) Effectively accommodate the housing needs of Hawaii's people.	**X**		
(2) Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households.	**X**		
(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.	**X**		
(4) Promote appropriate improvement, rehabilitation, and maintenance of existing housing units and residential areas.			**X**
(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.	**X**		
(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.	**X**		
(7) Foster a variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods that reflect the culture and values of the community.	**X**		
(8) Promote research and development of methods to reduce the cost of housing construction in Hawaii.	**X**		

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
Discussion: As discussed in Section 4.10.3 (Housing), 'O'oma will implement objectives and policies for socio-cultural advancement in housing by: • Creating a community that fosters a sense of place, respects the land, and is sustainable. • Providing affordable and moderately-priced housing for sale and rent to the working families of Hawai'i, specifically those that work in West Hawai'i. • Providing homes near employment centers, thereby increasing quality of life through decreased commuting. • Providing a variety of housing options (mixed-income) integrated into a complete community rather than an affordable housing "project."			
HRS § 226-20: Objectives and policies for socio-cultural advancement – health			
Objectives: *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.			**X**
(2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities.			**X**
Policies:			
(1) Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.			**X**
(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.			**X**
(3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.			**X**
(4) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.			**X**
(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.			**X**
(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.			**X**
Discussion: 'O'oma Beachside Village does not plan for the State's socio-cultural advancement with regard to health; therefore, these objectives and policies are no applicable.			
HRS § 226-21: Objectives and policies for socio-cultural advancement – education.			
Objectives: *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.*			
Policies:			
(1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.	**X**		
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.	**X**		
(3) Provide appropriate educational opportunities for groups with special needs.			**X**
(4) Promote educational programs which enhance understanding of Hawaii's cultural heritage.	**X**		
(5) Provide higher educational opportunities that enable Hawaii's people to adapt to changing employment demands.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
(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.			**X**
(7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.			**X**
(8) Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.			**X**
(9) Support research programs and activities that enhance the education programs of the State.	**X**		

Discussion: 'O'oma Beachside Village has designated a 3-acre site, adjacent to the Community Park, for a school. It is expected that a charter school could occupy the site. 'O'oma Beachside Village, LLC 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. Terms of the contributions will be agreed upon in writing by 'O'oma Beachside Village, LLC and the DOE prior to obtaining county rezoning.

HRS § 226-22: Objective and policies for socio-cultural advancement – social services			
Objective: *Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being.*			
Policies:			
(1) Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.			**X**
(2) Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society.			**X**
(3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawaii's communities.			**X**
(4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.			**X**
(5) Support public and private efforts to prevent domestic abuse and child molestation, and assist victims of abuse and neglect.			**X**
(6) Promote programs which assist people in need of family planning services to enable them to meet their needs.			**X**

Discussion: 'O'oma Beachside Village does not plan for the State's socio-cultural advancement with regard to social services; therefore, these objectives and policies are not applicable.

HRS § 226-23: Objectives and policies for socio-cultural advancement – leisure.			
Objective: *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.*			
Policies:			
(1) Foster and preserve Hawaii's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.	**X**		
(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.	**X**		

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.	**X**		
(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.	**X**		
(5) Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources.	**X**		
(6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.	**X**		
(7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawaii's people.			**X**
(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.			**X**
(9) Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawaii's population to participate in the creative arts.			**X**
(10) Assure adequate access to significant natural and cultural resources in public ownership.			**X**

Discussion: 'O'oma Beachside Village will enhance recreational resources in the area by providing approximately 103 acres of parks and open space, As discussed in Section 4.11.5 (Recreational Facilities), there will be approximately 75 acres of parks and open space near the shoreline consisting of approximately 57 acres of open space, an 18-acre shoreline park (will connect to The Shores at Kohanaiki shoreline park), and a community pavilion. There will also be an approximately 7-acre active community park and 5 acres of various smaller neighborhood parks. Queen Ka'ahumanu Highway and the historic Māmalahoa Trail will be maintained with landscape buffers (approximately 16 acres).

The open space trails would be able to connect to the Ala Kahakai Trail in the future, if so desired. A multi-modal trail system/bike pathways and roadways will loop throughout 'O'oma Beachside Village, providing residents with easy access to the beach and the ability to bike, walk, hike or run throughout the community. 'O'oma Beachside Village, LLC will coordinate with the Department of Parks and Recreation to ensure that community park requirements are satisfied.

HRS § 226-24: Objective and policies for socio-cultural advancement – individual rights and personal well-being.			
Objective: *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.*			
Policies:			
(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.			**X**
(2) Uphold and protect the national and state constitutional rights of every individual.			**X**
(3) Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.			**X**
(4) Ensure equal opportunities for individual participation in society.			**X**

Discussion: 'O'oma Beachside Village does not plan for the State's socio-cultural advancement with regard to individual rights and personal well-being; therefore, these objective and policies are not applicable.

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
HRS § 226-25: Objectives and policies for socio-cultural advancement – culture.			
Objective: *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 Hawaii's people.*			
Policies:			
(1) Foster increased knowledge and understanding of Hawaii's ethnic and cultural heritages and the history of Hawaii.	**X**		
(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawaii's people and which are sensitive and responsive to family and community needs.	**X**		
(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawaii.			**X**
(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaii's people and visitors.	**X**		

Discussion: The cultural impact assessment has been prepared in accordance with the Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impact, and is included as Appendix F and discussed in Section 4.2 of this EIS.

While there were no specific ongoing traditional cultural practices identified relative to the land within the Property, there are potential cultural impacts, both specific and nonspecific, related to coastal and near-shore subsistence and recreational activities, primarily among beachgoers, fisherman, and surfers. As these activities could be characterized as traditional and customary practices, the locations of these activities could thus be considered traditional cultural properties and as such would be significant under Criterion E. As 'O'oma Beachside Village will in no way inhibit coastal access, and as nearly all buildings and other uses are significantly set back (greater than 1,000 feet) from the shoreline, it is envisioned that the protection and preservation of the 'O'oma shoreline will be enhanced; and that no traditional and customary practices will be impacted.

HRS § 226-26: Objectives and policies for socio-cultural advancement – public safety.			
Objectives: *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.			**X**
(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.			**X**
(3) Promotion of a sense of community responsibility for the welfare and safety of Hawaii's people.			**X**
Policies related to public safety:			
(1) Ensure that public safety programs are effective and responsive to community needs.			**X**
(2) Encourage increased community awareness and participation in public safety programs.			**X**
Policies related to criminal justice:			
(1) Support criminal justice programs aimed at preventing and curtailing criminal activities.			**X**
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.			**X**
(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.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
Policies related to emergency management:			
(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.			**X**
(2) Enhance the coordination between emergency management programs throughout the State.			**X**
Discussion: 'O'oma Beachside Village does not include State public safety programs; therefore, these objectives and policies are not applicable.			
HRS § 226-27: Objectives and policies for socio-cultural advancement – government.			
Objectives: *Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:*			
(1) Efficient, effective, and responsive government services at all levels in the State.			**X**
(2) Fiscal integrity, responsibility, and efficiency in the state government and county governments.			**X**
Policies:			
(1) Provide for necessary public goods and services not assumed by the private sector.			**X**
(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.			**X**
(3) Minimize the size of government to that necessary to be effective.			**X**
(4) Stimulate the responsibility in citizens to productively participate in government for a better Hawaii.			**X**
(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.			**X**
(6) Provide for a balanced fiscal budget.			**X**
(7) Improve the fiscal budgeting and management system of the State.			**X**
(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.			**X**
Discussion: Planning the State's socio-cultural advancement with regard to government is not relevant to 'O'oma Beachside Village; therefore, these objectives and policies are not applicable.			

PART III. PRIORITY GUIDELINES

The purpose of this part of the Hawai'i State Plan is to establish overall priority guidelines to address areas of statewide concern. The Hawai'i State Plan notes that the State shall strive to improve the quality of life for Hawai'i's present and future population through the pursuit of desirable courses of action in five major areas of statewide concern which merit priority attention: 1) economic development; 2) population growth and land resource management; 3) affordable housing; 4) crime and criminal justice; and 5) quality education (§226-102). The priority guidelines applicable to 'O'oma Beachside Village are discussed below:

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
HRS § 226-101: Purpose. *The purpose of this part is to establish overall priority guidelines to address areas of statewide concern.*			
HRS § 226-102: Overall direction. *The State shall strive to improve the quality of life for Hawaii's present and future 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.*			
HRS § 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.			**X**
(A) Encourage investments which:	**X**		
(i) Reflect long term commitments to the State;	**X**		
(ii) Rely on economic linkages within the local economy;	**X**		
(iii) Diversify the economy;	**X**		
(iv) Reinvest in the local economy;	**X**		
(v) Are sensitive to community needs and priorities; and	**X**		
(vi) Demonstrate a commitment to provide management opportunities to Hawaii residents.			**X**
(2) Encourage the expansion of technological research to assist industry development and support the development and commercialization of technological advancements.			**X**
(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.			**X**
(4) Seek to ensure that state business tax and labor laws and administrative policies are equitable, rational, and predictable.			**X**
(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.			**X**
(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.			**X**
(7) Continue to seek legislation to protect Hawaii from transportation interruptions between Hawaii and the continental United States.			**X**
(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:			**X**
(A) An industry that can take advantage of Hawaii's unique location and available physical and human resources.			**X**
(B) A clean industry that would have minimal adverse effects on Hawaii's environment.			**X**
(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.			**X**
(D) An industry that would provide reasonable income and steady employment.			**X**
(9) Support and encourage, through educational and technical assistance programs and other means, expanded opportunities for employee ownership and participation in Hawaii business.			**X**
(10) Enhance the quality of Hawaii's labor force and develop and maintain career opportunities for Hawaii's people through the following actions:			**X**
(A) Expand vocational training in diversified agriculture, aquaculture, information industry, and other areas where growth is desired and feasible.			**X**
(B) Encourage more effective career counseling and guidance in high schools and post-secondary institutions to inform students of present and future career opportunities.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(C) Allocate educational resources to career areas where high employment is expected and where growth of new industries is desired.			**X**
(D) Promote career opportunities in all industries for Hawaii's people by encouraging firms doing business in the State to hire residents.			**X**
(E) Promote greater public and private sector cooperation in determining industrial training needs and in developing relevant curricula and on- the-job training opportunities.			**X**
(F) Provide retraining programs and other support services to assist entry of displaced workers into alternative employment.			**X**
(b) Priority guidelines to promote the economic health and quality of the visitor industry:			
(1) Promote visitor satisfaction by fostering an environment which enhances the Aloha Spirit and minimizes inconveniences to Hawaii's residents and visitors.			**X**
(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.			**X**
(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.			**X**
(4) Encourage visitor industry practices and activities which respect, preserve, and enhance Hawaii's significant natural, scenic, historic, and cultural resources.			**X**
(5) Develop and maintain career opportunities in the visitor industry for Hawaii's people, with emphasis on managerial positions.			**X**
(6) Support and coordinate tourism promotion abroad to enhance Hawaii's share of existing and potential visitor markets.			**X**
(7) Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.			**X**
(8) Support law enforcement activities that provide a safer environment for both visitors and residents alike.			**X**
(9) Coordinate visitor industry activities and promotions to business visitors through the state network of advanced data communication techniques.			**X**
(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.			**X**
(2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawaii.			**X**
(3) Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.			**X**
(d) Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:			
(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.			**X**
(2) Assist in providing adequate, reasonably priced water for agricultural activities.			**X**
(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.			**X**
(4) Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.			**X**
(5) Encourage and assist with the development of a waterborne and airborne freight and cargo system capable of meeting the needs of Hawaii's agricultural community.			**X**
(6) Seek favorable freight rates for Hawaii's agricultural products from interisland and overseas transportation operators.			**X**
(7) Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities.			**X**
(8) Continue the development of agricultural parks and other programs to assist small independent farmers in securing agricultural lands and loans.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(9) Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.			**X**
(10) Support the continuation of land currently in use for diversified agriculture.			**X**
(e) Priority guidelines for water use and development:			
(1) Maintain and improve water conservation programs to reduce the overall water consumption rate.	**X**		
(2) Encourage the improvement of irrigation technology and promote the use of nonpotable water for agricultural and landscaping purposes.	**X**		
(3) Increase the support for research and development of economically feasible alternative water sources.	**X**		
(4) Explore alternative funding sources and approaches to support future water development programs and water system improvements.	**X**		
(f) Priority guidelines for energy use and development:			
(1) Encourage the development, demonstration, and commercialization of renewable energy sources.			**X**
(2) Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.			**X**
(3) Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.			**X**
(4) Encourage the development and use of energy conserving and cost-efficient transportation systems.			**X**
(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 Hawaii.			**X**
(2) Encourage the development of services such as financial data processing, a products and services exchange, foreign language translations, telemarketing, teleconferencing, a twenty-four-hour international stock exchange, international banking, and a Pacific Rim management center.			**X**
(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.			**X**
(4) Encourage the development or expansion of educational and training opportunities for residents in the information and telecommunications fields.			**X**
(5) Encourage research activities, including legal research in the information and telecommunications fields.			**X**
(6) Support promotional activities to market Hawaii's information industry services.			**X**

Discussion: 'O'oma Beachside Village will impact the State and County economies by: 1) generating development activity, which supports expenditures for goods and services; 2) creating and supporting jobs and business enterprises in its ongoing operations; and 3) attracting new and returning Island residents who would make new expenditures. 'O'oma is expected to support long-term impacts, including additional consumer expenditures, employment opportunities, personal income and government revenue enhancement. Further discussion is provided in Section 4.10.4 (Economy).

'O'oma Beachside Village, LLC's preferred alternative for providing both potable and non-potable water to 'O'oma Beachside Village is an on-site desalination plant, as discussed in Section 4.9.1 (Water System).

Due to the availability of R-1 effluent from the private wastewater treatment plant to be

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
installed with O'oma Beachside Village as described in Section 4.9.2 (Wastewater), non-potable recycled water will be used for general irrigation of the landscaping features within the community. Potable water demand will be limited to that used for consumption, general household/commercial use, and irrigation of landscaping within residential areas.			
HRS § 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 Hawaii's people.	**X**		
(2) Manage a growth rate for Hawaii's economy that will parallel future employment needs for Hawaii's people.	**X**		
(3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.	**X**		
(4) Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.			**X**
(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.			**X**
(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.			**X**
(7) Support the development of high technology parks on the neighbor islands.			**X**
(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.			**X**
(2) Make available marginal or nonessential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.			**X**
(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.			**X**
(4) Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.			**X**
(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.			**X**
(6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.			**X**
(7) Pursue rehabilitation of appropriate urban areas.			**X**
(8) Support the redevelopment of Kakaako into a viable residential, industrial, and commercial community.			**X**
(9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.			**X**
(10) Identify critical environmental areas in Hawaii 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.			**X**
(11) Identify all areas where priority should be given to preserving rural character and lifestyle.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
(12) Utilize Hawaii's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.			**X**
(13) Protect and enhance Hawaii's shoreline, open spaces, and scenic resources.			**X**

Discussion: 'O'oma Beachside Village responds to the demand of a growing population for the North Kona region, as well as the demand for homes in West Hawai'i for existing full-time residents, as discussed in Section 4.10.1 (Population). The proposed project could affect population through in-migration of additional State and County residents.

HRS § 226-105: Crime and criminal justice.			
Priority guidelines in the area of crime and criminal justice:			
(1) Support law enforcement activities and other criminal justice efforts that are directed to provide a safer environment.			**X**
(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.			**X**
(3) Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.			**X**
(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.			**X**
(5) Provide a range of appropriate sanctions for juvenile offenders, including community-based programs and other alternative sanctions.			**X**
(6) Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.			**X**

Discussion: The priority guidelines for crime and criminal justice are not applicable to 'O'oma Beachside Village.

HRS § 226-106: Affordable housing.			
Priority guidelines for the provision of affordable housing:			
(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.			**X**
(2) Encourage the use of alternative construction and development methods as a means of reducing production costs.	**X**		
(3) Improve information and analysis relative to land availability and suitability for housing.			**X**
(4) Create incentives for development which would increase home ownership and rental opportunities for Hawaii's low- and moderate-income households, gap-group households, and residents with special needs.	**X**		
(5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawaii's people for the purchase of initial owner- occupied housing.			**X**
(6) Encourage public and private sector cooperation in the development of rental housing alternatives.	**X**		
(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.			**X**
(8) Give higher priority to the provision of quality housing that is affordable for Hawaii's residents and less priority to development of housing intended primarily for individuals outside of Hawaii.	**X**		

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
Discussion: As discussed in Section 4.10.3 (Housing), 'O'oma will implement objectives and policies for socio-cultural advancement in housing by: • Creating a community that fosters a sense of place, respects the land, and is sustainable. • Providing affordable and moderately-priced housing for sale and rent to the working families of Hawai'i, specifically those that work in West Hawai'i. • Providing homes near employment centers, thereby increasing quality of life through decreased commuting. • Providing a variety of housing options (mixed-income) integrated into a complete community rather than an affordable housing "project."			
HRS § 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;			**X**
(2) Continue emphasis on general education "core" requirements to provide common background to students and essential support to other university programs;			**X**
(3) Initiate efforts to improve the quality of education by improving the capabilities of the education work force;			**X**
(4) Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision-making responsibilities;			**X**
(5) Increase and improve the use of information technology in education by the availability of telecommunications equipment for:			**X**
(A) The electronic exchange of information;			**X**
(B) Statewide electronic mail; and			**X**
(C) Access to the Internet.			**X**
Encourage programs that increase the public's awareness and understanding of the impact of information technologies on our lives;			**X**
(1) Pursue the establishment of Hawaii's public and private universities and colleges as research and training centers of the Pacific;			**X**
(2) Develop resources and programs for early childhood education;			**X**
(3) Explore alternatives for funding and delivery of educational services to improve the overall quality of education; and			**X**
(4) Strengthen and expand educational programs and services for students with special needs.			**X**
Discussion: 'O'oma Beachside Village includes a three-acre school site. However, the development will not directly establish education programs. Therefore, these priority guidelines are not applicable.			

5.1.5 State Functional Plans

The Hawai'i State Plan directs State agencies to prepare functional plans for their respective program areas. There are 14 state functional plans that serve as the primary implementing vehicle for the goals, objectives, and policies of the Hawai'i State Plan. The functional plans applicable to 'O'oma Beachside Village, along with each plan's applicable objectives, policies, and actions, are discussed below.

HAWAI'I STATE FUNCTIONAL PLANS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)		S	N/S	N/A
AGRICULTURE FUNCTIONAL PLAN				
Objective A:	*Achievement of increased agricultural production and growth through cultural and management practices.*			X
Objective B:	*Achievement of an orderly agricultural marketing system through product promotion and industry organization.*			X
Objective C:	*Achievement of increased consumption of and demand for Hawaii's agricultural products through consumer education and product quality.*			X
Objective D:	*Achievement of optimal contribution by agriculture to the State's economy.*			X
Objective E:	*Achievement of adequate capital, and knowledge of its proper management, for agricultural development.*			X
Objective F:	*Achievement of increased agricultural production and growth through pest and disease controls.*			X
Objective G:	*Achievement of effective protection and improved quality of Hawaii's land, water, and air.*			X
Objective H:	*Achievement of productive agricultural use of lands most suitable and needed for agriculture.*			X
Objective I:	*Achievement of efficient and equitable provision of adequate water for agricultural use.*			X
Objective J:	*Achievement of maximum degree of public understanding and support of agriculture in Hawaii.*			X
Objective K:	*Achievement of adequate supply of properly trained labor for agricultural needs.*			X
Objective L:	*Achievement of adequate transportation services and facilities to meet agricultural needs.*			X
Objective M:	*Achievement of adequate support services and infrastructure to meet agricultural needs.*			X
Discussion: 'O'oma Beachside Village will not impact agricultural activities since none currently occur on the Property. As discussed in Section 3.3 (Soils), the Property is rated "E" and unclassified on the LSB classification, and not classified for the ALISH, indicating that the Property is not agriculturally significant. Therefore, the proposed project will not reduce the inventory of agriculturally significant lands, and this State Functional Plan is not applicable.				
CONSERVATION LANDS FUNCTIONAL PLAN				
Objective IA:	*Establishment of data bases for inventories of existing lands and resources.*			X
Objective IB:	*Establishment of criteria for management of land and natural resources.*			X
Objective IIA:	*Establishment of plans for natural resources and land management.*			X
Objective IIB:	*Protection of fragile or rare natural resources.*	X		
Objective IIC:	*Enhancement of natural resources.*	X		
Objective IID:	*Appropriate development of natural resources.*	X		
Objective IIE:	*Promotion and marketing of appropriate natural resources designated for commercial development.*			X
Objective IIF:	*Increase enforcement of land and natural resource use laws and regulations.*			X
Objective IIIA:	*Develop and implement conservation education programs for the general public and visitors.*			X
Objective IIIB:	*Increase access to land and natural resource data by the public and increase cooperation between agencies by making access to land and natural resource information more efficient.*			X
Discussion: Areas within 'O'oma Beachside Village will not be developed, such as the 75 acres along the shoreline to be designated as a shoreline park and coastal preserve.				

HAWAI'I STATE FUNCTIONAL PLANS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)		S	N/S	N/A
The proposed 'O'oma Beachside Village will not impact any endangered or threatened plant species because none were identified on the Property, as discussed in Section 3.6 (Flora). Areas with dense concentrations of the rare plant, pilo, will be preserved as part of the 57-acre coastal preserve located makai of the development. The proposed 'O'oma Beachside Village is also not expected to impact any endangered or threatened fauna species, as discussed in Section 3.7 (Fauna). The results of the marine water chemistry analysis, including further evaluation of the potential changes to groundwater composition, indicate that there is little or no potential for alteration of the marine environment or negative impacts to marine waters due to the development of 'O'oma Beachside Village, as discussed in Section 3.5 (Groundwater Resources and Nearshore Marine Environment).				
EDUCATION FUNCTIONAL PLAN				
Objective A(1):	***Academic Excellence.*** *Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.*			X
Objective A(2):	***Basic Skills.*** *Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning. Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement.*			X
Objective A(3):	***Education Workforce.*** *Initiate efforts to improve the quality of education by improving the capabilities of the education workforce.*			X
Objective A(4):	***Services and Facilities.*** *Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.*	X		
Objective B(1):	***Alternatives for Funding and Delivery.*** *Explore alternatives for funding and delivery of educational services to improve the overall quality of education.*			X
Objective B(2):	***Autonomy and flexibility.*** *Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision-making responsibilities.*			X
Objective B(3):	***Increased Use of Technology.*** *Increase and improve the use information technology in education and encourage programs which increase the public's awareness and understanding of the impact of information technologies on our lives.*			X
Objective B(4):	***Personal Development.*** *Support education programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.*			X
Objective B(5):	***Students with Special Needs.*** *Provide appropriate educational opportunities for groups with special needs.*			X
Objective C(1):	***Early Childhood Education.*** *Develop resources and programs for early childhood education.*			X
Objective C(2):	***Hawaii's Cultural Heritage.*** *Promote educational programs which enhance understanding of Hawaii's cultural heritage.*			X
Objective C(3):	***Research Programs and [Communication] Activities.*** *Support research programs and activities that enhance the education programs of the State.*			X
Discussion: 'O'oma Beachside Village has designated a three-acre site, adjacent to the Community Park, for a school. It is expected that a charter school could occupy the site. 'O'oma Beachside Village, LLC will contribute to the development, funding, and/or				

HAWAI'I STATE FUNCTIONAL PLANS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)		S	N/S	N/A
construction of school facilities, on a fair-share basis, as determined by and to the satisfaction of the DOE. Terms of the contributions will be agreed upon in writing by 'O'oma Beachside Village, LLC and the DOE prior to obtaining County rezoning.				
EMPLOYMENT FUNCTIONAL PLAN				
Objective A:	*Improve the qualifications of entry-level workers and their transition to employment.*			X
Objective B:	*Develop and deliver education, training and related services to ensure and maintain a quality and competitive workforce.*			X
Objective C:	*Improve labor exchange.*			X
Objective D:	*Improve the quality of life for workers and families.*	X		
Objective E:	*Improve planning of economic development, employment and training activities*			X
Discussion: 'O'oma Beachside Village will comply with Objective D of the Employment Functional Plan, as discussed in Section 4.10.3 (Housing), by: • Creating a community that fosters a sense of place, respects the land, and is sustainable. • Providing affordable and moderately-priced housing for sale and rent to the working families of Hawai'i, specifically those that work in West Hawai'i. • Providing homes near employment centers, thereby increasing quality of life through decreased commuting. • Providing a variety of housing options (mixed-income) integrated into a complete community rather than an affordable housing "project."				
ENERGY FUNCTIONAL PLAN				
Objective A:	*Moderate the growth in energy demand through conservation and energy efficiency.*	X		
Objective B:	*Displace oil and fossil fuels through alternate and renewable energy resources.*	X		
Objective C:	*Promote energy education and legislation.*			X
Objective D:	*Support and develop an integrated approach to energy development and management.*	X		
Objective E:	*Ensure State's abilities to implement energy emergency actions immediately in event of fuel supply disruptions. Ensure essential public services are maintained and provisions are made to alleviate economic and personal hardships which may arise.*			X
Discussion: Energy conservation measures will be implemented where possible in the design of 'O'oma Beachside Village, as discussed in Section 4.9.5 (Electrical System).				
HEALTH FUNCTIONAL PLAN				
Objective 1:	*Health promotion and disease prevention. Reduction in the incidence, morbidity and mortality associated with preventable and controllable conditions.*			X
Objective 2:	*Prevention and control of communicable diseases. Reduction in the incidence, morbidity, and mortality associated with infectious and communicable diseases.*			X
Objective 3:	*Health needs of special populations with impaired access to health care. Increased availability and accessibility of health services for groups with impaired access to health care programs.*			X

HAWAI'I STATE FUNCTIONAL PLANS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)		**S**	**N/S**	**N/A**
Objective 4:	*Community hospitals system. Development of a community hospital system which is innovative, responsive and supplies high quality care to the constituencies it serves.*			X
Objective 5:	*Environmental programs to protect and enhance the environment. Continued development of new environmental protection and health services programs to protect, monitor, and enhance the quality of life in Hawaii.*			X
Objective 6:	*DOH leadership. To improve the Department of Health's ability to meet the public health need of the State of Hawaii in the most appropriate, beneficial and economical way possible.*			X
Discussion: 'O'oma Beachside Village does not include the creation of medical or health programs; therefore, the Health Functional Plan is not applicable.				
HIGHER EDUCATION FUNCTIONAL PLAN				
Objective A:	*A number and variety of postsecondary education institutions sufficient to provide the diverse range of programs required to satisfy individual and societal needs and interests.*			X
Objective B:	*The highest level of quality, commensurate with its mission and objectives, of each educational, research, and public service program offered in Hawaii by an institution of higher education.*			X
Objective C:	*Provide appropriate educational opportunities for all who are willing and able to benefit from postsecondary education.*			X
Objective D:	*Provide financing for postsecondary education programs sufficient to ensure adequate diversity, high quality, and wide accessibility.*			X
Objective E:	*Increase program effectiveness and efficiency through better coordination of educational resources.*			X
Discussion: 'O'oma Beachside Village does not include the creation of higher education programs; therefore, the Higher Education Functional Plan is not applicable.				
HISTORIC PRESERVATION FUNCTIONAL PLAN				
Objective A:	*Identification of historic properties.*	X		
Objective B:	*Protection of historic properties.*	X		
Objective C:	*Management and treatment of historic properties.*	X		
Objective D:	*Provision of adequate facilities to preserve historic resources.*	X		
Objective E:	*The establishment of programs to collect and conserve historic records, artifacts, and oral histories and to document and perpetuate traditional arts, skills, and culture.*	X		
Objective F:	*Provision of better access to historic information.*			X
Objective G:	*Enhancement of skills and knowledge needed to preserve historical resources.*			X
Discussion: Extensive archaeological surveys were conducted for the 'O'oma Beachside Village property, as discussed in Section 4.1 (Archaeological Resources). ~~Eight~~ Nine sites (SIHP Site 2, 1910, 1911, 1912, 1913, 10155, 18027, ~~and~~ 18773) were identified and approved for preservation by the SHPD. During Rechtman's recent (2006) fieldwork, an additional site (SIHP Site 25932) was discovered. The ~~two~~ three sites containing burials (SIHP Site 18773, 26678, and 25932), which are significant under both Criterion D and Criterion E, will be preserved pursuant to a burial treatment plan prepared in consultation with recognized descendants and the Hawai'i Island Burial Council. The other preservation sites, considered significant under multiple criteria, will be treated in accordance with a preservation plan to be submitted to and approved by SHPD				

HAWAI'I STATE FUNCTIONAL PLANS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)		S	N/S	N/A
prior to final subdivision approval. 'O'oma Beachside Village, LLC will comply with all State and County laws and rules regarding the preservation of archaeological and historic sites. Should historic remains, such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work will cease in the immediate vicinity of the find and the State Historic Preservation Division will be contacted for appropriate mitigation, if necessary.				
HOUSING FUNCTIONAL PLAN				
Objective A:	*Homeownership for at least sixty percent, or roughly 248,500 households by the year 2000.*			X
Objective B:	*Sufficient amount of affordable rental housing units by the year 2000 so as to increase the State's rental vacancy rate to at least 3%, with priority given to increasing the supply of units affordable to very low and lower income households.*			X
Objective C:	*Increased development of rental housing units for the elderly and other special need groups to afford them an equal access to housing.*			X
Objective D:	*Preservation of existing public and private housing stock.*			X
Objective E:	*Acquire and designate land suitable for housing development in sufficient amount to locate the deficit in housing units by the year 2000.*			X
Objective F:	*Maintain a statewide housing data system for use by public and private agencies engaged in the provision of housing.*			X
Discussion: Although 'O'oma Beachside Village does not directly relate to the Housing Functional Plan's objectives, 'O'oma Beachside Village will implement objectives and policies for socio-cultural advancement in housing by: • Creating a community that fosters a sense of place, respects the land, and is sustainable. • Providing affordable and moderately-priced housing for sale and rent to the working families of Hawai'i, specifically those that work in West Hawai'i. • Providing homes near employment centers, thereby increasing quality of life through decreased commuting. • Providing a variety of housing options (mixed-income) integrated into a complete community rather than an affordable housing "project."				
HUMAN SERVICES FUNCTIONAL PLAN				
Objective A:	*To sustain and improve current elder abuse and neglect services.*			X
Objective B:	*To increase cost-effective, high quality home and community based services.*			X
Objective C:	*To increase home-based services to keep children in their homes and to increase placement resources for those children who must be temporarily or permanently removed from their homes, due to abuse or neglect.*			X
Objective D:	*To address factors that contribute to child abuse and other forms of family violence.*			X
Objective E:	*To provide affordable, accessible, and quality child care.*			X
Objective G:	*To provide AFDC recipients with a viable opportunity to become independent of the welfare system.*			X
Objective H:	*To facilitate client access to human services.*			X
Objective I:	*To eliminate organizational barriers which limit client access to human services.*			X

HAWAI'I STATE FUNCTIONAL PLANS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)		S	N/S	N/A
Discussion: 'O'oma Beachside Village does not include the creation of human service programs; therefore, the Human Services Functional Plan is not applicable.				
RECREATION FUNCTIONAL PLAN				
Objective I.A:	*Address the problem of saturation of the capacity of beach parks and nearshore waters.*			X
Objective I.B:	*Reduce the incidence of ocean recreation accidents.*			X
Objective I.C:	*Resolve conflicts between different activities at heavily used ocean recreation areas.*			X
Objective I.D:	*Provide adequate boating facilities. Balance the demand for boating facilities against the need to protect the marine environment from potential adverse impacts.*			X
Objective II.A:	*Plan, develop, and promote recreational activities and facilities in mauka and other areas to provide a wide range of alternatives.*	X		
Objective II.B:	*Meet special recreation needs of the elderly, the disabled, woman, single-parent families, immigrants, and other groups.*			X
Objective II.C:	*Improve and expand the provision of recreation facilities in urban areas and local communities.*	X		
Objective III.A:	*Prevent the loss of access to shoreline and upland recreation areas due to new developments.*	X		
Objective III.B:	*Resolve the problem of landowner liability that seriously hampers public access over private lands.*			X
Objective III.C:	*Increase access to State Forest Reserve lands over federal property, leased State lands, and other government lands.*			X
Objective III.D:	*Acquire, develop, and manage additional public accessways.*			X
Objective IV.A:	*Promote a conservation ethic in the use of Hawaii's recreational resources.*	X		
Objective IV.B:	*Prevent degradation of the marine environment.*	X		
Objective IV.C:	*Improve the State's enforcement capabilities.*			X
Objective IV.D:	*Mitigate adverse impacts of tour helicopters on the quality of recreational experiences in wilderness areas.*			X
Objective V.A:	*Properly maintain existing parks and recreation areas.*	X		
Objective V.B:	*Promote interagency coordination and cooperation to facilitate sharing of resources, joint development efforts, clarification of responsibilities and jurisdictions, and improvements in enforcement capabilities.*			X
Objective V.C:	*Assure adequate support for priority outdoor recreation programs and facilities.*			X
Objective VI.A:	*Increase recreational access and opportunities in Hawaii's wetlands.*			X
Objective VI.B:	*Develop an adequate information base to assist the County planning departments and other regulatory agencies in make decisions regarding wetlands.*			X
Objective VI.C:	*Assure the protection of the most valuable wetlands in the state.*			X
Discussion: 'O'oma Beachside Village will enhance recreational resources in the area by providing approximately 103 acres of parks and open space, as discussed in Section 4.11.5 (Recreational Facilities). Near the shore, there will be approximately 75 acres of parks and open space consisting of approximately 57 acres of open space, an 18-acre shoreline park (will connect to The Shores at Kohanaiki shoreline park), and a community pavilion. There will also be an approximately 7-acre active community park and 5 acres of various smaller neighborhood parks. Queen Ka'ahumanu Highway and the historic Māmalahoa Trail will be maintained with landscape buffers (approximately 16 acres).				

HAWAI'I STATE FUNCTIONAL PLANS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)		S	N/S	N/A
TOURISM FUNCTIONAL PLAN				
Objective I.A:	*Development, implementation and maintenance of policies and actions which support the steady and balanced growth of the visitor industry.*			X
Objective II.A:	*Development and maintenance of well-designed visitor facilities and related developments which are sensitive to the environment, sensitive to neighboring communities and activities, and adequately serviced by infrastructure and support services.*			X
Objective III.A:	*Enhancement of respect and regard for the fragile resources which comprise Hawaii's natural and cultural environment. Increased preservation and maintenance efforts.*			X
Objective IV.A:	*Support of Hawaii's diverse range of lifestyles and natural environment.*			X
Objective IV.B:	*Achievement of mutual appreciation among residents, visitors, and the visitor industry.*			X
Objective V.A:	*Development of a productive workforce to maintain a high quality visitor industry.*			X
Objective V.B:	*Enhancement of career and employment opportunities in the visitor industry.*			X
Objective VI.A:	*Maintenance of a high customer awareness of Hawaii as a visitor destination in specific desired market segments.*			X

Discussion: 'O'oma Beachside Village is aimed at residents, not the visitor industry; therefore, the Tourism Functional Plan is not applicable.

TRANSPORTATION FUNCTIONAL PLAN				
Objective I.A:	*Expansion of the transportation system.*			X
Objective I.B:	*Reduction of travel demand through zoning and decentralization initiatives.*			X
Objective I.C:	*Management of existing transportation systems through a program of transportation systems management (TSM).*			X
Objective I.D:	*Identification and reservation of lands and rights-of-way required for future transportation improvements.*			X
Objective I.E:	*Planning and designing State highways to enhance inter-regional mobility.*			X
Objective I.F:	*Improving and enhancing transportation safety.*			X
Objective I.G:	*Improved transportation maintenance programs.*			X
Objective I.H:	*Ensure that transportation facilities are accessible to people with disabilities.*			X
Objective II.A:	*Development of a transportation infrastructure that supports economic development initiatives.*	X		
Objective III.B:	*Expansion of revenue bases for transportation improvements.*			X
Objective IV.A:	*Providing educational programs.*			X

Discussion: Although 'O'oma Beachside Village does not directly relate to the Transportation Functional Plan's objectives, as discussed in Section 4.4 (Roadways and Traffic), 'O'oma Beachside Village envisions a "live-work-play" model for the project that will help to mitigate the traffic impact on Queen Ka'ahumanu Highway and the surrounding areas.

'O'oma Beachside Village's homes will be near employment centers allowing workers alternative transportation options to get to work, such as walking an bicycling. Public transportation will also be more feasible since 'O'oma Beachside Village is along the planned

HAWAI'I STATE FUNCTIONAL PLANS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)		S	N/S	N/A
transit corridor. The neighborhood design of 'O'oma Beachside Village will serve to minimize trips onto Queen Ka'ahumanu Highway as many essential services, such as stores, restaurants, parks, and a school, will be within walking and biking distance to residents. 'O'oma Beachside Village is currently working with both the County of Hawai'i and the State Department of Transportation to develop solutions that will help to further mitigate traffic impacts of this development.				
WATER RESOURCES DEVELOPMENT FUNCTIONAL PLAN				
Objective A:	*Enunciate State water policy and improve management framework.*			X
Objective B:	*Maintain the long-term availability of freshwater supplies, giving consideration to the accommodation of important environmental values.*			X
Objective C:	*Improve management of floodplains.*			X
Objective D:	*Assure adequate municipal water supplies for planned urban growth.*			X
Objective E:	*Assure the availability of adequate water for agriculture.*			X
Objective F:	*Encourage and coordinate with other water programs the development of self-supplied industrial water and the production of water-based energy.*	X		
Objective G:	*Provide for the protection and enhancement of Hawaii's freshwater and estuarine environment.*	X		
Objective H:	*Improve State grant and loan procedures for water program and projects.*			X
Objective I:	*Pursue water resources data collection and research to meet changing needs.*	X		
Discussion: 'O'oma Beachside Village, LLC's preferred alternative for providing both potable and non-potable water to 'O'oma Beachside Village is an on-site desalination plant, as discussed in Section 4.9.1 (Water System). Due to the availability of R-1 effluent from the private wastewater treatment plant to be installed with 'O'oma Beachside Village as described in Section 4.9.2 (Wastewater), non-potable recycled water will be used for general irrigation of the landscaping features within the community. Potable water demand will be limited to that used for consumption, general household/commercial use, and irrigation of landscaping within residential areas.				

5.2 COUNTY OF HAWAI`I

Discussion of County-specific land use plans and ordinances pertaining to the proposed 'O'oma Beachside Village include the *County of Hawai'i General Plan*, the *Keāhole to Kailua Development Plan*, the draft North and South Kona Community Development Plan, and the Hawai'i County Code. Specific County objectives and policies applicable to 'O'oma Beachside Village are discussed below.

5.2.1 County of Hawai'i General Plan

The *County of Hawai'i General Plan* was adopted in February 2005 and is a policy document for the long-range comprehensive development of the island of Hawai'i. The plan provides direction for the future growth of the County and offers policy statements that embody the expressed goals for present and future generations. The *County of Hawai'i General Plan* provides the legal basis for all subdivision, zoning, and related ordinances and for the initiation and authorization of all public improvements and projects.

A well-balanced land use pattern capable of meeting the future needs of the County is an essential part of the *County of Hawai'i General Plan*. There are no universal standards for determining the amount of land needed in the future for each land use or activity located within an area. The land use pattern is a broad, flexible design intended to guide the direction and quality of future developments in a coordinated and rational manner.

The methodology used to develop the land use pattern reflects estimates of future population based on economic and employment evaluations, existing land uses and zoned areas, determination of community facility needs, and transportation demands for the entire island. The topography and other physical features of each area were also analyzed, and other factors, particularly economic, social, and physical characteristics, were noted. The future improvement and development objectives are directed toward making urban and rural centers more efficient, livable, and safe.

Within the rapidly growing districts of South Kohala and North and South Kona, the Land Use Pattern Allocation Guide maps focus future urban development around Waimea and Waikoloa Village, Kawaihae, and between Keahole and Keauhou. The location of urban and rural uses should be evaluated from the standpoint of how each use services existing and future land uses of the surrounding area. The direction and form of growth in accord with future demand will be influenced by many factors.

According to the *County of Hawai'i General Plan*, a portion of Parcel 4 is designated as "Open Space" and a portion is "Urban Expansion" (Figure 7 ~~11~~). The shoreline park, coastal (archaeological) preserve, greenway trails, and landscape buffers proposed on Parcel 4 are consistent and compatible with the "Open Space" designation. Parcel 22 is designated as "Urban Expansion," with a narrow strip of "Open Space" bordering the east end of the parcel along Queen Ka'ahumanu Highway. The State ROW is designated "Urban Expansion." "Urban Expansion" allows for a mix of high density, medium density, low density, industrial, industrial-commercial, and/or open designations in areas where new settlements may be desirable.

The land uses proposed in the 'O'oma Beachside Village Conceptual Master Plan (Figure 1) are consistent with the "Urban Expansion" designation and "Open Space" designation along the highway. Goals, objectives, and policies from the *County of Hawai'i General Plan* relevant to the proposed 'O'oma Beachside Village are discussed below.

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
ECONOMIC			
Goals:			
(a) Provide residents with opportunities to improve their quality of life through economic development that enhances the County's natural and social environments.	X		
(b) Economic development and improvement shall be in balance with the physical, social, and cultural environments of the island of Hawaii.	X		
(c) Strive for diversity and stability in the economic system.	X		
(d) Provide an economic environment that allows new, expanded, or improved economic opportunities that are compatible with the County's cultural, natural and social environment.	X		
(e) Strive for an economic climate that provides its residents an opportunity for choice of occupation.	X		
(f) Strive for diversification of the economy by strengthening existing industries and attracting new endeavors.	X		
(g) Strive for full employment.	X		
(h) Promote and develop the island of Hawaii 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.	X		
Policies:			
(a) 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.			X
(b) Encourage the expansion of the research and development industry by working with and supporting the University of Hawaii at Hilo and West Hawaii, the Natural Energy Laboratory at Hawaii Authority and other agencies' programs that support sustainable economic development in the County of Hawaii.	X		
(c) Encourage the development of a visitor industry that is in harmony with the social, physical, and economic goals of the residents of the County.			X
(d) Require a study of the significant cultural, social and physical impacts of large developments prior to approval.	X		
(e) Encourage the sustainable development of the fishing industry, various forms of aquaculture, and other fresh and sea water-based activities.			X
(f) Support all levels of educational, employment and training opportunities and institutions.			X
(g) Capital improvements program shall improve the quality of existing commercial and industrial areas.	X		
(h) 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.	X		
(i) Continue to encourage the research, development and implementation of advanced technologies and processes.	X		
(j) Support the development of high technology industries.	X		
(k) Continue to encourage development and utilization of by-products from alternate energy conversion projects.	X		
(l) Identify and encourage primary industries that are consistent with the social, physical, and economic goals of the residents of the County.	X		
(m) Encourage active liaison with the private sector with respect to the County's requirements for establishing businesses on the island.	X		
(n) Encourage the development of the retirement industry.			X
(o) Promote a distinctive identify for the island of Hawaii to enable government, businesses and travel industries to promote the County of Hawaii as an entity unique within the State of Hawaii.			X
(p) Identify the needs of the business community and take actions that are necessary to improve the business climate.	X		

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(q) Support research and development that would lead to the removal of marketing restrictions on Hawaiian fruits and other perishables.			X
(r) 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.			X
(s) Assist the further development of agriculture through the protection of important agricultural lands.			X
(t) Assist in the promotion of the agriculture industry whose products are recognized as being produced on the island of Hawaii.			X
(u) Encourage the establishment of open farmers markets to allow local agricultural producers to market their products.			X
(v) Assist in cooperative marketing and distribution endeavors to expand opportunities for local agricultural products for export as well as to the local market.			X
(w) Encourage the further development of the overseas capacity of Hilo International Airport for the exportation of agricultural crops.			X
(x) Encourage the health/wellness industry.			X
(y) Encourage new industries that provide favorable benefit-cost relationships to the people of the County. Benefit-cost relationships include more than fiscal considerations.			X

Discussion: 'O'oma Beachside Village will impact the State and County economies by: 1) generating development activity, which supports expenditures for goods and services; 2) creating and supporting jobs and business enterprises in its ongoing operations; and 3) attracting new and returning Island residents who would make new expenditures. 'O'oma is expected to support long-term impacts, including additional consumer expenditures, employment opportunities, personal income and government revenue enhancement. Further discussion is provided in Section 4.10.4 (Economy).

ENERGY			
Goals:			
(a) Strive towards energy self-sufficiency.	X		
(b) Establish the Big Island as a demonstration community for the development and use of natural energy resources.	X		
Policies:			
(a) Encourage the development of alternate energy resources.	X		
(b) Encourage the development and use of agricultural products and by-products as sources of alternate fuel.			X
(c) Encourage the expansion of energy research industry.	X		
(d) Strive to educate the public on new energy technologies and foster attitudes and activities conducive to energy conservation.	X		
(e) Ensure a proper balance between the development of alternative energy resources and the preservation of environmental fitness and ecologically significant areas.	X		
(f) Strive to assure a sufficient supply of energy to support present and future demands.	X		
(g) Provide incentives that will encourage the use of new energy sources and promote energy conservation.	X		
(h) Seek funding from both government and private sources for research and development of alternative energy resources.			X
(i) Coordinate energy research and development efforts of both the government and private sectors.	X		
(j) Encourage the continuation of studies concerning the development of power that can be distributed at lower costs to consumers.			X
(k) Strive to diversify the energy supply and minimize the environmental impacts associated with energy usage.	X		
(l) Continue to encourage the development of geothermal resources to meet the energy needs of the County of Hawaii.			X

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
(m) Encourage the use of solar water heating through the continuation of state tax credit programs, through the Building Code, and in County construction.			X
(n) Encourage energy-saving design in the construction of buildings.	X		
(o) Support net-metering and other incentives for independent power producers.			X

Discussion: Energy conservation measures will be implemented where possible in the design of 'O'oma Beachside Village, as discussed in Section 4.9.5 (Electrical System).

ENVIRONMENTAL QUALITY			
Goals:			
(a) 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.	X		
(b) Maintain and, if feasible, improve the existing environmental quality of the island.	X		
(c) Control pollution.	X		
Policies:			
(a) Take positive action to further maintain the quality of the environment.	X		
(b) 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.			X
(c) Advise the public of environmental conditions and research undertaken on the island's environment.	X		
(d) Encourage the concept of recycling agricultural, industrial, and municipal waste material.			X
(e) Encourage the State to establish air and water quality monitoring stations in areas of existing and potential urban growth.			X
(f) Encourage the State to continue aircraft noise abatement strategies at Hilo International Airport and the Kona International Airport at Keahole.			X
(g) Participate in watershed management projects to improve stream and coastal water quality and encourage local communities to develop such projects.	X		
(h) Work with the appropriate agencies to adopt appropriate measures and provide incentives to control point and nonpoint sources of pollution.	X		
(i) Support programs to prevent harmful alien species from becoming established.			X
(j) 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.			X
(k) Require implementation of the management measures contained in Hawaii's Coastal Nonpoint Pollution Control Program as a condition of land use permitting.			X
(l) Review the County grading and grubbing ordinances to ensure that they adequately address potential erosion and runoff problems.			X

Discussion: The 'O'oma Beachside Village project will enhance public shoreline access by providing an 18-acre shoreline park with related facilities, which include a community pavilion, comfort station, and free parking.

The results of the marine water chemistry analysis, including further evaluation of the potential changes to groundwater composition, indicate that there is little or no potential for alteration of the marine environment or negative impacts to marine waters due to the development of 'O'oma Beachside Village, as discussed in Section 3.5 (Groundwater Resources and Nearshore Marine Environment).

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
FLOODING AND OTHER NATURAL HAZARDS			
Goals:			
(a) Protect human life.	X		
(b) Prevent damage to man-made improvements.	X		
(c) Control pollution.	X		
(d) Prevent damage from inundation.	X		
(e) Reduce surface water and sediment runoff.	X		
(f) Maximize soil and water conservation.	X		
Policies:			
(a) 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.			X
(b) Review land use policy as it relates to flood plain, high surf, and tsunami hazard areas.			X
(c) Update and improve the Flood Insurance Rate Maps and other flood maps in compliance with the National Flood Insurance Program (NFIP) as needed.			X
(d) Any development within the Federal Emergency Management Agency designated flood plain must be in compliance with Chapter 27.			X
(e) Promote and provide incentives for participation in the Soil and Water Conservation Districts' conservation programs for developments on agricultural and conservation lands.			X
(f) The "Drainage Master Plan for the County of Hawaii" shall be reviewed and updated to incorporate new studies and reflect newly identified priorities.			X
(g) 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.	X		
(h) Develop a comprehensive program for the coordinated construction of a drainage network along a single drainage system.			X
(i) Explore new methods of funding for the provision of adequate drainage systems and regulating potential flood inundation areas.			X
(j) The County and the private sector shall be responsible for maintaining and improving existing drainage systems and constructing new drainage facilities.	X		
(k) 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.	X		
(l) Continue to promote public education programs on tsunami, hurricane, storm surge, and flood hazards.			X
(m) Encourage grassed shoulder and swale roadway design where climate and grade are conducive.	X		
(n) Develop drainage master plans from a watershed perspective that considers nonstructural 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.			X
(o) Encourage and provide incentives for agricultural operators to participate in Soil and Water Conservation District Programs.			X
(p) 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.			X
(q) Consider natural hazards in all land use planning and permitting.	X		
(r) Discourage intensive development in areas of high volcanic hazard.	X		

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Discussion: Section 3.4 (Natural Hazards) of this EIS provides discussion of potential natural hazards, such as flooding, tsunami inundation, hurricanes, volcanic eruptions, and earthquakes. The development of 'O'oma Beachside Village, however, will not exacerbate any natural hazard conditions. To mitigate potential impacts to life and property, caused by a natural disaster, no habitable structures will be built within the 100-year floodplain (Zone A) or the tsunami inundation zone, and all structures will be constructed in compliance with requirements of the UBC, appropriate to the Zone 4 Seismic Probability Rating and appropriate County, State, or Federal standards.			
HISTORIC SITES			
Goals:			
(a) Protect, restore, and enhance the sites, buildings, and objects of significant historical and cultural importance to Hawaii.	X		
(b) Appropriate access to significant historic sites, buildings, and objects of public interest should be made available.	X		
(c) Enhance the understanding of man's place on the landscape by understanding the system of ahupua'a.			X
Policies:			
(a) Agencies and organizations, either public or private, pursuing knowledge about historic sites should keep the public apprised of projects.			X
(b) Amend appropriate ordinances to incorporate the stewardship and protection of historic sites, buildings and objects.			X
(c) 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.	X		
(d) Public access to significant historic sites and objects shall be acquired, where appropriate.	X		
(e) 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.			X
(f) Encourage the restoration of significant sites on private lands.	X		
(g) Collect and distribute historic sites information of public interest and keep an inventory of sites.	X		
(h) Aid in the development of a program of public education concerning historic sites.	X		
(i) Signs explaining historic sites, buildings and objects shall be in keeping with the character of the area or the cultural aspects of the feature.	X		
(j) Develop a continuing program to evaluate the significance of historic sites.			X
(k) Develop policies to protect Hawaiian rights as identified under judicial decisions.			X
(l) Support the establishment of Hawaiian Heritage Corridors.			X
(m) 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.			X
(n) Consider requiring Cultural Assessments for certain developments as part of the rezoning process.	X		
(o) Recognize the importance of certain natural features in Hawaiian culture by incorporating the concept of "cultural landscapes" in land use planning.	X		
Discussion: Extensive archaeological surveys were conducted for the 'O'oma Beachside Village property, as discussed in Section 4.1 (Archaeological Resources). ~~Eight~~ Nine sites			

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
(SIHP Site 2, 1910, 1911, 1912, 1913, 10155, 18027, ~~and~~ 18773) were identified and approved for preservation by the SHPD. During Rechtman's recent (2006) fieldwork, an additional site (SIHP Site 25932) was discovered. The ~~two~~ three sites containing burials (SIHP Site 18773, 26678, and 25932), which are significant under both Criterion D and Criterion E, will be preserved pursuant to a burial treatment plan prepared in consultation with recognized descendants and the Hawai'i Island Burial Council. The other preservation sites, considered significant under multiple criteria, will be treated in accordance with a preservation plan to be submitted to and approved by SHPD prior to final subdivision approval. 'O'oma Beachside Village, LLC will comply with all State and County laws and rules regarding the preservation of archaeological and historic sites. Should historic remains, such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work will cease in the immediate vicinity of the find and the State Historic Preservation Division will be contacted for appropriate mitigation, if necessary.			
NATURAL BEAUTY			
Goals:			
(a) Protect, preserve and enhance the quality of areas endowed with natural beauty, including the quality of coastal scenic resources.	X		
(b) Protect scenic vistas and view planes from becoming obstructed.	X		
(c) Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.	X		
Policies:			
(a) Increase public pedestrian access opportunities to scenic places and vistas.	X		
(b) Develop and establish view plane regulations to preserve and enhance views of scenic or prominent landscapes from specific locations, and coastal aesthetic values.			X
(c) Maintain a continuing program to identify, acquire and develop viewing sites on the island.			X
(d) Access easement to public or private lands that have natural or scenic value shall be provided or acquired for the public.			X
(e) Develop standard criteria for natural and scenic beauty as part of design plans.	X		
(f) Consider structural setback from major thoroughfares and highways and establish development and design guidelines to protect important viewplanes.	X		
(g) Maintain a continuing program to identify exceptional trees or tree masses.			X
(h) Protect the views of areas endowed with natural beauty by carefully considering the effects of proposed construction during all land use reviews.	X		
(i) Do not allow incompatible construction in areas of natural beauty.	X		
Discussion: The 'O'oma Beachside Village project will enhance public shoreline access by providing an 18-acre shoreline park with related facilities, which include a community pavilion, comfort station, and free parking. 'O'oma Beachside Village will conform to all County ordinances regarding building heights, mass, and setbacks, as discussed in Section 4.8 (Visual Resources). 'O'oma Beachside Village is proposed to be low-rise, using appropriate materials, colors, site design standards, and landscaping for the area. 'O'oma Beachside Village will be in character with surrounding uses, north and south of the Property.			

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
NATURAL RESOURCES AND SHORELINE			
Goals:			
(a) Protect and conserve the natural resources from undue exploitation, encroachment and damage.	X		
(b) Provide opportunities for recreational, economic, and educational needs without despoiling or endangering natural resources.	X		
(c) Protect and promote the prudent use of Hawaii's unique, fragile, and significant environmental and natural resources.	X		
(d) Protect rare or endangered species and habitats native to Hawaii.	X		
(e) Protect and effectively manage Hawaii's open space, watersheds, shoreline, and natural areas.	X		
(f) 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.	X		
Policies:			
(a) Require users of natural resources to conduct their activities in a manner that avoids or minimizes adverse effects on the environment.	X		
(b) Encourage a program of collection and dissemination of basic data concerning natural resources.			X
(c) 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.	X		
(d) Protect the shoreline from the encroachment of man-made improvements and structures.	X		
(e) Coordinate programs to protect natural resources with other government agencies.			X
(f) Investigate methods of beach replenishment and sand erosion control.			X
(g) Promote sound management and development of Hawaii's land and marine resources for potential economic benefit.	X		
(h) 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.	X		
(i) Encourage an overall conservation ethic in the use of Hawaii's resources by protecting, preserving, and conserving the critical and significant natural resources of the County of Hawaii.	X		
(j) Encourage the protection of watersheds, forest, brush, and grassland from destructive agents and uses.			X
(k) 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.			X
(l) Work with the appropriate State, Federal agencies, and private landowners to establish a program to manage and protect identified watersheds.			X
(m) Encourage appropriate State agencies to review and designate forest and watershed areas into the conservation district during State land use boundary comprehensive reviews.			X
(n) 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.			X
(o) Encourage the continued identification and inclusion of unique wildlife habitat areas of native Hawaiian flora and fauna within the Natural Area Reserve System.			X
(p) Encourage the use of native plants for screening and landscaping.	X		
(q) Develop policies by which native Hawaiian gathering rights will be protected as identified under judicial decisions.			X
(r) Ensure public access is provided to the shoreline, public trails and hunting areas, including free public parking where appropriate.	X		
(s) Establish a system of pedestrian access trails to places of scenic, historic, cultural,	X		

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
natural, or recreational values.			
(t) Preserve and protect significant lava tube caves.			X
(u) Ensure that activities authorized or funded by the County do not damage important natural resources.			X
(v) 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.	X		
(w) Implement Council Resolution Nos. 330-96 and 58-97 in land use approvals.			X
(x) Create incentives for landowners to retain and re-establish forest cover in upland watershed areas with emphasis on native forest species.			X

Discussion: Any structures in 'O'oma Beachside Village will be set back more than 1,000 feet from the shoreline. The only exception will be public shoreline park facilities, which will be approximately 330 feet away from the shoreline, but still outside of the shoreline setback area.

The proposed 'O'oma Beachside Village will not impact any endangered or threatened plant species because none were identified on the Property, as discussed in Section 3.6 (Flora). Areas with dense concentrations of the rare plant, pilo, will be preserved as part of the 57-acre coastal preserve located makai of the development.

The proposed 'O'oma Beachside Village is also not expected to impact any ~~rare,~~ endangered or threatened fauna species, as discussed in Section 3.7 (Fauna).

The results of the marine water chemistry analysis, including further evaluation of the potential changes to groundwater composition, indicate that there is little or no potential for alteration of the marine environment or negative impacts to marine waters due to the development of 'O'oma Beachside Village, as discussed in Section 3.5 (Groundwater Resources and Nearshore Marine Environment).

The 'O'oma Beachside Village project will enhance public shoreline access by providing an 18-acre shoreline park with related facilities, which include a community pavilion, comfort station, and free parking.

HOUSING			
Goals:			
(a) Attain safe, sanitary, and livable housing for the residents of the County of Hawaii.	X		
(b) Attain a diversity of socio-economic housing mix throughout the different parts of the County.	X		
(c) Maintain a housing supply that allows a variety of choices.	X		
(d) Create viable communities with affordable housing and suitable living environments.	X		
(e) Improve and maintain the quality and affordability of the existing housing inventory.	X		
(f) 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.	X		
(g) Ensure that housing is available to all persons regardless of age, sex, marital status, ethnic background, and income.	X		
(h) Make affordable housing available in reasonable proximity to employment centers.	X		

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(i) Encourage and expand home ownership opportunities for residents.	X		
Policies:			
(a) Encourage a volume of construction and rehabilitation of housing sufficient to meet growth needs and correct existing deficiencies.	X		
(b) Encourage the construction of specially designed facilities or communities for elderly persons needing institutional care and small home care units for active elderly persons.			X
(c) 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.			X
(d) Support the construction of housing for minimum wage and agricultural workers.			X
(e) Continue to review codes and ordinances for overly stringent restrictions that may impose unnecessary hardship and adopt amendments if warranted.			X
(f) Continue to study and implement appropriate measures to curb property speculative practices that result in increased housing costs.			X
(g) 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.			X
(h) Formulate a program for housing that identifies specific mechanisms to implement the housing goals.			X
(i) Initialize housing powers and programs to accomplish housing goals and seek out new programs and resources to address the housing needs of the residents.			X
(j) 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.			X
(k) Increase rental opportunities and choices in terms of quality, cost, amenity, style and size of housing, especially for low and moderate income households.	X		
(l) Support programs that improve, maintain, and rehabilitate the existing housing inventory to maintain the viability of existing communities.			X
(m) Accommodate the housing requirements of special need groups including the elderly, handicapped, homeless and those residents in rural areas.			X
(n) Investigate, develop, and promote the creation of new innovative and timely financing techniques and programs to reduce the cost of housing.			X
(o) Encourage the use of suitable public lands for housing purposes in fee or lease.			X
(p) Encourage the construction of homes for lease or lease with option to purchase.			X
(q) 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.			X
(r) Adopt appropriate ordinances and rules as necessary to implement its housing programs and activities.			X
(s) Utilize financing techniques that reduce the cost of housing, including the issuance of tax-exempt bonds and the implementation of interim financing programs.			X
(t) Ensure that adequate infrastructure is available in appropriate locations to support the timely development of affordable housing.	X		
(u) Investigate the use of the County's taxing powers as a possible means to increase the supply of affordable housing.			X
(v) Work with, encourage and support private sector efforts in the provision of affordable housing.			X
(w) Encourage the development of affordable retirement communities.			X
(x) 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.	X		
(y) Aid and encourage the development of a wide variety of housing to achieve a diversity of socio-economic housing mix.	X		

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Discussion: As discussed in Section 4.10.2 (Housing), 'O'oma will implement objectives and policies for socio-cultural advancement in housing by: • Creating a community that fosters a sense of place, respects the land, and is sustainable. • Providing affordable and moderately-priced housing for sale and rent to the working families of Hawai'i, specifically those that work in West Hawai'i. • Providing homes near employment centers, thereby increasing quality of life through decreased commuting. • Providing a variety of housing options (mixed-income) integrated into a complete community rather than an affordable housing "project."			
PUBLIC FACILITIES			
Goal:			
(a) 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.			X
Policies:			
(a) Continue to seek ways of improving public service through the coordination of service and maximizing the use of personnel and facilities.			X
(b) Coordinate with appropriate State agencies for the provision of public facilities to serve the needs of the community.			X
(c) Develop short and long-range capital improvement programs and operating budgets for public facilities and services.			X
(d) Develop and adopt an Impact Fees Ordinance.			X
(e) Capital Improvement and Operating budgets shall reflect the goals and policies of the County General Plan.			X
(f) Require a six-year, long-term, capital improvements budget by County Departments and agencies that shall be reviewed for consistency with the General Plan.			X
Discussion: 'O'oma Beachside Village is will not use public funds or create public facilities; therefore, this section of *County of Hawai'i General Plan* is not applicable.			
EDUCATION			
Policies:			
(a) Encourage continuous joint pre-planning of schools with the Department of Education and the University of Hawaii 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.			X
(b) Encourage combining schoolyards with county parks and allow school facilities for afterschool use by the community for recreational, cultural, and other compatible uses.	X		
(c) 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.			X
(d) Encourage implementation of the Department of Education's 'Educational Specifications and Standards for Facilities.'			X
(e) Encourage the Hawaii State Library System to seek alternate sites for public libraries located on the campuses of public schools.			X

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
Discussion: 'O'oma Beachside Village has designated a three-acre site, adjacent to the Community Park, for a school. It is expected that a charter school could occupy the site. 'O'oma Beachside Village, LLC 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. Terms of the contributions will be agreed upon in writing by 'O'oma Beachside Village, LLC and the DOE prior to obtaining County rezoning.			
PROTECTIVE SERVICES			
Policies:			
(a) Development of police and fire facilities should entail joint use structures whenever feasible.			X
(b) The establishment of a fire/police facility shall consider site size and locations that permit quick and efficient vehicular access.			X
(c) Development of volunteer fire facilities with proper planning to be replaced or to co-exist with full time Fire/EMS personnel.			X
(d) Police headquarters shall be near the geographic center of the service area and near concentrations of commercial and industrial use.			X
(e) Stations in outlying districts shall be based on the population to be served and response time rather than on geographic district.			X
(f) Correctional facilities should emphasize rehabilitation. Establish additional rehabilitation and counseling centers, including drug and behavioral treatment facilities in secure settings, when necessary.			X
(g) Encourage the further development and expansion of community policing programs and neighborhood and farm watch programs in urban, rural and agricultural communities.			X
(h) The County of Hawaii Emergency Operations Center shall be improved to meet the requirements set forth by federal and State regulations.			X
(i) Maintain an appropriate number and type of emergency helicopters, including appropriate aero medical capabilities.			X
(j) Mitigate hazards through the preparation of disaster assessment reports and appropriate follow-up on the assessment recommendations.			X
(k) Educate the public regarding disaster preparedness and response, especially proper responses for sudden impact hazards.			X
(l) Encourage the State to evaluate the disaster shelters' ability to withstand various natural disasters.			X
(m) Consider the proximity to fire stations in approving any rezoning to permit urban development.			X
(n) 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.			X
Discussion: 'O'oma Beachside Village does not plan for the expansion of protective services; therefore, these objectives and policies are not applicable. As discussed in Section 4.11.2 (Police) and 4.11.3 (Fire), it is not expected 'O'oma Beachside Village would require an extension of the existing service area for emergency services. There may be a need for additional personnel; however, additional revenues will be generated through property taxes, which will support the County and State and their respective departments. 'O'oma Beachside Village, LLC will coordinate with the Police and Fire Departments to address service capabilities of their operations, address their concerns, and develop appropriate mitigation measures, if necessary.			

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
HEALTH AND SANITATION			
Policies:			
(a) 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.			X
(b) Develop and implement a cemeteries master plan for the siting of future cemeteries.			X
(c) Appropriately designed and cost-effective solid waste transfer station sites shall be located in areas of convenience and easy access to the public.			X
(d) Encourage the State to continue operation of the rural hospitals.			X
(e) Encourage the establishment or expansion of community health centers and rural health clinics.			X
(f) Continue to encourage programs such as recycling to reduce the flow of refuse deposited in landfills.	X		
(g) Investigate the possibility of developing new landfill sites on the island.			X
(h) Encourage the full development and implementation of a green waste recycling program.	X		

Discussion: After construction, recycling will be encouraged, as discussed in Section 4.9.4 (Solid Waste). Recycling provisions, such as collection systems and space for bins, ~~may~~ will be incorporated in to 'O'oma Beachside Village. In addition, 'O'oma Beachside Village will work with the County regarding feasible alternatives for residential curbside collection, including source-separated recyclables.

PUBLIC UTILITIES			
Goals:			
(a) Ensure that properly regulated, adequate, efficient and dependable public and private utility services are available to users.	X		
(b) Maximize efficiency and economy in the provision of public utility services.			X
(c) Design public utility facilities to fit into their surroundings or concealed from public view.			X
Policies:			
(a) Public utility facilities shall be designed to complement adjacent land uses and shall be operated to minimize pollution or disturbance.			X
(b) Provide utilities and service facilities that minimize total cost to the public and effectively service the needs of the community.	X		
(c) Utility facilities shall be designed to minimize conflict with the natural environment and natural resources.	X		
(d) Improvement of existing utility services shall be encouraged to meet the needs of users.			X
(e) Encourage the clustering of developments in order to reduce the cost of providing utilities.	X		
(f) Develop short and long range capital improvement programs and plans for public utilities within its jurisdiction that are consistent with the General Plan.			X
(g) Water, sewerage, electricity, gas, and telecommunication services are treated individually in this section to clarify the factors that comprise the public utilities element.			X

Discussion: 'O'oma Beachside Village is an infill development, located between existing Urban uses. The site is located near existing utilities and infrastructure, as discussed in Section 4.9 (Infrastructure and Utilities).

WATER			
Policies:			
(a) Water system improvements shall correlate with the County's desired land use development pattern.	X		
(b) All water systems shall be designed and built to Department of Water Supply standards.	X		

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(c) Improve and replace inadequate systems.			X
(d) Water sources shall be adequately protected to prevent depletion and contamination from natural and man-made occurrences or events.	X		
(e) 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.	X		
(f) 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.	X		
(g) The fire prevention systems shall be coordinated with water distribution systems in order to ensure water supplies for fire protection purposes.	X		
(h) Develop and adopt standards for individual water catchment units.	X		
(i) 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.			X
(j) 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.			X
(k) Promote the use of ground water sources to meet State Department of Health water quality standards.	X		
(l) Continue to participate in the United States Geological Survey's exploratory well drilling program.			X
(m) Seek State and Federal funds to assist in financing projects to bring the County into compliance with the Safe Drinking Water Act.			X
(n) 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.	X		
(o) Expand programs to provide for agricultural irrigation water.			X

Discussion: 'O'oma Beachside Village, LLC's preferred alternative for providing both potable and non-potable water to 'O'oma Beachside Village is an (on-site or off-site) desalination plant, as discussed in Section 4.9.1 (Water System).

Due to the availability of R-1 effluent from the private wastewater treatment plant to be installed with 'O'oma Beachside Village as described in Section 4.9.2 (Wastewater), non-potable recycled water will be used for general irrigation of the landscaping features within the community. Potable water demand will be limited to that used for consumption, general household/commercial use, and irrigation of landscaping within residential areas.

TELECOMMUNICATIONS			
Policies:			
(a) Encourage underground telephone lines where they are economically and technically feasible.	X		
(b) Work with the telecommunications industry to increase the availability of emergency telephones throughout the island.			X
(c) Develop standards for the construction of wireless telecommunication facilities.			X
(d) Work closely with the telephone company to provide all users with efficient service.	X		

Discussion: Coordination with the various communication companies will be undertaken, as discussed in Section 4.9.6 (Telephone).

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
ELECTRICITY			
Policies:			
(a) Power distribution shall be placed underground when and where practical. Encourage developers of new urban areas to place utilities underground.	X		
(b) 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.			X
(c) Continue to advise the electrical utility companies on the future revisions of their comprehensive Integrated Resource Plans.			X
(d) Conform to safety standards as established by appropriate regulatory authorities.			X
Discussion: Energy conservation measures will be implemented where possible in the design of 'O'oma Beachside Village, as discussed in Section 4.9.5 (Electrical System).			
GAS			
Policy:			
(a) Gas storage facilities shall be located to minimize danger to commercial and residential areas.			X
Discussion: 'O'oma Beachside Village will not contain gas storage facilities; therefore, this policy is not applicable.			
SEWER			
Policies:			
(a) The "Sewerage Study for All Urban and Urbanizing Areas of the County of Hawaii, State of Hawaii," December 1970, and the "Water Quality Management Plan for the County of Hawaii," December 1980, shall be updated and used as guides for the general planning of sewerage disposal systems.			X
(b) 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.	X		
(c) 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.			X
(d) Continue to seek State and Federal funds to finance the construction of proposed sewer systems and improve existing systems.			X
(e) Plans for wastewater reclamation and reuse for irrigation and biosolids composting (remaining solids from the treatment of wastewater is processed into a reusable organic material) shall be utilized where feasible and needed.	X		
(f) Require major developments to connect to existing sewer treatment facilities or build their own.	X		
Discussion: 'O'oma Beachside Village, LLC will develop an on-site one mgd wastewater treatment plant. Design and construction will be in accordance with State Department of Health and County of Hawai'i standards and treated water would be reused for irrigation, as discussed in Section 4.9.2 (Wastewater).			
RECREATION			
Goals:			
(a) Provide a wide variety of recreational opportunities for the residents and visitors of the County.	X		

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(b) Maintain the natural beauty of recreation areas.	X		
(c) Provide a diversity of environments for active and passive pursuits.	X		
Policies:			
(a) Strive to equitably allocate facility-based parks among the districts relative to population, with public input to determine the locations and types of facilities.			X
(b) Improve existing public facilities for optimum usage.	X		
(c) Recreational facilities shall reflect the natural, historic, and cultural character of the area.	X		
(d) The use of land adjoining recreation areas shall be compatible with community values, physical resources, and recreation potential.	X		
(e) Develop short and long range capital improvement programs and plans for recreational facilities that are consistent with the General Plan.			X
(f) The "County of Hawaii Recreation Plan" shall be updated to reflect newly identified recreational priorities.			X
(g) Facilities for compatible multiple uses shall be provided.	X		
(h) Provide facilities and a broad recreational program for all age groups, with special considerations for the handicapped, the elderly and young children.	X		
(i) Coordinate recreational programs and facilities with governmental and private agencies and organizations. Innovative ideas for improving recreational facilities and opportunities shall be considered.			X
(j) Develop local citizen leadership and participation in recreation planning, maintenance, and programming.			X
(k) 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.	X		
(l) Public access to the shoreline shall be provided in accordance with an adopted program of the County of Hawaii.	X		
(m) 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.	X		
(n) Establish a program to inventory ancient trails, cart roads and old government roads on the island in coordination with appropriate State agencies.	X		
(o) Develop facilities and safe pathway systems for walking, jogging, and biking activities.	X		
(p) Develop a recreation information dissemination system for the public's use.	X		
(q) Revise the ordinance requiring subdivisions to provide land area for park and recreational use or pay a fee in lieu thereof.			X
(r) Develop and adopt an Impact Fees Ordinance.			X
(s) Consider alternative sources of funding for recreational facilities.			X
(t) Develop best management practices for the development of golf courses in coordination with developers, State Department of Health, and other government agencies.			X
(u) Provide access to public hunting areas.			X

Discussion: 'O'oma Beachside Village will enhance recreational resources in the area by providing approximately 103 acres of parks and open space, as discussed in Section 4.11.5 (Recreational Facilities). Near the shore, there will be approximately 75 acres of parks and open space consisting of approximately 57 acres of open space, an 18-acre shoreline park (will connect to The Shores at Kohanaiki shoreline park), and a community pavilion. There will also be an approximately 7-acre active community park and 5 acres of various smaller neighborhood parks. Queen Ka'ahumanu Highway and the historic Māmalahoa Trail will be maintained with landscape buffers (approximately 16 acres).

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
TRANSPORTATION			
Goals:			
(a) Provide a transportation system whereby people and goods can move efficiently, safely, comfortably and economically.	X		
(b) Make available a variety of modes of transportation that best meets the needs of the County.	X		
Policies:			
(a) A framework of transportation facilities that will promote and influence desired land use shall be established by concerned agencies			X
(b) 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.			X
(c) The improvement of transportation service shall be encouraged.	X		
(d) Consider the provision of adequate transportation systems to enhance the economic viability of a given area.	X		
(e) 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.	X		
(f) Work with various non-profit agencies to coordinate transportation opportunities.			X

Discussion: 'O'oma Beachside Village envisions a "live-work-play" model for the project that will help to mitigate the traffic impact on Queen Ka'ahumanu Highway and the surrounding areas.

'O'oma Beachside Village's homes will be near employment centers allowing workers alternative transportation options to get to work, such as walking an bicycling. Public transportation will also be more feasible since 'O'oma Beachside Village is along the planned transit corridor.

The neighborhood design of 'O'oma Beachside Village will serve to minimize trips onto Queen Ka'ahumanu Highway as many essential services, such as stores, restaurants, parks, and a school, will be within walking and biking distance to residents.

'O'oma Beachside Village is currently working with both the County of Hawai'i and the State Department of Transportation to develop solutions that will help to further mitigate traffic impacts of this development.

ROADWAYS			
Goals:			
(a) Provide a system of roadways for the safe, efficient and comfortable movement of people and goods.	X		
(b) Provide an integrated State and County transportation system so that new major routes will complement and encourage proposed land policies.			X
Policies:			
(a) Encourage the programmed improvement of existing roadways by both public and private sectors.	X		
(b) Investigate various methods of funding road improvements, including private sector participation, to meet the growing transportation needs of the island.	X		
(c) Encourage the State to establish a continuous State highway system connecting the County's major airports and harbors.			X

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(d) Support the development of programs to identify and improve hazardous and substandard sections of roadway and drainage problems.			X
(e) Coordinate with appropriate Federal and State agencies for the funding of transportation projects for areas of anticipated growth.			X
(f) Consider the development of alternative means of transportation, such as mass transit, bicycle and pedestrian systems, as a means to increase arterial capacity.	X		
(g) 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.			X
(h) Provisions for on-street parking shall be incorporated into the design of street systems.	X		
(i) Encourage the State Department of Transportation to establish special scenic routes within and between communities.			X
(j) Transportation and drainage systems shall be integrated where feasible.	X		
(k) Support the development of an efficient transit route between east and west Hawaii.			X
(l) 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.	X		
(m) 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.			X
(n) Encourage the development of walkways, jogging, and bicycle paths within designated areas of the community.	X		
(o) 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.	X		
(p) The Bikeway Plan for the County of Hawaii (1979) shall be updated to include the development of a safe and usable bikeway system throughout the island.			X
(q) Work in conjunction with the State to establish a clear agreement of the ownership and maintenance of the old homestead roads.			X
(r) Develop short and long range capital improvement programs and plans for transportation that are consistent with the General Plan.			X

Discussion: 'O'oma Beachside Village's homes will be near employment centers allowing workers alternative transportation options to get to work, such as walking an bicycling. Public transportation will also be more feasible since 'O'oma Beachside Village is along the planned transit corridor.

The neighborhood design of 'O'oma Beachside Village will serve to minimize trips onto Queen Ka'ahumanu Highway as many essential services, such as stores, restaurants, parks, and a school, will be within walking and biking distance to residents.

'O'oma Beachside Village is currently working with both the County of Hawai'i and the State Department of Transportation to develop solutions that will help to further mitigate traffic impacts of this development.

TRANSPORTATION TERMINALS: AIRPORTS & HARBORS			
Goal:			
(a) Provide transportation terminals and related facilities for the safe, efficient and comfortable movement of people and goods.			X
Policies:			

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(b) Encourage the programmed improvement of existing terminals, including adequate provisions for control of pollution and appropriate and adequate covered storage facilities for agricultural products.			X
(c) 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.			X
(d) Transportation terminals should be developed in conjunction with the different elements of the overall transportation system.			X
(e) Encourage maximum use of the island's airport and harbor facilities.			X
(f) Encourage the development, maintenance, and enhancement of Hilo and Kawaihae Harbors as detailed within the State's Hawaii Commercial Harbors 2020 Master Plan.			X
(g) 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.			X

Discussion: 'O'oma Beachside Village does not involve transportation terminals: airports or harbors; therefore, these goal and policies are not applicable.

MASS TRANSIT			
Goal:			
(a) Provide residents with a variety of public transportation systems that are affordable, efficient, accessible, safe, environmentally friendly, and reliable.	X		
Policies:			
(a) 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.	X		
(b) Support and encourage the development of alternative modes of transportation, such as enhanced bus services and bicycle paths.	X		
(c) Incorporate, where appropriate, bicycle routes, lanes, and paths within road rights-of-way in conformance with The Bikeway Plan for the County of Hawaii.			X
(d) Provisions to enhance the mobility of minors, non-licensed adults, low-income, elderly, and people with disabilities shall be made.			X

Discussion: 'O'oma Beachside Village will be guided by Traditional Neighborhood Design (TND), which is a design philosophy that revisits the past by understanding the way traditional communities were built. TND represents compact, mixed-use neighborhoods where residential, commercial and civic buildings are within close proximity to each other. It is a planning concept that is based on traditional small town development principles, in part, a reaction to the often inefficient use of land and infrastructure and lack of a sense of community in many newer developments.

TND communities are an alternative to conventional suburban sprawl, and have been well received and enthusiastically embraced in many areas as a way to restore a sense of place, create vibrant communities, preserve open space and reduce congestion. Section 2.2.1 (Statement of Objectives) provides further discussion.

In addition, coordination and planning are underway for 'O'oma Beachside Village, LLC to build its portion of a transit corridor/frontage connector road providing another roadway link between Kailua-Kona and the Airport.

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
LAND USE			
Goals:			
(a) Designate and allocate land uses in appropriate proportions and mix and in keeping with the social, cultural, and physical environments of the County.	X		
(b) Protect and encourage the intensive and extensive utilization of the County's important agricultural lands.			X
(c) Protect and preserve forest, water, natural and scientific reserves and open areas.	X		
Policies:			
(a) Zone urban- types of uses in areas with ease of access to community services and employment centers and with adequate public utilities and facilities.	X		
(b) Promote and encourage the rehabilitation and use of urban areas that are serviced by basic community facilities and utilities.	X		
(c) Allocate appropriate requested zoning in accordance with the existing or projected needs of neighborhood, community, region and County.	X		
(d) Conduct a review and re-evaluation of the real property tax structure to assure compatibility with land use goals and policies.			X
(e) Incorporate innovations such as the "zone of mix" and "mixed use zones" into the Zoning Code.	X		
(f) Encourage the development and maintenance of communities meeting the needs of its residents in balance with the physical and social environment.	X		
(g) 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.			X
(h) 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.			X
(i) Ensure that condominium property regimes (CPR) comply with the requirements of the Zoning Code, Subdivision Control Code and other applicable rules and regulations.			X
(j) Encourage urban development within existing zoned areas already served by basic infrastructure, or close to such areas, instead of scattered development.	X		
Discussion: 'O'oma Beachside Village is an infill development, located between existing Urban uses. 'O'oma Beachside Village is in the *County of Hawai'i General Plan*'s planned path of urbanization and near existing and growing centers of employment. As discussed in Section 4.10.1 (Population), 'O'oma Beachside Village responds to the demand of a growing population for the North Kona region, as well as the demand for homes in West Hawai'i for existing full-time residents. The proposed project could affect population through in-migration of additional State and County residents.			
AGRICULTURE			
Goals:			
(a) Identify, protect and maintain important agriculture lands on the island of Hawaii.			X
(b) Preserve the agricultural character of the island.			X
(c) Preserve and enhance opportunities for the expansion of Hawaii's Agricultural Industry.			X
Policies:			
(a) Implement new approaches to preserve important agricultural land.			X
(b) Assist in the development of basic resources such as water, roads, transportation and distribution facilities for the agricultural industry.			X
(c) Assist other State agencies, such as the University of Hawaii, College of Tropical Agriculture and Human Resources, University of Hawaii at Hilo, College of Agriculture, Forestry and Natural Resources Management, Department of Business, Economic			X

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Development and Tourism, Office of Planning, Department of Land and Natural Resources and Department of Agriculture, on programs that aid agriculture.			
(d) Agricultural land may be used as one form of open space or as green belt.			X
(e) Coordinate and encourage efforts to solve the problems of the agricultural industry in the County of Hawaii.			X
(f) 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.			X
(g) Land zoned for use in the Rural District shall be expanded, where appropriate.			X
(h) Develop subdivision standards that make a distinction between agricultural and urban land uses.			X
(i) Designate, protect and maintain important agricultural lands from urban encroachment.			X
(j) Ensure that development of important agricultural land be primarily for agricultural use.			X
(k) Support the development of private and State agricultural parks to make agricultural land available for agricultural activities.			X
(l) Assist in the development of agriculture.			X
(m) Assist in the development of water for agricultural purposes.			X
(n) Investigate possibilities to prevent non-agricultural uses that could interfere with potential or existing agricultural activities on important agricultural lands.			X
(o) 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.			X
(p) 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.			X
(q) 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.			X
(r) Encourage, where appropriate, the establishment of visitor-related uses and facilities that directly promote the agriculture industry.			X
(s) Important agricultural lands shall not be rezoned to parcels too small to support economically viable farming units.			X
(t) Discourage speculative residential development on agricultural lands.			X
(u) Encourage other compatible economic uses that complement existing agricultural and pastoral activities.			X
Discussion: 'O'oma Beachside Village will not impact agricultural activities since none currently occur on the Property. As discussed in Section 3.3 (Soils), the Property is rated "E" and unclassified on the LSB classification, and not classified for the ALISH, indicating that the Property is not agriculturally significant. Therefore, the proposed project will not reduce the inventory of agriculturally significant lands, and this State Functional Plan is not applicable.			
COMMERCIAL DEVELOPMENT			
Goals:			
(a) Provide for commercial developments that maximize convenience to users.	X		
(b) Provide commercial developments that complement the overall pattern of transportation and land usage within the island's regions, communities, and neighborhoods.	X		
Policies:			
(a) Urban renewal, rehabilitation, and/or redevelopment programs shall be undertaken in cooperation with communities, businesses and governmental agencies.	X		
(b) Commercial facilities shall be developed in areas adequately served by necessary services, such as water, utilities, sewers, and transportation systems. Should such services	X		

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
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.			
(c) Distribution of commercial areas shall meet the demands of neighborhood, community and regional needs.	X		
(d) Existing strip development shall be converted to more appropriate uses when and where it is feasible.			X
(e) Encourage the concentration of commercial uses within and surrounding a central core area.	X		
(f) 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.	X		
(g) 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.	X		
(h) Require developers to provide basic infrastructure necessary for development.	X		
(i) Encourage commercial areas to develop on an axis perpendicular to the highway.	X		
Discussion: 'O'oma Beachside Village will impact the State and County economies by: 1) generating development activity, which supports expenditures for goods and services; 2) creating and supporting jobs and business enterprises in its ongoing operations; and 3) attracting new Island residents who would make new expenditures. 'O'oma is expected to support long-term impacts, including additional consumer expenditures, employment opportunities, personal income and government revenue enhancement. Further discussion is provided in Section 4.10.4 (Economy).			
Industrial			
Goals:			
(a) Designate and allocate industrial areas in appropriate proportions and in keeping with the social, cultural, and physical environments of the County.			X
(b) Promote and encourage the rehabilitation of industrial areas that are serviced by basic community facilities and utilities.			X
Policies:			
(a) Support the creation of industrial parks in appropriate locations as an alternative to strip development.			X
(b) Achieve a broader diversification of local industries by providing opportunities for new industries and strengthening existing industries.			X
(c) 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.			X
(d) Improve the aesthetic quality of industrial sites and protect amenities of adjacent areas by requiring landscaping, open spaces, buffer zones, and design guidelines.			X
(e) Industrial development shall be located in areas adequately served by transportation, utilities, and other essential infrastructure.			X
(f) Provide flexibility within the Zoning Code to accommodate emerging new industries.			X
(g) Industrial-commercial mixed use districts shall be provided in appropriate locations.			X
(h) Require developers to provide basic infrastructure necessary for development.			X
Discussion: 'O'oma Beachside Village does not include industrial development, and therefore, these goals and policies are not applicable.			

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
MULTIPLE RESIDENTIAL			
Goals:			
(a) To provide for multiple residential developments that maximize convenience for its occupants.	X		
(b) To provide for suitable living environments that accommodate the physical, social and economic needs of the island residents.	X		
(c) To enhance the overall quality of life in our residential communities.	X		
Policies:			
(a) 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.	X		
(b) Incorporate reasonable flexibility in applicable codes and ordinances to achieve a diversity of socio-economic housing mix.			X
(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.	X		
(d) The rehabilitation and/or utilization of multiple residential areas shall be encouraged.			X
(e) 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.			X
(f) 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.			X
(g) Support the rezoning of those multiple residentially zoned lands that are used for other purposes to a more appropriate zoning designation.	X		
(h) Require developers to provide basic infrastructure necessary for development.	X		

Discussion: 'O'oma Beachside Village will provide a variety of housing options (mixed-income; multi-family; single-family; live-work) integrated into a complete community rather than an affordable housing "project."

As discussed in Sections 2.3 ('O'oma Beachside Village Description) and 4.10.2 (Housing), the mixed-use village provides a good location for affordable and workforce housing, and can eliminate altogether the need to commute to work.

As discussed in Section 2.4 (Development Timetable and Preliminary Costs), ~~building necessary infrastructure will begin in the first phase of construction~~ 'O'oma Beachside Village, LLC intends to complete all major infrastructure for 'O'oma Beachside Village within 10 years of the granting of the requested reclassification.

SINGLE-FAMILY RESIDENTIAL			
Goals:			
(a) To maximize choices of single-family residential lots and/or housing for residents of the County.	X		
(b) To ensure compatible uses within and adjacent to single-family residential zoned areas.	X		
(c) To rehabilitate and/or rebuild deteriorating single-family residential areas.			X
(d) 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.	X		
(e) To enhance the overall quality of life in our residential communities.	X		
Policies:			

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(a) 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.			X
(b) Encourage innovative uses of land with respect to geologic and topographic conditions through the use of residential cluster and planned unit developments.	X		
(c) 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.			X
(d) 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.			X
(e) Re-evaluate existing undeveloped single-family residential zoned areas and reallocate zoned lands in appropriate locations.			X
(f) 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.	X		
(g) Rural-style residential-agricultural developments, such as new small scale rural communities or extensions of existing rural communities, shall be encouraged in appropriate locations.			X
(h) 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.			X
(i) Require developers to provide basic infrastructure necessary for development.	X		

Discussion: 'O'oma Beachside Village will provide a variety of housing options (mixed-income; multi-family; single-family; live-work) integrated into a complete community rather than an affordable housing "project."

As discussed in Sections 2.3 ('O'oma Beachside Village Description) and 4.10.2 (Housing), the mixed-use village provides a good location for affordable and workforce housing, and can eliminate altogether the need to commute to work.

As discussed in Section 2.4 (Development Timetable and Preliminary Costs), ~~building necessary infrastructure will begin in the first phase of construction~~ 'O'oma Beachside Village, LLC intends to complete all major infrastructure for 'O'oma Beachside Village within 10 years of the granting of the requested reclassification.

RESORT			
Goals:			
(a) Maintain an orderly development of the visitor industry.			X
(b) Provide for resort development that maximizes conveniences to its users and optimizes the benefits derived by the residents of the County.			X
(c) Ensure that resort developments maintain the cultural and historic, social, economic, and physical environments of Hawaii and its people.			X
Policies:			
(a) The County may impose incremental and conditional zoning that would be based on performance requirements.			X
(b) Promote and encourage the rehabilitation and the optimum utilization of resort areas that are presently serviced by basic facilities and utilities.			X
(c) Lands currently designated Resort should be utilized before new resorts are allowed in undeveloped coastal areas.			X
(d) Zoning of resort areas shall be granted when the proposed development is consistent with			X

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
and incorporates the stated goals, policies and standards of the General Plan.			
(e) Continue to seek funds from the State Capital Improvement Program to help develop visitor destination areas in accordance with the County's General Plan.			X
(f) Designate and allocate future resort areas in appropriate proportions and in keeping with the social, economic, and physical environments of the County.			X
(g) 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.			X
(h) Encourage the visitor industry to provide resort facilities that offer an educational experience of Hawaii as well as recreational activities.			X
(i) Coastal resort developments shall provide public access to and parking for beach and shoreline areas.			X
(j) Re-evaluate existing undeveloped resort designated and/or zoned areas and reallocate these lands in appropriate locations.			X
(k) Require developers to provide the basic infrastructure necessary for development.			X
Discussion: 'O'oma Beachside Village is not a proposed resort; therefore, these objective and policies are not applicable.			
OPEN SPACE			
Goals:			
(a) Provide and protect open space for the social, environmental, and economic wellbeing of the County of Hawaii and its residents.	X		
(b) Protect designated natural areas.	X		
Policies:			
(a) Open space shall reflect and be in keeping with the goals, policies, and standards set forth in the other elements of the General Plan.	X		
(b) Open space in urban areas shall be established and provided through zoning and subdivision regulations.			X
(c) Encourage the identification, evaluation, and designation of natural areas.	X		
(d) Zoning, subdivision and other applicable ordinances shall provide for and protect open space areas.			X
(e) 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.			X
Discussion: 'O'oma Beachside Village will enhance recreational resources in the area by providing approximately 103 acres of parks and open space, as discussed in Section 4.11.5 (Recreational Facilities). Near the shore, there will be approximately 75 acres of parks and open space consisting of approximately 57 acres of open space, an 18-acre shoreline park (will connect to The Shores at Kohanaiki shoreline park), and a community pavilion. There will also be an approximately 7-acre active community park and 5 acres of various smaller neighborhood parks. Queen Ka'ahumanu Highway and the historic Māmalahoa Trail will be maintained with landscape buffers (approximately 16 acres).			
PUBLIC LANDS			
Goals:			
(a) Utilize publicly owned lands in the best public interest and to the maximum benefit for the greatest number of people.			X
(b) Acquire lands for public use to implement policies and programs contained in the General Plan.			X
Policies:			

COUNTY OF HAWAI'I GENERAL PLAN (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	S	N/S	N/A
(a) Encourage uses of public lands that will satisfy specific public needs, such as housing, recreation, open space and education.			X
(b) Encourage the adoption of State programs for State lands consistent with the General Plan.			X
(c) State and County Capital Improvement Programs should continue to be coordinated.			X
(d) 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.			X
(e) 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.			X
(f) Encourage the State to continue the Villages of Lai'opua project at Kealakehe.			X

Discussion: 'O'oma Beachside Village will not use public lands or funds; therefore, these goals and policies are not applicable.

5.2.2 Keāhole to Kailua Development Plan

The Keāhole to Kailua Development Plan (K to K Plan) was adopted by the Hawai'i County Council in 1991. ~~The K to K Plan will soon be replaced by the Kona Community Development Plan (Kona CDP) currently being drafted (see following Section 5.2.3). Ultimately, the Hawai'i County Council will adopt the Kona CDP as an "ordinance," giving the Kona CDP the force of law. However, until the County Council approves the Kona CDP, the current K to K Plan is still in effect, and therefore, discussed here in relevance to 'O'oma Beachside Village~~

The overall goal the K to K Plan, as stated in the Plan (p. 1-2), is: "To develop a mixed residential, commercial, resort, industrial and recreational community, with approximately 8,000 or more residential units, in a functional, attractive, and financially viable manner. The community will include appropriate shoreline uses, public facilities, and infrastructure and will be built out over the next 20 years."

The Land Use objective of the K to K Plan is to "develop a plan for an integrated community consistent with the *County of Hawai'i General Plan*, which can be served by the required infrastructure in phases, and which provides for a mix of land uses in a functional, efficient, and aesthetically pleasing manner."

The proposed 'O'oma Beachside Village is consistent with the K to K Plan, which supports a mixed residential, commercial, and recreational community.

5.2.3 Kona Community Development Plan

The *County of Hawai'i General Plan*, Section 15.1 (February 2005, as amended) calls for the preparation of Community Development Plans "to translate the broad General Plan statements to specific actions as they apply to specific geographical areas." The *General Plan* requires Community Development Plans be adopted as an "ordinance," giving the plans force of law. This is in contrast to plans of the past that were adopted by resolution, and therefore, served only

as guidelines or reference documents for decision-makers. Community Development Plans are to be long-term plans with a planning horizon to year 2020, consistent with the *General Plan*.

The Kona Community Development Plan (Kona CDP~~), when completed, will~~ translate<u>s</u> the broad goals and policies of the *County of Hawai'i General Plan* into specific actions and priorities for specific geographic areas in the districts of North and South Kona. The Kona CDP ~~will~~ deal<u>s</u> with all the elements included in the *General Plan* such as the economy, energy, environmental quality, flooding and other natural hazards, historic sites, natural beauty, natural resources and shoreline, housing, public facilities, public utilities, recreation, transportation, and land use. ~~The Kona CDP is the first to be enacted under the *General Plan* and is set up to be a model for future Community Development Plans on the island.~~

<u>On September 25, 2008, the acting Mayor approved the Kona Community Development Plan (Kona CDP).</u>

The Kona CDP process was guided by a Steering Committee composed of a broad cross-section of the community. The Steering Committee provided guidance, assisted in the preparation of the plan, and recommended the plan's approval to the Planning Commission. ~~The Draft of the Kona CDP has been completed and is available for review at the following website: <http://www.hcrc.info/hawai i island plan/kona/cdp draft chapters/>.~~[19]

The purposes of the CDP are to:

- Articulate Kona's residents' vision for the planning area.
- Guide regional development in accordance with that vision, accommodating future growth while preserving valued assets.
- Provide a feasible infrastructure financing plan to improve existing deficiencies and proactively support the needs of future growth.
- Direct growth in appropriate areas.
- Create a plan of action where government and the people work in partnership to improve the quality of life in Kona to live, work, and visit.
- Provide a framework to monitor the progress and effectiveness of the plan and to make changes and update if necessary.

Initiated in September 2005, the Kona CDP is the result of an extensive public process. The Hawai'i County Planning Department recognized that only with broad public input could Kona residents take ownership of the Kona CDP, and in turn embrace the vision and commit to a better future. Thus, the Kona CDP process was designed to involve the public in an inclusive manner before drafting of the Plan began. By involving the public extensively in the process, the Kona CDP will not only address critical issues related to policy and public investments but it will also embody the community's vision of the future, define how the community wants to manage future growth, and facilitate implementation of the Plan.

The public planning process for the Kona CDP began with a two public kick-off meetings in September of 2005; since that initial meeting, extensive outreach through a creative variety of means, has been conducted to ensure input from all residents of the Kona community.

[19] ~~Hawaii Island Plan website; accessed November 1, 2007.~~

In September 2005, the consultant team conducted a series of focus group interviews with a variety of stakeholder groups which provided an understanding of attitudes and issues as well as strengths, weaknesses, and opportunities in the Kona area.

In recognition that the process needed to go directly to the people, 109 small group meeting were held from November 2005 through January 2006, providing intimate settings, smaller group size, and freer interaction. Over 800 residents, from a balanced demographic and geographic representation of the North and South Kona Districts, participated and provided input in these small group meetings.

A "Mapping the Future" workshop, attended by over 350 people, was held in February 2006, allowing participants to brainstorm where future growth should occur and address critical questions about the community's needs. Providing another creative venue for community participation, two workshops entitled "How do we grow?" were held in March 2006 and June 2006. The three-day interactive sessions provided participants the opportunity to review and provide detailed comments on the preliminary plan scenarios and to articulate their preferences and at the same time, working with images that illustrated the type of development patterns that could be created in each scenario.

Eleven working groups were created each focused on a specific theme and made up of citizens and community stakeholders. The working groups met monthly, from May 2006 to September 2006, amounting to 80 meetings in total, to focus in more detail on specific issue areas. These meetings were made up of community members with an interest or special knowledge about specific planning topics and reflected the elements making up the *County of Hawai'i General Plan.*

Representing a cross section of the Kona community, 15 citizens were appointed to serve on the Kona CDP Steering Committee. The Steering Committee was given the responsibilities of helping guide the process and representing public priorities. Since February 2006, 33 Steering Committee meeting have been held. At its latest meeting, held April 16, 2008, the Steering Committee unanimously supported the draft of the Kona CDP.

'O'oma Beachside Village is part of a new planning paradigm that will allow residents to live, work, and play all in the same community. This "traditional neighborhood design" approach is an alternative to conventional suburban sprawl and focuses on creating vibrant communities, preserving open space, and reducing congestion by providing for residents' many day-to-day needs within the community and thus minimizing trips to outside areas. This approach is consistent with, and implements, the vision, principles, and goals of the Kona CDP.

'O'oma Beachside Village shares the vision of the Kona CDP. This vision views Kona as a sustainable community characterized by a deep respect for the culture and the environment where residents responsively and responsibly accommodate change through an active and collaborative community.

'O'oma Beachside Village is consistent with many of the Kona CDP's proposed goals, objectives, policies, and implementation actions, as discussed in the following.

Kona CDP Guiding Principles	'O'oma Consistent with the Kona CDP
Protect Kona's natural resources and culture.	**Commitment to Coastline, Open Space & Cultural Features.**
The coastline, watershed areas, flood plains, important agricultural land, open space, and mauka of Māmalahoa Highway are protected. Multi-ethnic culture is preserved, protected, and restored and perpetuates the aloha spirit.	• Approximately 103-acres (34 percent of the total project area of 300+ acres) will comprise open space, including shoreline park, coastal preserve, community park, neighborhood parks and buffer zones (and no golf course). • 75-acre coastal open space and preserve o 18-acres along the shoreline will be designated as a public shoreline park. o 57-acres mauka of the shoreline park will be designated as a coastal preserve. • Community will be setback approximately 1,100- to 1,700-feet from the shoreline. • Drainage retention systems will contain runoff on-site, protect shoreline water quality. • 110-foot setback on either side of Māmalahoa Trail (approximately 12-acres of open space). • 150-foot wide open space buffer (9-acres) along Queen Ka'ahumanu Highway. • Early consultation with lineal descendents.
Provide connectivity and transportation choices.	**Commitment to Interconnectivity and TOD**
Future growth should connect communities with movement alternatives.	• Situated north of Kailua, the main objective of the 'O'oma mixed-use villages is to provide the commercial and business services to support the community and thus reduce the number of car trips required to Kailua-Kona. • The mixed-use villages provide affordable work and housing space, and can eliminate the need to commute outside to work. • 'O'oma is committed to working with State and County agencies in the planning and construction of <u>its portion of</u> a Queen Ka'ahumanu Highway frontage road through the project, interconnecting with neighbors – providing another link between Kailua and Airport. • Network of interconnected streets will disperse vehicular traffic throughout the community and connect residential areas to the mixed-use mauka and makai villages. • A second circulation system of linked pedestrian/bike trails will provide another option for traveling through the community (mauka-makai and lateral).

Kona CDP Guiding Principles	'O'oma Consistent with the Kona CDP
Efficient public transportation system that meets the needs of people and goods.	• 'O'oma is committed to exploring designation of a regional transit corridor and transit station on-site. • 'O'oma is a compact, mixed-use residential community integrating housing, employment, shopping and recreation opportunities.
Provide housing choices.	**Diversity of housing alternatives**
Future growth should offer a broad range of mixed housing choices.	• 'O'oma Beachside Village is a master-planned residential community with a full range of mixed uses including homes, commercial and retail, civic spaces, parks, preserves, trails and shoreline access. • Mix of housing for mix of income levels (market rate, "gap," workforce, affordable). • 950 to 1,200 homes, including affordable homes, multi-family homes, "live-work" units, mixed-use homes, and single-family home lots. o 420 to 485 single-family home lots (3,500 - square feet to 15,000-square feet lot sizes) on approximately 116 acres. o 100 to 135 multi-family residential units on approximately 11 acres. o 430 to 580 mixed use, apartment and live-work units in the mauka and makai commercial villages (on land area of approximately 71 acres).
Provide recreation opportunities.	**Diversity of recreational opportunities**
Future growth should provide a diversity of recreational opportunities.	• Approximately 103 acres (34 percent of the total project area) will comprise open space, which includes a community park recreation area, neighborhood pocket parks, shoreline park and coastal preserve. • 75-acre coastal open space and preserve o 18 acres along the shoreline will be designated as a public shoreline park. o Community pavilion to be built for public use near the coastline. o 57 acres mauka of the shoreline park will be designated as a coastal preserve. • Centrally located community park will include recreational facilities such as a soccer field and restrooms (approximately 7-acres). • Neighborhood pocket parks throughout 'O'oma and connected by the community trail system. (approximately 12 acres).

Kona CDP Guiding Principles	'O'oma Consistent with the Kona CDP
Direct future growth patterns as Compact Villages:	**'O'oma is a "compact," walkable, transit-oriented, residential community**
The majority of future growth should be directed north of Kailua in the form of compact villages that offer increased density and a mix of homes, shops, and places to work.	• 'O'oma Beachside Village is located north of Kailua-Kona. • 'O'oma is situated and designated in the *County of Hawai'i General Plan* as an urban expansion area. • Diversity of housing options (including higher density housing alternatives). • Charter school on-site. • Two mixed-use commercial villages serving the community. • Network of interconnected streets will disperse vehicular traffic throughout the community and connect residential areas to the mixed-use villages. • Second circulation system of linked pedestrian/bike trails will provide another option for traveling throughout the community (mauka-makai and lateral).
Community Character: Diversity, history and the host culture are celebrated in neighborhoods and communities.	• Historical context and cultural resources are preserved and protected throughout the project. • 57 acres makai coastal preserve will protect identified archaeological sites. • Community will be setback approximately 1,100- to 1,700-feet from the shoreline. • 110-foot setback from Māmalahoa Trail. • Early consultation of lineal descendents in planning and design process.
Provide infrastructure and essential facilities con-current with growth.	**Off-site infrastructure is underway and on-site infrastructure will be completed**
Future growth should occur where infrastructure (roads and utilities) and essential facilities (i.e. police, fire, and schools) are already in place – enhancing the quality of life for residents.	• State DOT is finalizing the improvements to Queen Ka'ahumanu Highway (Henry Street to Kealakehe Parkway) (estimated summer 2008). • DOT expediting Queen Ka'ahumanu Highway improvements and widening (Kealakehe Parkway to the Airport) (target end of 2010). • 'O'oma is committed to working with State and County agencies in the planning and construction of <u>its portion of</u> a Queen Ka'ahumanu Highway frontage road through the project, interconnecting with neighbors – providing another roadway link between Kailua and Airport (mauka parallel road also planned). • Commitment to exploring the designation of a transit station and related improvements on-site.

Kona CDP Guiding Principles	'O'oma Consistent with the Kona CDP
	• Desalination being considered for potable water for the project. • On-site wastewater treatment plant - treated water would be reused for irrigation.
Encourage a diverse & vibrant economy	
Agriculture, Sustainable industries, Community collaborations	• 'O'oma Beachside Village is a master-planned residential community with a full range of mixed uses including homes, commercial and retail, civic spaces, parks, preserves, trails, and shoreline access. • A mauka mixed-use village will be a walkable, pedestrian-friendly commercial area. Buildings along the "main street" will primarily contain commercial uses on the ground floor, and may contain commercial uses, office, or residences on upper floors. o Examples of commercial uses include general stores, restaurants, coffee shops, bakeries, professional offices, drug stores, and other neighborhood-serving uses. • A smaller, makai mixed-use village is located on the gentle bluff overlooking the coastal preserve and shoreline park.
Governance:	
An effective and accountable regional government structure manages the impacts of growth and meets the needs of the Kona community by encouraging cooperation among public, private, and civic partners, ensuring equitable distribution of resources, and instituting policies and regulations in a predictable and consistent manner that improves the quality of life for Kona residents.	• 'O'oma is committed to working with the Kona community, a regional government structure, as well as the County. • Meetings have already been conducted with community members. • 'O'oma team members are available to discuss the project proposal with individuals or groups. • The 'O'oma Beachside Village website, active since 2007, has provided another venue for public participation.

Kona CDP Major Strategies	'O'oma Consistent with the Kona CDP
Transportation strategies: • There are several major strategies that embody the guiding principles relating to transportation, housing, land use and infrastructure that need to be integrated and incorporated into Kona's long-term transportation policies as Kona's population continues to grow in the years ahead. These strategies include:	• 'O'oma Beachside Village is in alignment with the Kona CDP strategies that embody the guiding principles relating to transportation, housing, land use and infrastructure:

Kona CDP Major Strategies	'O'oma Consistent with the Kona CDP
o Mass Transit	o 'O'oma is committed to working with State and County agencies on the design and construction of the makai transit corridor/frontage road, as well as exploring designation of a transit station on-site.
o Multi-modal Transportation	o 'O'oma has a network of inter-connected streets that will disperse vehicular traffic throughout the community and connect residential areas to the mixed-use villages. o Second circulation system of linked pedestrian/bike trails will provide another option for traveling throughout the community (mauka-makai and lateral).
o Transit-Oriented Design	o 'O'oma Beachside Village is a compact, walkable, mixed-use residential community with two commercial villages integrating housing, employment, shopping and recreation opportunities. o 'O'oma is committed to exploring designation of a transit corridor and transit station on-site.
o Multi-Purpose Design	o 'O'oma's network of interconnected streets and circulation system of linked pedestrian/ bike trails are public spaces that safely enhance improved quality of life.
o Safety and Aesthetic Qualities	o 'O'oma, by its very design, contributes to the larger Kona community. o The trail system will be its own circulation system, off the roadways, so it is safer because pedestrians/bicyclists do not have to share with cars. o Roadways within the community will be designed for low speeds, so they will be safer.
o Affordable Housing	o Affordable housing will be built on-site.

Kona CDP Transit Oriented Development – Kona CDP Village Design Guidelines apply to the development of master plans for Transit Oriented Development (TOD) and Traditional Neighborhood Design (TND).

~~The intent is to:~~

Policy LU-2.5: Village Design Guidelines. *The Village Design Guidelines in Attachment B apply to the development of master plans for TODs and TNDs, as*

well as subsequent projects implementing the master plans. The intent of the Village Design Guidelines are to do the following:

1. *Promote transit-oriented and pedestrian-oriented development, to increase transit use, to manage traffic congestion,*
2. *Encourage mixed-use, compact development that is pedestrian in scale and sensitive to environmental characteristics of the land, and facilitates the efficient use of public services;*
3. *Have residences, shopping, employment, and recreational uses located within close proximity with each other and efficiently organized to provide for the daily needs of the residents;*
4. *Provide for a range of housing types and affordability within pedestrian-oriented, human-scale neighborhoods;*
5. ~~*Incorporate natural features and open space;*~~ *Incorporate natural features, open space, and cultural features;*
6. *Provide efficient circulation systems for pedestrians, non-motorized vehicles, and motorists that serve to functionally and physically integrate the various land use activities; and*
7. *Promote strong neighborhood identity and focus.*

Discussion: 'O'oma Beachside Village is a master-planned compact, walkable residential community with a full range of uses including homes, commercial, civic, parks, preserves, trails and shoreline access. In total, there will be 950 to 1,200 homes, including affordable, multi-family, "live-work" or mixed-use homes, and single-family lots.

There will be two mixed-use villages (mauka and makai.) These villages will include commercial, as well as "live-work" units for business and/or residential uses. Community will be setback approximately 1,100- to 1,700-feet from the shoreline.

In addition to an extensive interconnected internal road system, all of the homes will have direct or easy access to pedestrian/bike pathways that will connect to the mixed-use villages, shoreline, various neighborhoods, and parks.

Although access to 'O'oma is permitted from Queen Ka'ahumanu Highway, ~~coordination is underway for a single highway intersection with The Shores at Kohanaiki and planning for~~ 'O'oma Beachside Village LLC is committed to build its portion of a transit corridor/frontage connector road providing another roadway link between Kailua and the Airport.

Plans for 'O'oma Beachside Village include a site for a charter school, adjacent to the mauka mixed-use village and the community park. The school site is conveniently located so that the school may share the public community park's recreational facilities.

Approximately 103 acres (34 percent of the total project area) will comprise open space, which includes a community park recreation area, neighborhood parks, shoreline park, preserves and buffer zones – including a 75-acre coastal open space and coastal preserve (18 acres as a public shoreline park, community pavilion, and 57 acres designated as a coastal preserve.)

'O'oma is committed to ~~participate in~~ build its portion of the makai transit corridor/frontage road and to exploring designation of a transit station on-site. 'O'oma exemplifies the intent of the guidelines of the Kona CDP guidelines for Transit Oriented Developments.

Kona CDP Village Design Guidelines – ~~Kona Community Development Plan (CDP) Transit Oriented Development (TOD) and Traditional Neighborhood Design (TND) Village developments shall exhibit the following characteristics and conform to the following design principles: (Alphabetized statements are from the CDP text – indented responses note 'O'oma Beachside Village's alignment with CDP.):~~ The Village Design Guidelines in the draft Kona CDP apply to the development of master plans for TODs and TNDs, as well as subsequent projects implementing the master plans. The intent of the Village Design Guidelines are to do the following: (Numbered statements are from *Policy LU-2.5: Village Design Guidelines* of CDP text.)

~~a) **Commercial Village or Neighborhood Villages with mixed uses**. A mixture of non-residential and residential uses of various densities, intensities, and types designed to promote walking between uses and a variety of transportation modes such as bicycles, transit, and automobiles.~~

3. Have residences, shopping, employment, and recreational uses located within close proximity with each other and efficiently organized to provide for the daily needs of the residents;

Discussion: 'O'oma Beachside Village is a master-planned, compact, walkable, residential community with a full range of uses including a diversity of housing options, commercial, civic, parks, preserves, trails, and shoreline access.

~~b) **Functional Villages**. Villages are located and designed to embrace a full range of urban facilities including neighborhood retail centers, a variety of housing types, public/civic space and a variety of open space amenities,~~

4. Provide for a range of housing types and affordability within pedestrian-oriented, human-scale neighborhoods;

Discussion: In total, there will be 950 to 1,200 homes, including affordable, multi-family, "live-work" units, mixed-use homes and single-family lots to a variety of income levels (market rate, "gap," workforce and affordable.)

There will also be two compact mixed-use villages (mauka and makai). These villages will include commercial, as well as "live-work" units for business and/or residential uses.

Plans for 'O'oma Beachside Village also include a site for a charter school adjacent to the mauka mixed-use village and the community park. The school site is conveniently located so that the school may share the public community park's recreational facilities.

~~c) **Walkable streets.** Village designs are based on reasonable walking distances, the location of parking, and the design of streetlights, signs, and sidewalks.~~

6. Provide efficient circulation systems for pedestrians, non-motorized vehicles, and motorists that serve to functionally and physically integrate the various land use activities; and

Discussion: In addition to an extensive interconnected internal road system, non-vehicular or pedestrian/bike circulation, is given high priority. All of the homes will have direct or easy access to pedestrian/bike pathways that will connect to the shoreline and various neighborhoods, parks and mixed-use areas.

Community streets will be designed for lower vehicle speeds, with appropriately narrow lanes, sidewalks, and street trees.

Although access to 'O'oma Beachside Village is permitted from Queen Ka'ahumanu Highway, 'O'oma Beachside Village, LLC is committed to build its portion of a transit corridor/frontage connector road, providing another link between Kailua and the Airport.

~~d) **Interconnected circulation network**. An interconnected street system that prioritizes pedestrians and bicycle features and links neighborhoods to shopping areas, civic uses, parks and other recreational features.~~

~~'O'oma's network of interconnected streets will disperse vehicular traffic throughout the community and connect residential areas to the mixed-use villages at `O`oma Beachside Village.~~

~~Although access to 'O'oma is permitted from Queen Ka'ahumanu Highway, coordination is underway for a single highway intersection with The Shores at Kohanaiki and planning for a transit corridor/frontage connector road, providing another link between Kailua and the Airport.~~

~~e) **Respect for natural and cultural features**. Development activity recognizes the natural and environmental features of the area and incorporates the protection, preservation, and enhancement of these features.~~

5. Incorporate natural features, open space, and cultural features;

Discussion: Project improvements will have approximate minimum ~~1,100~~ 1,000 feet setback from the shoreline.

Approximately 103-acres (34 percent of the total project area of 300+ acres) will comprise open space, which includes a community park recreation area, neighborhood parks, shoreline park, preserves, and buffer zones.

Approximately 75 acres of this open space along the shoreline will be maintained as a public shoreline park, community pavilion, and coastal preserve. The 18 acres along the shoreline will be designated as a public shoreline park, and will be an extension of the beach parks planned at The Shores at Kohanaiki and NELHA. The shoreline park will include parking, a comfort

station, and a public-use facility. These park building improvements will be located approximately 330 feet away from the shoreline and outside of the shoreline setback area.

The remaining 57 acres mauka of the shoreline park will be designated as coastal preserve. The coastal preserve contains known archaeological and cultural sites, including burials. Therefore, to protect the integrity of these sites, the coastal preserve will remain generally undisturbed and development will be prohibited, with the exception of trails between the community and the shoreline.

The historic Māmalahoa Trail, approximately 10 feet wide within a 30-foot wide easement, runs north-south through the Property and will be preserved. A buffer of 50 feet on both sides of the Māmalahoa Trail will remain undisturbed. There will also be an additional 60-foot building setback from the buffer on both sides. The Māmalahoa Trail, buffer, and setback will provide a 230-foot wide, 2,520 feet long open space corridor, totaling approximately 12 acres.

~~f) **Public Transit.** A major public transit stop shall be located within the Village Center of most Villages.~~

1. *Promote transit-oriented and pedestrian-oriented development, to increase transit use, to manage traffic congestion,*

Discussion: The State of Hawai'i Department of Transportation (DOT) is finalizing the improvements to Queen Ka'ahumanu Highway (Henry Street to Kealakehe Parkway – estimated completion summer 2008) and is expediting Queen Ka'ahumanu Highway improvements and widening (Kealakehe Parkway to the Airport estimated completion end of 2010).

'O'oma Beachside Village, LLC ~~has committed to participating in a Memorandum of Agreement with Hawai'i County and DOT, for the construction of~~ is committed to build its portion of a makai transit corridor/frontage road through the project. In addition, 'O'oma Beachside Village is committed to exploring the construction of a transit station and related improvements on-site.

As discussed above, 'O'oma Beachside Village is in alignment with the vision, intent, guiding principles and strategies of the Kona CDP and the Design Guidelines of TOD.

5.2.4 County of Hawai'i Zoning

Similar to the State Land Use Districts, the Hawai'i County Code regulates the type and location of development permitted on the island. Hawai'i County Code designations are more specific in terms of describing permitted land uses. For example, there are residential, resort, agricultural, commercial, industrial, open, planned unit development, cluster plan development, 'ohana dwellings, project districts, agricultural project districts, and special districts, many of which have subcategories based on a variety of development standards such as permitted lot size or structures.

The existing Hawai'i County zoning for Parcels 4 and the State ROW is Open (O) (Figure 8 ~~12~~). Open zone applies to areas that contribute to the general welfare, the full enjoyment or economic well-being of open land type use which has been established, or is proposed. The object of the

Open zone is to encourage development around it such as a golf course and park, and to protect investments which have been or shall be made in reliance upon the retention of such open type use, to buffer an otherwise incompatible land use or district, to preserve a valuable scenic vista or an area of special historical significance, or to protect and preserve submerged land, fishing ponds, and lakes (natural or artificial tide lands).

The Hawai‘i County zoning for Parcel 22 is General Industrial (MG-3a) (Figure 8 ~~12~~). The General Industrial zone applies to area for uses that are generally considered to be offensive or have some element of danger, making it necessary to separate these uses from residential and other incompatible uses. Minimum lot size is three acres in the MG-3a zone.

The land uses proposed for Parcels 4, 22, and the State ROW on the Conceptual Master Plan are not consistent with the permitted uses of the O and MG-3a designations. Therefore, subsequent to the SLUDBA process, a Change of Zone request will be submitted to the County of Hawai‘i Planning Department to change the zoning to Project District (PD). Project Districts are intended to provide for a flexible planning approach. Permitted uses generally include those permitted in the Single-Family Residential Districts (RS), Double-Family Residential Districts (RD), Multiple-Family Residential Districts (RM), Residential-Commercial Mixed Use Districts (RCX), Neighborhood Commercial Districts (CN), General Commercial Districts (CG), Village Commercial Districts (CV), or Resort-Hotel Districts (V).

5.2.5 Special Management Area

The ‘O‘oma Beachside Village site is located within the Special Management Area (SMA) (Figure 9 ~~13~~). The SMA is the area extending inland from the shoreline that has been designated for special protection to help preserve coastal resources. The County must approve any development within the SMA and issue a permit depending upon the type of development. The ‘O‘oma Beachside Village will occur inside of the SMA and thus, will require a SMA Permit. Concurrent with, and subsequent to, the Change of Zone process, ‘O‘oma Beachside Village, LLC will submit a SMA Permit application to the County of Hawai‘i Planning Department.

5.3 APPROVALS AND PERMITS

A listing of anticipated permits and approvals required for ‘O‘oma Beachside Village is presented in Table 6:

Table 6 ~~5.~~ Anticipated Approvals and Permits

Permit/Approval	Responsible Agency	Status	Projected Submittal Date
State Land Use District Boundary Amendment	State Land Use Commission	Petition filed; processing on hold until EIS process completed.	First Quarter 2009
Conservation District Use Permit (Shoreline Park)	State Department of Land and Natural Resources	Application to be filed after the Zone Change, SMA, and Plan Approval application is approved.	2011
Conservation District Use Permit (maintenance)	State Department of Land and Natural Resources	Pending approval by DLNR	Submitted October 2008
Change of Zone	County Planning Department/County Council	Application to be filed assuming successful processing of SLUDBA.	Third Quarter 2009
Special Management Area Use Permit (Major)	County Planning Department/Planning Commission	Application to be filed assuming successful processing of SLUDBA.	Third Quarter 2009
Special Management Area Use Permit (Minor) (maintenance)	County Planning Department/Planning Commission	Submittal first Quarter 2009	First Quarter 2009
Subdivision Approval	County Planning Department	Application to be submitted after change the Zone Change, SMA application is approved.	Second Quarter 2010
FAA Form 7460-1 (Notice of Proposed Construction or Alteration)	Federal Aviation Administration	Application to be filed assuming successful processing of County applications.	2011
National Pollutant Discharge Elimination System (NPDES) Permit	State Department of Health	Application to be submitted prior to Building/Grading Permits.	2011
Plan Approval	County Planning Department	Application to be filed after the Zone Change, SMA, and Subdivision application is approved.	2011
Grading/Building Permits	County Department of Public Works	Application to be filed after the Zone Change, SMA, and Plan Approval application is approved.	2011
Approval for Wastewater Treatment Facility	State Department of Health	Application to be filed after the Zone Change, SMA, and Plan Approval application is approved.	2011
Well Construction/Pump Installation Permits	State Commission on Water Resource Management	Application to be filed after the Zone Change, SMA, and Plan Approval application is approved.	2011
Underground Injection Control Permit	State Department of Health	Application to be filed after the Zone Change, SMA, and Plan Approval application is approved.	2011
Permit to Perform Work within a State Right-of-Way	State Department of Transportation	Application to be filed after the Zone Change, SMA, and Plan Approval application is approved.	2011

Chapter 6

Alternatives to the Proposed Action

6 ALTERNATIVES TO THE PROPOSED ACTION

Under HAR Title 11, Department of Health, Chapter 200, Environmental Impact Statement Rules, Section 11-200-17(F), a Draft EIS must contain a section discussing alternatives that could attain the project objectives, regardless of cost, in sufficient detail to explain why the specific alternative was rejected. Alternatives to 'O'oma Beachside Village, along with reasons why each alternative was rejected, are discussed below.

'O'oma Beachside Village Objectives – As stated in Section 2.2.1, the objectives of 'O'oma Beachside Village are rooted in the 'O'oma Beachside Village, LLC's desire to create an attractive master-planned beachside residential community with a variety of housing opportunities and mixed uses, as well as abundant recreational resources. As a mixed-use community, the objectives of 'O'oma Beachside Village are to:

- Create a complete and vibrant community of mixed uses, such as homes, retail-commercial spaces, recreation areas, and open space.
- Foster a Hawaiian sense of place, respect the land, and provide a vital and sustaining life experience.
- Provide housing for working families of Hawai'i.
- Provide homes near workplaces, thereby increasing quality of life through decreasing commuting.
- Include a mix of uses and housing types that embrace a diversity of people and activities.
- Contribute to the social infrastructure by including a school site, parks, and other public facilities.
- Incorporate sustainability by design.
- Preserve shoreline open space and provide parks and open space throughout the community.
- Encourage alternative modes of travel, other than cars, to travel through the community.

Another way to illustrate the objectives of 'O'oma Beachside Village is to compare its design and features with the principles and goals of the Kona Community Development Plan (Kona CDP.)

Initiated in September 2005 and approved by the acting mayor in September 2008, the Kona CDP ~~(as of April 2008 in draft form and final review of the Steering Committee)~~ is the result of an extensive public process including a Steering Committee review, representing a cross-section of the Kona community, several large community meetings, small group meetings, a Mapping the Future Workshop, Charrettes, and Working Groups.

The purposes of the Kona CDP are to:

- Articulate Kona's residents' vision for the planning area.
- Guide regional development in accordance with that vision, accommodating future growth while preserving valued assets.
- Provide a feasible infrastructure financing plan to improve existing deficiencies and proactively support the needs of future growth.
- Direct growth in appropriate areas.

- Create a plan of action where government and the people work in partnership to improve the quality of life in Kona for those who live, work, and visit.
- Provide a framework for monitoring the progress and effectiveness of the plan and to make changes and update if necessary.

'O'oma Beachside Village shares the vision of the Kona CDP. This vision views Kona as a sustainable community characterized by a deep respect for the culture and the environment where residents responsively and responsibly accommodate change through an active and collaborative community.

Likewise, 'O'oma Beachside Village supports and is in alignment with the Guiding Principles of the Kona CDP that provide the foundation for the goals, objectives, policies, and implementation actions (the Kona CDP Guiding Principles are listed and numbered below, followed by brief paragraphs of the 'O'oma Beachside Village objective and proposed actions related to each principle):

1. Protect Kona's natural resources and culture

'O'oma Beachside Village will be set back approximately 1,100- to 1,700-feet from the shoreline, creating a 75-acre public coastal open space and coastal preserve (18 acres as a public shoreline park, community pavilion and 57 acres designated as a coastal preserve) along the ocean frontage.

The historic Māmalahoa Trail, which will remain protected and preserved, is approximately 10 feet wide within a 30-foot wide easement and runs north-south through the Property. A buffer of 50 feet on both sides of the Trail will remain undisturbed. Therefore, the Māmalahoa Trail with the buffer will provide a 110-foot wide open space corridor, which is approximately 2,520 feet long, and includes approximately seven acres. There will also be an additional 60-foot building setback from the buffer on both sides.

2. Provide connectivity and transportation choices

'O'oma Beachside Village provides a network of interconnected streets that will disperse internal vehicular traffic throughout the community and connect residential areas to the mixed-use villages. A second circulation system of linked pedestrian/bike trails will provide another option for traveling throughout the community (mauka-makai and lateral).

3. Provide housing choices

'O'oma Beachside Village will offer a wide range of housing alternatives, focused on the primary resident market, including multi-family homes, "live-work" or mixed-use units, workforce, gap group and affordable homes, and single-family home lots.

4. Provide recreation opportunities

Approximately 103 acres (34 percent of the Property) of 'O'oma Beachside Village will remain in open space, including a community park recreation area, neighborhood parks, a shoreline park, preserves, and buffer zones.

5. Direct future growth patterns toward compact villages north of Kailua

The majority of future growth should be directed north of Kailua in the form of compact villages that offer increased density and mixture of homes, shops, and places to work. Directing future growth patterns in this manner will preserve Kona's rural, diverse, and historical character.

'O'oma Beachside Village, situated north of Kailua within the Urban Expansion area of North Kona as noted in the *County of Hawai'i General Plan*, will be a diverse coastal residential community, designed to be walkable, interconnected, environmentally-conscious, with two mixed-use villages and diverse housing options.

6. Provide infrastructure and essential facilities concurrent with growth

Although access is permitted from Queen Ka'ahumanu Highway, ~~coordination is underway for a single highway intersection with The Shores at Kohanaiki and planning for~~ 'O'oma Beachside Village, LLC is committed to build its portion of a transit corridor/frontage connector road providing another roadway link between Kailua and the Airport.

'O'oma Beachside Village is committed to participating with State and County agencies ~~in~~ to develop its protion of the proposed regional frontage road makai of Queen Ka'ahumanu Highway and is committed to investigating designation of a transit stop on-site.

In addition, a site for a charter school, adjacent to the Mauka Mixed-use Village and the community park is proposed; the school site is conveniently located so that the school may share the public community park's recreational facilities.

7. Encourage a diverse and vibrant economy emphasizing agriculture and sustainable economies

'O'oma Beachside Village provides two mixed-use villages with walkable, pedestrian-friendly commercial areas. Many buildings in these areas will contain commercial uses on the ground floor, and may contain commercial uses, offices, or residences on upper floors. The main objective of the 'O'oma mixed-use villages is to provide the commercial and business services to support the community and thus reduce the number of car trips required to Kailua-Kona.

8. Effective Governance

The Kona CDP encourages residents that responsively and responsibly accommodate change through an active and collaborative community with local decision-making.

'O'oma Beachside Village is a community that includes a mix of residential, commercial, public uses, parks, open space, a neighborhood charter school, biking and walking paths combining to form a community that encourages residents to build relationships with each other, rely less on cars for transportation, walk and bicycle more often, enjoy outdoor surroundings, and actively engage in civic life.

'O'oma Beachside Village is consistent and in alignment with the Kona CDP focus of seeking Traditional Neighborhood Design (TND) and Transit Oriented Developments (TOD). 'O'oma Beachside Village is a diverse coastal residential community, designed to be walkable, interconnected, environmentally-conscious, with two mixed-use villages and diverse housing options. It is situated on the Kona CDP makai secondary transit route and is committed to investigating designation of a transit stop within the community.

'O'oma Beachside Village's community is characterized by three distinct areas: the Residential Village, the Mauka Mixed-use Village, and the Makai Mixed-use Village. In addition to the residential and mixed-use villages, approximately 34 percent of the Property will be designated as open space in the form of parks, preserves, and landscape buffers.

In total, there will be 950 to 1,200 homes, which will include multi-family units, "live-work" or mixed-use units, workforce, gap group, and affordable homes, and single-family home lots. With the exception of the shoreline park facilities, the entire 'O'oma Beachside Village community will be located outside of the shoreline setback and coastal preserves area, with a shoreline setback of more than 1,000 feet.

Non-vehicular, or pedestrian/bike circulation, is given high priority; community streets will be designed for lower vehicle speeds, with appropriately narrow lanes, sidewalks, and street trees. A second circulation system of linked pedestrian/bike trails will provide another option for traveling through the community. The community trail system will connect residential areas to the neighborhood pocket parks, the community park and facilities, the mixed-use villages, and the mauka-makai shoreline access trail.

6.1 NO ACTION ALTERNATIVE/EXISTING ZONING DESIGNATION ALTERNATIVE

Under the No Action/Existing Zoning Designation alternative, 'O'oma Beachside Village would not be built. There would be no diverse, environmentally-conscious, coastal community with mixed use villages, a walkable street network, and a range of housing options.

However, the Property could still be developed as permitted under the existing State Land Use and County zoning designations. The mauka portion of the Property (Parcel 22) is currently zoned for General-Industrial use (State Urban District; County MG-3a District). The Petition Area (Parcel 4 and the State ROW) is currently in the State Conservation District and County Open District. Within the State Conservation District, all uses are regulated under the State Land

Use District Boundary Regulations and the Conservation District Rules and Regulations. All proposed development within the Property will be subject to the County's Special Management Area Rules and Regulations.

The MG-3a District generally applies to areas for uses that are generally considered to be offensive or to have some element of danger. Permitted uses for MG-3a District include commercial, retail, and service business. Examples of permitted industrial uses in the MG-3a District include: agricultural product processing, bars, concrete or asphalt batching and mixing plants, day care centers, food manufacturing and processing facilities, fertilizer manufacturing plants, laboratories, public dumps, slaughterhouses, truck terminals, and warehousing (Section 25-5-152, Hawai'i County Code). The potential benefit of this alternative is that it would provide more industrial space and possibly more jobs in North Kona. This alternative would not be expected to increase the resident population or require additional public services, such as parks and schools, to accommodate an increased population in the area. Short-term impacts to air quality and noise levels due to construction may also be of shorter duration compared to 'O'oma Beachside Village. However, the alternative of providing industrial uses on the Property does not meet several of the objectives of 'O'oma Beachside Village, including: 1) creating a complete and vibrant community of mixed uses, with homes, retail-commercial spaces, recreation areas, and open space; 2) providing a mix of uses and housing types that embrace a diversity of people and activities; and 3) providing homes near workplaces, thereby increasing quality of life through decreasing commuting.

Identified uses within the State Conservation District are restricted by specific Conservation District subzones. Parcel 4 is within the General and Resource subzones, and the State ROW is in the General Subzone. Identified land uses for these subzones are contained in Sections 13-5-24 (Resource) and 13-5-25 (General), HAR and include aquaculture, marine construction, mining and extraction, and one residence per parcel. Thus a single-family home could be built on Parcel 4. Under this scenario all of Parcel 4 could be owned and controlled by a single homeowner, in which case it would be unlikely that the coastal preserve, shoreline park, community/neighborhood park, and open space amenities proposed in the 'O'oma Beachside Village plan would be implemented. Potential benefits of this alternative, however, would include: 1) retaining much of the area in open space; 2) avoidance of significant infrastructure demands (water, wastewater flows, solid waste disposal); 3) less traffic impacts; and 4) less short-term construction-related impacts (such as construction noise, construction equipment exhaust emissions, temporary traffic disruption, and fugitive dust). This alternative also would not be expected to increase the resident population or require additional public services, such as parks and schools, to accommodate an increased population in the area.

'O'oma Beachside Village is a well thought out residential community consistent with the Kona CDP. It will: 1) protect Kona's natural resources and culture; 2) provide diverse housing options, transportation choices, and recreation opportunities; and 3) encourage a diverse and vibrant economy.

Because the No Action/Existing Zoning alternative does not meet several 'O'oma Beachside Village objectives and does not implement the Kona CDP, this alternative has been rejected.

6.2 RESORT/HOTEL DEVELOPMENT ALTERNATIVE

Previous proposals for the Property included the development of transient accommodations in the form of hotels aimed at different markets. One alternative proposed a major resort with hotel, condominium units, 18-hole golf course, ocean theme park, and ocean science center. Another alternative proposed a smaller hotel and shopping center.

6.2.1 Major Resort

The Resort/Hotel development alternative represents high use of the Property. If this level of development were warranted by market demand, it could contribute significantly to the economic vitality of the region. Through economies of scale, fiscal revenues could be expected to rise faster than the cost to fund public services and utilities. This is a potential benefit of developing a major resort on the Property. Other potential benefits may include increased job creation.

The 'O'oma Beachside Village property's 302.38 acres is smaller than other major resort developments in West Hawai'i; for example, Waikoloa Resort is 1,350 acres and Hualālai Resort is 865 acres. Therefore, major resort/hotel development at 'O'oma could be seen as contrary to the open feeling that is characteristic of the other major resort areas. A traditional, large-scale resort at 'O'oma could not compete with existing major resort areas that contain larger acreages.

Moreover, a major resort development would be oriented toward the visitor industry rather than to local residents. Resort uses on the site do not meet several of the project objectives, including: 1) providing housing for working families of Hawai'i; 2) providing homes near workplaces, thereby increasing quality of life through decreasing commuting; 3) including a mix of uses and housing types that embrace a diversity of people and activities; and 4) contributing to the social infrastructure by including a school site, parks, and other public facilities.

Because the major resort alternative is contrary to the objectives of 'O'oma Beachside Village, this alternative was rejected. In addition, implementation of this alternative would not avoid infrastructure demands (water, wastewater flows, solid waste disposal); 2) traffic impacts; and 3) short-term construction-related impacts (such as construction noise, construction equipment exhaust emissions, temporary traffic disruption, and fugitive dust).

6.2.2 Hotel

Another alternative considered a smaller hotel development with limited commercial, residential, or small nine-hole golf course to complement the hotel. A small-scale hotel could attract a narrower market of business travelers who may desire a closer location to the Airport, or travelers that do not want to stay at a major resort. Such a hotel could be aimed at different markets: airport business hotel, all-suites, or long-term efficiency. This is a potential benefit of developing a hotel on the Property. Another potential benefit may include increased job creation. This alternative also may not require additional public services, such as parks and schools, to accommodate an increased full-time resident population in the area.

As discussed in Section 2.1.5 (History of the Property), Clifto's Kona Coast proposed such a hotel development for Parcel 22 (which is within the State Urban District and County-zoned

General Industrial). Although originally approved by the County Council for re-zoning, this project was subsequently vetoed by the Mayor.

Moreover, the previously proposed hotel development would not meet several of the current project objectives, including: 1) providing housing for working families of Hawai'i; 2) providing homes near workplaces, thereby increasing quality of life through decreasing commuting; 3) including a mix of uses and housing types that embrace a diversity of people and activities; and 4) contributing to the social infrastructure by including a school site, parks, and other public facilities.

Because the previously proposed hotel development is contrary to several of the current project objectives, this alternative was rejected. In addition, implementation of this alternative would not avoid: 1) infrastructure demands (water, wastewater flows, solid waste disposal); 2) traffic impacts; and 3) short-term construction-related impacts (such as construction noise, construction equipment exhaust emissions, temporary traffic disruption, and fugitive dust).

6.3 GOLF COURSE WITH RESIDENTIAL LOTS ALTERNATIVE

Another alternative could be to develop the Property with resort-residential and golf course uses, with resort condominiums, single-family fairway homes, golf courses, and activity centers. Such a development is currently proposed at the adjacent Shores at Kohanaiki.

As discussed in Section 6.3 above, 'O'oma Beachside Village would likely not be able to compete as a major resort. However, the Property could be developed with an 18-hole golf course, and luxury single-family fairway homes, possibly complimenting the adjacent Shores at Kohanaiki. The potential benefit of this is that it would be consistent with neighboring land uses.

This alternative would be oriented toward the visitor and part-time resident industry rather than to local full-time residents. Potential benefits of this alternative include less full-time residents and less demand for additional public services, such as parks and schools, to accommodate an increased full-time resident population in the area. However, ~~This~~ this alternative also does not meet several of the project objectives, including: 1) providing housing for working families of Hawai'i; 2) providing homes near workplaces, thereby increasing quality of life through decreasing commuting; 3) including a mix of uses and housing types that embrace a diversity of people and activities; and 4) contributing to the social infrastructure by including a school site, parks, and other public facilities.

Because this alternative is contrary to the objectives of 'O'oma Beachside Village, this alternative was rejected. In addition, implementation of this alternative would not avoid infrastructure demands (water, wastewater flows, solid waste disposal); 2) traffic impacts; and 3) short-term construction-related impacts (such as construction noise, construction equipment exhaust emissions, temporary traffic disruption, and fugitive dust).

6.4 RESIDENTIAL LOT SUBDIVISION ALTERNATIVE

Another alternative is developing the Property as a residential lot subdivison for conventional residential uses without any commercial uses. The potential benefit of this alternative is that it would addresses the need for more housing in West Hawai'i. This alternative would require

reclassification of a portion of the property from the current State Conservation District to the State Urban District as well as County residential zoning.

Typical small-lot subdivisions consisting of nothing more than residential uses usually require residents to commute to work and drive daily for household errands (i.e. from homes to schools, shopping, recreational facilities, etc). Such subdivisons have been criticized for failing to foster neighborhood interaction.

'O'oma Beachside Village offers a different residential solution than a conventional residential subdivision. As discussed in Section 2.2.1 (Statement of Objectives), the information gathered from community meetings and consultation indicates that 'O'oma Beachside Village should include mixed uses, where commercial and residential come together to create a working sustainable community.

As opposed to the conventional residential subdivision, 'O'oma Beachside Village offers traditional neighborhood design, with stores and services as an integral part of the community. This design will help to minimize car trips onto Queen Ka'ahumanu Highway since many establishments providing for residents' day-to-day needs will be within walking and biking distance. Therefore, unlike in a conventional subdivision, 'O'oma Beachside Village is designed to be a self-contained walkable community with an array of services and facilities to enable residents to meet many of their daily needs without using car.

Several aspects of the design of 'O'oma Beachside Village contribute to a high quality of life. The community will include a mix of residential, commercial and public uses, parks, and open space, a neighborhood school, biking and walking paths, a town center, pedestrian-friendly streets and public civic spaces. These components combine to form a community that encourages residents to build relationships with each other, rely less on cars for transportation, walk and bicycle more often, enjoy outdoor surroundings, and actively engage in civic life.

The conventional residential lot subdivision alternative also does not meet several of the project objectives, including: 1) creating a complete and vibrant community of mixed uses, including homes, retail-commercial spaces, recreation areas, and open space; 2) providing homes near workplaces, thereby increasing quality of life through decreasing commuting; 3) encouraging alternative modes of travel, other than cars, to travel through the community; and 4) contributing to the social infrastructure by including a school site, parks, and other public facilities.

Because the Residential Lot Subdivision alternative is contrary to the objectives of 'O'oma Beachside Village, this alternative was rejected. In addition, implementation of this alternative would not avoid infrastructure demands (water, wastewater flows, solid waste disposal); 2) traffic impacts; and 3) short-term construction-related impacts (such as construction noise, construction equipment exhaust emissions, temporary traffic disruption, and fugitive dust).

6.5 MORE AFFORDABLE, GAP GROUP, AND WORKFORCE HOUSING ALTERNATIVE

Similar to the residential lot subdivision alternative, another alternative could be to develop the Property along the lines of a more conventional subdivision with more affordable, gap group, and workforce housing. The potential benefit of this alternative is that it would address the need

for more affordable and moderate-rate housing in West Hawai'i. This alternative would still require reclassification of a portion of the Property from the current State Conservation District to the State Urban District as well as County residential zoning.

'O'oma Beachside Village already responds to the demand for housing in the North Kona/South Kohala area by providing a broad spectrum of housing opportunities. 'O'oma Beachside Village's range of housing will include affordable housing in accordance with the County's affordable housing requirements) and will also include gap group and workforce housing, defined as homes priced for households earning 150 percent to 220 percent of the median income. This inclusionary design provides for a community with social diversity, a mix of ages, and a range of life experiences. In addition, the market assessment prepared for the current 'O'oma Beachside Village master plan concludes that there is demand for all the currently proposed housing price levels within 'O'oma Beachside Village.

However, different master plans could be designed that could result in the provision of more affordable, gap group, and workforce housing. To subsidize the added cost of additional affordable, gap group, and workforce housing options, it is likely that more market housing would be required, resulting in a higher density project. The amount of neighborhood "village" commercial uses may also need to be reduced to accommodate more residential units, resulting in a more conventional type subdivision.

Depending on the density and design capacity, additional affordable, gap group, and workforce housing may result in a more segregated community (by income) with different environmental impacts. For example, a higher density project that increased the residential unit count from what is currently proposed could keep the same buildable area (a positive benefit) as currently proposed, but result in a community more defined by home price with increased visual impacts (appearance of the site changing from moderate density traditional neighborhood designed community to a higher density development with more stories for the residential buildings and/or smaller lots). A higher density project would also result in increased traffic and infrastructure demands (increased water demand, wastewater generated, and solid waste produced). Implementation of this alternative would result in increased construction-related impacts (such as construction noise, construction equipment exhaust emissions, temporary traffic disruption, fugitive dust and soil erosion.

A higher density project could also be accomplished by reducing open space on the Property from what is currently proposed (currently approximately one-third of the Property is proposed to be open space). This would reduce park, recreation, and preserve areas and could result in decreased quality of life for residents and increased impermeable surfaces and increased runoff. Reducing open space would also not avoid increased traffic and infrastructure demands (increased water demand, wastewater generated, and solid waste produced).

As currently proposed, 'O'oma Beachside Village's inclusionary traditional neighborhood design contributes to a high quality of life. The community will include a broad mix of residential price ranges, commercial and public uses, parks, and open space, a neighborhood school, biking and walking paths, a town center, pedestrian-friendly streets, and public civic spaces. These components combine to form a community that encourages residents to build relationships with each other, rely less on cars for transportation, walk and bicycle more often, enjoy outdoor surroundings, and actively engage in civic life.

As discussed in Section 2.2.1 (Statement of Objectives), the information gathered from community meetings and consultations indicates that 'O'oma Beachside Village should include mixed uses, where commercial and residential use come together to create a working sustainable community. As currently proposed, 'O'oma Beachside Village offers traditional neighborhood design, with stores and services as an integral part of the community. This design will help to minimize car trips onto Queen Ka'ahumanu Highway since many establishments providing for residents' day-to-day needs will be within walking and biking distance. Therefore, unlike a conventional subdivision, 'O'oma Beachside Village is designed to be a self-contained, walkable community with an array of services and facilities to enable residents to meet many of their daily needs without using car.

Because the alternative of a higher density project with more affordable, gap group, and workforce housing is contrary to the objectives of 'O'oma Beachside Village, this alternative was rejected. In addition, implementation of this alternative could result in increased infrastructure demands (water, wastewater flows, solid waste disposal); 2) traffic impacts; and 3) short-term construction-related impacts (such as construction noise, construction equipment exhaust emissions, temporary traffic disruption, and fugitive dust).

6.6 POSTPONING ACTION PENDING FURTHER STUDY ALTERNATIVE

The alternative of postponing action pending further study is not necessary for the following reasons:

- This EIS and its related technical studies provide a thorough evaluation of the impacts from 'O'oma Beachside Village.

- Entitlement processing for 'O'oma Beachside Village will include a State Land Use District Boundary Amendment, Special Management Area Use Permit, and County Project District rezoning. Each of these steps provide for public input and comments, as well as opportunities for the public and decision makers to ask for more information or further study. Notwithstanding the entitlement process, project leaders have consulted extensively with agency and community members (see Chapter 8) and provided a website (http://oomavillage.com/). The website also allow for community feedback, concerns and to express interest in living at 'O'oma Beachside Village.

- Primary residential housing in West Hawai'i is in high demand as stated in County and privately initiated marketing studies (see Section 4.10.2). In ~~January~~ September 2008, the median sales price was $570,000 ~~$595,000~~ for a single-family home in North Kona and $315,000 ~~$397,500~~ for a condominium (Hawai'i Island Board of Realtors 2008). Postponing the proposed action to allow for more studies will only amplify the demand for housing, which could lead to increased prices.