

**Environmental  
Assessment/Environmental  
Impact Statement  
Preparation Notice**

**PROPOSED OLOWALU TOWN  
MASTER PLAN  
(TMK Nos. (2)4-8-003:84, 98  
through 118, and 124)**

**Prepared for:**

**Olowalu Town, LLC and  
Olowalu Ekolu, LLC**

**April 2010**

# CONTENTS

Executive Summary .....	Page i
I. PROJECT OVERVIEW .....	Page 1
A. PROPERTY LOCATION, OWNERSHIP, AND CURRENT LAND USE .....	Page 1
B. BACKGROUND .....	Page 5
1. History .....	Page 5
2. Community-Based Planning .....	Page 6
C. PROPOSED ACTION .....	Page 7
D. PROJECT NEED .....	Page 12
E. ENTITLEMENTS REQUIRED .....	Page 13
1. State Land Use District Boundary Amendment .....	Page 13
2. West Maui Community Plan Amendment .....	Page 15
3. Change in Zoning .....	Page 15
4. Special Management Area Use Permit .....	Page 17
F. CHAPTER 343, HAWAII REVISED STATUTES REQUIREMENTS ..	Page 17
G. ANTICIPATED DEVELOPMENT SCHEDULE .....	Page 17
II. DESCRIPTION OF THE EXISTING CONDITIONS, POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES .....	Page 19
A. PHYSICAL ENVIRONMENT .....	Page 19
1. Existing and Surrounding Land Use .....	Page 19
2. Climate .....	Page 20
3. Topography .....	Page 21
4. Soils and Agricultural Land Characteristics .....	Page 22
5. Flood and Tsunami Hazards .....	Page 30
6. Flora and Fauna .....	Page 30
7. Streams and Reservoirs .....	Page 34
8. Nearshore Waters .....	Page 35
9. Archaeological Resources .....	Page 36
10. Cultural Assessment .....	Page 39
11. Air Quality .....	Page 40
12. Noise .....	Page 41
13. Scenic and Open Space Resources .....	Page 41
14. Shoreline Access .....	Page 42
B. SOCIO-ECONOMIC ENVIRONMENT .....	Page 44
1. Population .....	Page 44
2. Economy .....	Page 45

3.	Housing	Page 46
C.	PUBLIC SERVICES	Page 47
1.	Solid Waste Disposal	Page 47
2.	Medical Facilities	Page 47
3.	Police and Fire Protection	Page 48
4.	Educational Facilities	Page 49
5.	Recreational Facilities	Page 50
D.	INFRASTRUCTURE	Page 51
1.	Roadways	Page 51
2.	Water	Page 54
3.	Wastewater Systems	Page 55
4.	Drainage	Page 56
5.	Electrical, Telephone and CATV Considerations	Page 57
E.	CUMULATIVE AND SECONDARY IMPACTS	Page 57
III.	RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS	Page 59
A.	STATE LAND USE DISTRICT	Page 59
B.	STATE LAND USE DISTRICT CRITERIA	Page 59
C.	HAWAII STATE PLAN	Page 63
D.	MAUI COUNTY GENERAL PLAN	Page 70
E.	WEST MAUI COMMUNITY PLAN	Page 84
F.	COUNTY ZONING	Page 91
G.	PROJECT DISTRICT PROCESSING REQUIREMENTS	Page 91
H.	COASTAL ZONE MANAGEMENT	Page 92
1.	Recreational Resources	Page 92
2.	Historic Resources	Page 93
3.	Scenic and Open Space Resources	Page 94
4.	Coastal Ecosystems	Page 94
5.	Economic Uses	Page 95
6.	Coastal Hazards	Page 96
7.	Managing Development	Page 97
8.	Public Participation	Page 97
9.	Beach Protection	Page 98
10.	Marine Resources	Page 99
I.	OTHER REGULATORY APPROVALS	Page 100
IV.	ALTERNATIVES TO THE PROPOSED ACTION	Page 101
A.	FORMULATION OF THE PREFERRED ALTERNATIVE	Page 101
B.	NO-ACTION ALTERNATIVE AND DEFERRAL OF ACTION ALTERNATIVE	Page 101
C.	OTHER ALTERNATIVES	Page 102

V.	SUMMARY OF UNAVOIDABLE IMPACTS AND IRREVERSIBLE/ IRRETRIEVABLE COMMITMENTS OF RESOURCES .....	Page 103
VI.	SIGNIFICANCE CRITERIA ASSESSMENT .....	Page 104
VII.	LIST OF PERMITS AND APPROVALS .....	Page 108
VIII.	OTHER ELEMENTS TO BE ADDRESSED IN THE DRAFT ENVIRONMENTAL IMPACT STATEMENT .....	Page 109
IX.	EARLY CONSULTATION WITH COMMUNITY IN PREPARATION OF THE ENVIRONMENTAL ASSESSMENT/ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE .....	Page 110
X.	AGENCIES TO BE CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT .....	Page 111
XI	REFERENCES .....	Page i

F:\DATA\OlowaluTown\MasterPI\EISP\NEA EISP\Report.wpd

## LIST OF FIGURES

<b>Figure 1.</b>	Regional Location Map .....	Page 2
<b>Figure 2.</b>	Aerial Photograph of Project Site .....	Page 3
<b>Figure 3.</b>	Tax Map Parcel Designations .....	Page 4
<b>Figure 4.</b>	Conceptual Master Plan .....	Page 8
<b>Figure 5.</b>	State Land Use Designations .....	Page 14
<b>Figure 6.</b>	West Maui Community Plan Land Use Designations Map .....	Page 16
<b>Figure 7.</b>	Special Management Area Boundary Map .....	Page 18
<b>Figure 8.</b>	Soil Association Map .....	Page 23
<b>Figure 9.</b>	Soil Classifications Map .....	Page 24
<b>Figure 10.</b>	Agricultural Lands of Importance to the State of Hawaii (ALISH) Map ..	Page 27
<b>Figure 11.</b>	Land Study Bureau Land Classifications Map .....	Page 28
<b>Figure 12.</b>	Flood Insurance Rate Map .....	Page 31
<b>Figure 13.</b>	State Government Beach Reserve Map .....	Page 43

## LIST OF TABLES

<b>Table 1.</b>	Olowalu Town Master Plan Parcel Identification Summary . . . . .	Page 5
<b>Table 2.</b>	Master Plan Land Use Allocation Summary . . . . .	Page 9
<b>Table 3.</b>	Olowalu Town Master Plan Residential Housing Types . . . . .	Page 10
<b>Table 4.</b>	Olowalu Town Master Plan Planning and Design Considerations . . . . .	Page 11
<b>Table 5.</b>	Olowalu Master Plan Preliminary Implementation Time Schedule . . . . .	Page 17
<b>Table 6.</b>	Olowalu Town Master Plan Soil Series Summary . . . . .	Page 25
<b>Table 7.</b>	Actual Enrollments at Department of Education Schools in West Maui . . . . .	Page 49

## LIST OF APPENDICES

<b>Appendix A.</b>	Biological Resources Survey
<b>Appendix B.</b>	Olowalu Talk Story
<b>Appendix C.</b>	A Baseline Study on Sediment Loading, Water Quality and Selected Marine Life in Nearshore Waters of Olowalu, Maui
<b>Appendix D.</b>	Scientific Consultant Services, Inc. Letter dated January 22, 2007

## Executive Summary

**Project Name:** Proposed Olowalu Town Master Plan

**Type of Document:** Environmental Assessment/Environmental Impact Statement Preparation Notice

**Legal Authority:** Chapter 343, Hawaii Revised Statutes

**Agency Determination:** Environmental Impact Statement to be Prepared

**Applicable Chapter 343, HRS Triggers:** Proposed Amendment to West Maui Community Plan; Use of State Lands; Use of Conservation Lands; Construction of Wastewater Treatment Facilities

**Location:** TMK Nos. (2)4-8-003:84, 98 through 118, and 124 Olowalu, Maui, Hawaii

**Landowner:** Olowalu Elua Associates, LLC and Olowalu Ekolu, LLC

**Applicant:** Olowalu Town, LLC and Olowalu Ekolu, LLC  
2073 Wells Street, Suite 101  
Wailuku, Hawaii 96793  
Contact: Bill Frampton  
Phone: (808) 249-2224

**Accepting Authority:** State Land Use Commission  
P. O. Box 2359  
Honolulu, Hawaii 96804  
Contact: Dan Davidson  
Phone: (808) 587-3822

**Consultant:** Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793  
Contact: Colleen Suyama, Project Manager  
Phone: (808) 244-2015

**Project Summary:** Olowalu Elua Associates, LLC and Olowalu Ekolu, LLC propose the Olowalu Town Master Plan which serves to guide the re-establishment of a viable community at Olowalu. The Master Plan area currently consists of twenty-two (22)

agricultural parcels and five (5) roadway lots, encompassing approximately 636.48 acres.

The Olowalu Town Master Plan (Master Plan) combines conservation, agricultural, rural, and urban land uses to re-establish a small-scale and mixed-use community as a center of employment, housing, and recreation. Guided by the values and principles of the Ahupuaa, the Master Plan includes the re-establishment of former agricultural use along Olowalu Stream.

The Master Plan is designed to be a pedestrian-friendly community which will allow residents to live within walking distance of corner stores, schools, parks, employment opportunities, gathering centers, beaches/shoreline, and other social and civic resources, ultimately reducing reliance on automobiles.

The Olowalu community will consist of approximately 1,500 residential dwelling units to be built concurrent with appropriate infrastructure in phases spread out over a period of approximately 30 years. There will be a variety of single-family and multi-family dwelling types, including houses, apartments, live-work apartments, cottages, rural homes and farmsteads which will be offered at a wide-range of income levels, including both rental and fee-ownership. A substantial portion of the homes are planned for much-needed affordable housing and senior living.

To ensure development sustainability, the Master Plan calls for the use of state-of-the-art engineering and design principles for water, wastewater, drainage, and energy systems. Drinking water, for example, will be provided by an existing private water system having the capacity to meet the Master Plan's estimated 750,000 gallons per day (gpd) requirement. Wastewater treatment and disposal will be provided via small privately owned and operated treatment plants which will yield R-1 quality water to be used to meet future irrigation demands of the community. Utilizing the R-1 treated water for irrigation purposes will minimize the need for injection wells. Drainage systems will be designed to meet or exceed County standards and will include the use of Best Management Practices, or BMPs, to mitigate impacts to shoreline areas.

A significant infrastructure component of the Master Plan is the proposed relocation of Honoapiilani Highway along a mauka alignment to provide a route which is consistent with the County of Maui's proposed Pali to Puamana Master Plan. The mauka realignment of Honoapiilani Highway will facilitate the State and County's vision to move the highway inland, away from its existing, more environmentally sensitive coastal alignment.



# **I. PROJECT OVERVIEW**

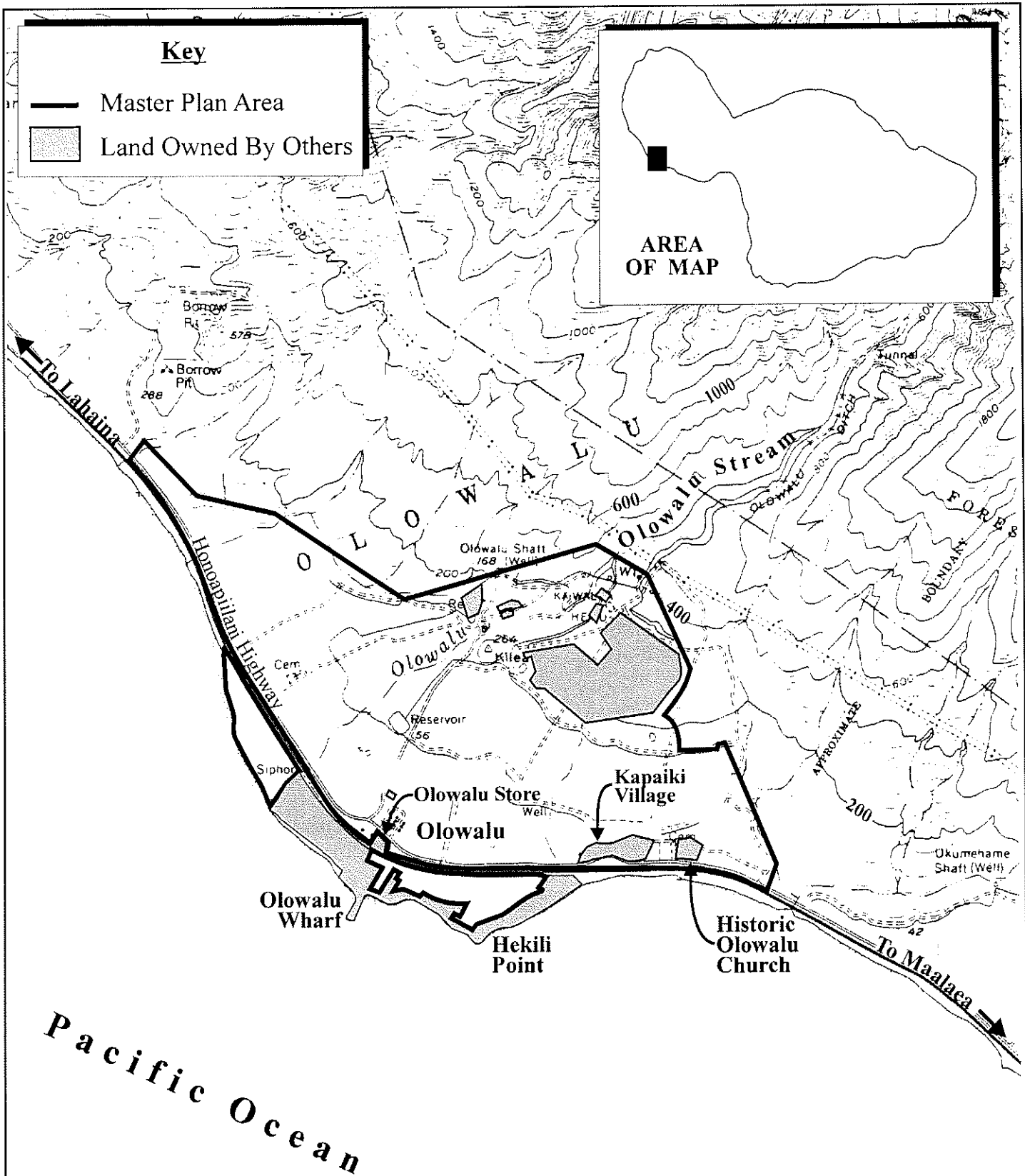
# I. PROJECT OVERVIEW

## A. PROPERTY LOCATION, OWNERSHIP, AND CURRENT LAND USE

Olowalu is located along Honoapiilani Highway, approximately four (4) miles south of Lahaina Town on the southwestern foothills of the West Maui Mountains. See **Figure 1**. Olowalu is known for its small village environs which includes the Olowalu General Store. Surrounding the store are plantation-era single-family residences, including a single-family residential cluster located to the south, known as Kapaiki Village, and the former plantation manager's house, associated residences, and Camp Olowalu (formerly Camp Pecusa) located makai of Honoapiilani Highway. See **Figure 2**.

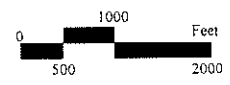
Since the termination of sugar cultivation activities by Pioneer Mill in 1999, the lands surrounding Olowalu have been utilized for small farming operations or have remained fallow. Lands have been subdivided, with a limited number of lots sold to individual purchasers. The ownership of the majority of lands surrounding the existing village are retained under ownership by Olowalu Elua Associates, LLC and Olowalu Ekolu, LLC. Olowalu Town, LLC and Olowalu Ekolu, LLC are the applicants for a proposed master planned community on these surrounding lands.

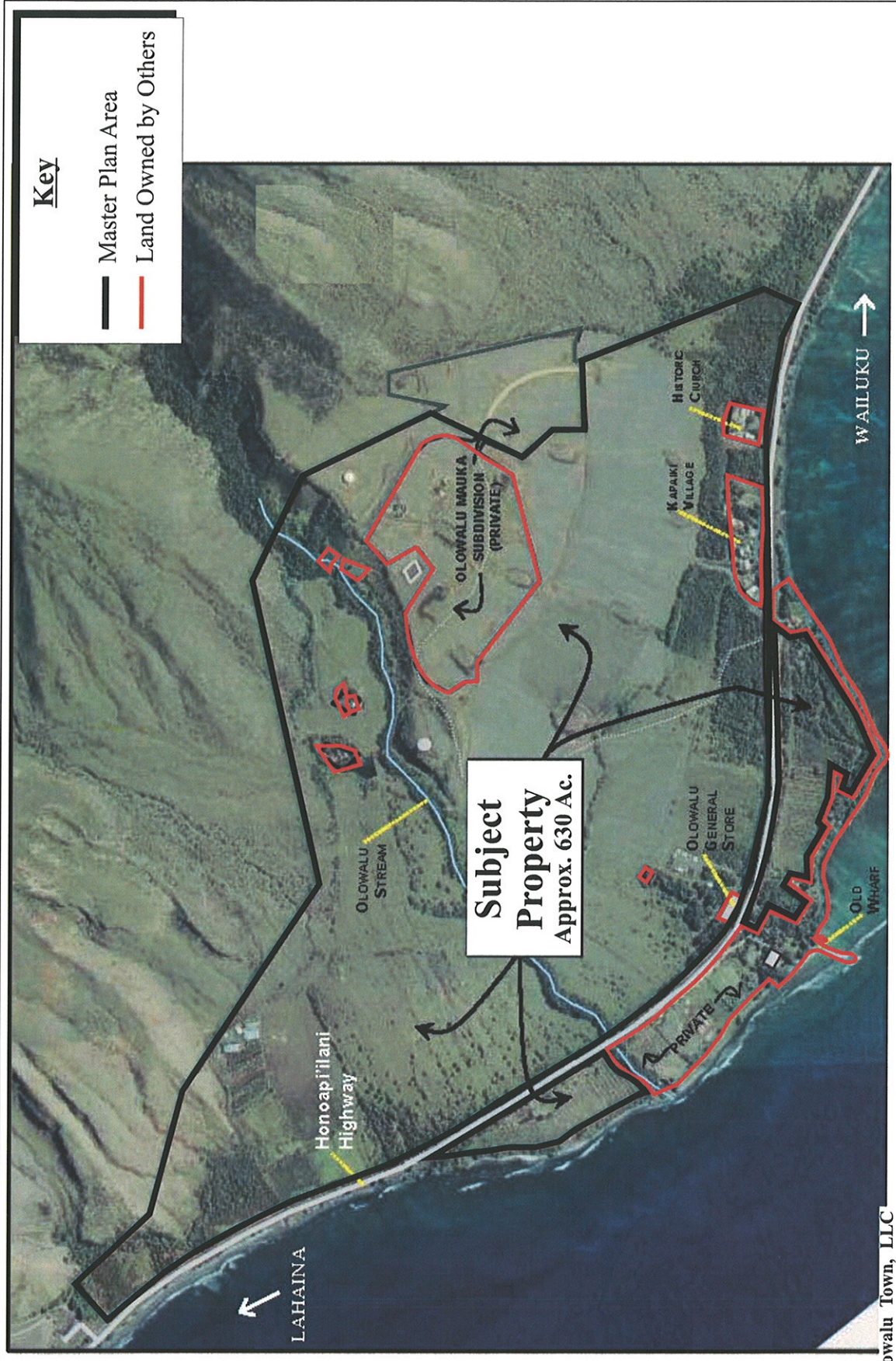
The Master Plan area is currently defined by twenty-two (22) agricultural parcels and five (5) roadway lots, encompassing approximately 636.48 acres, as depicted in **Figure 3**. Tax Map Key identification assignments for each of the twenty-two (22) lots are summarized in **Table 1**.



Source: U.S. Geological Survey

**Figure 1** Proposed Olowalu Town Master Plan Regional Location Map





Source: Olowalu Town, LLC

Figure 2

Proposed Olowalu Town Master Plan  
Aerial Photograph of Project Site

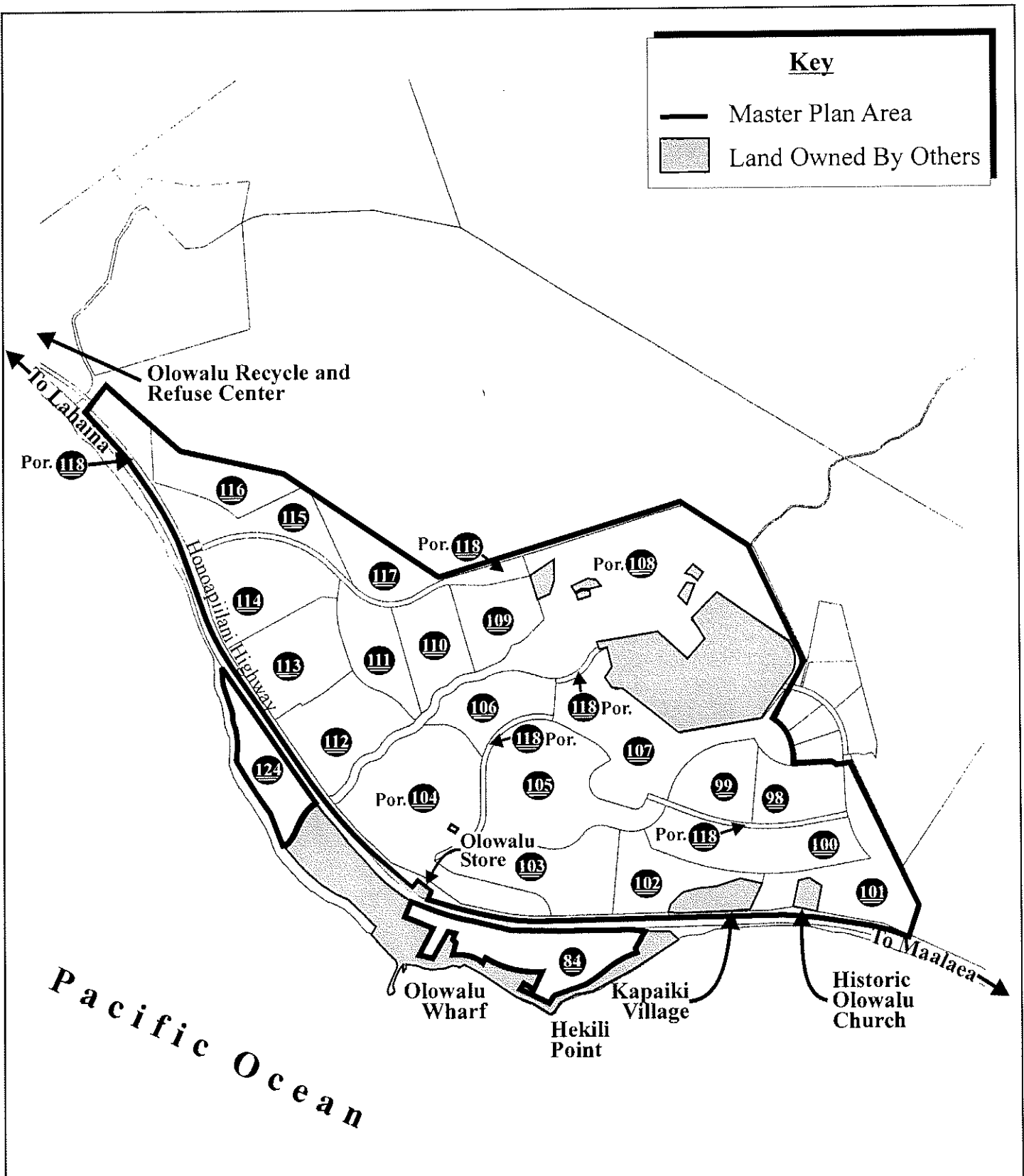
NOT TO SCALE



Prepared for: Olowalu Town, LLC and Olowalu Ekolu, LLC



Olowalu Town/MasterP/aerialphoto



Source: County of Maui, Real Property Tax Division

Figure 3

Proposed Olowalu Town  
Master Plan  
Tax Map Parcel Designations

NOT TO SCALE





**Table 1. Olowalu Town Master Plan Parcel Identification Summary**

<b>Tax Map Key</b>	<b>Acres</b>	<b>Tax Map Key</b>	<b>Acres</b>
4-8-003:084	28.871	4-8-003:109	16.167
4-8-003:098	15.027	4-8-003:110	17.220
4-8-003:099	15.575	4-8-003:111	16.582
4-8-003:100	27.113	4-8-003:112	24.610
4-8-003:101	29.379	4-8-003:113	25.211
4-8-003:102	16.881	4-8-003:114	28.839
4-8-003:103	27.799	4-8-003:115	26.184
4-8-003:104 (por)	50.301	4-8-003:116	16.038
4-8-003:105	40.734	4-8-003:117	15.589
4-8-003:106	16.677	4-8-003:118 (por) (Roadway Lots)	8.285 (35) 3.279 (36) 3.229 (37) 5.730 (38) 22.186 (39)
4-8-003:107	41.143	4-8-003:124	16.086
4-8-003:108 (por)	81.745	<b>Total</b>	<b>636.48</b>

## **B. BACKGROUND**

### **1. History**

Olowalu has a long history from ancient Hawaii to the present spanning several diverse cultures. In ancient times, it has been suggested by some historians that Olowalu was renowned as a sanctuary for anyone fleeing oppression and was known as a Puu Honua (land of refuge or sanctuary). Persons pursued for committing an offense were untouchable once they stepped inside its borders.

Olowalu’s gently sloping plains were cultivated, both by early Hawaiian planters and modern sugar cane planters, and have long been an area for habitation. Traditional Hawaiian crops, such as taro, sweet potato and breadfruit, were replaced by sugar cane in modern times.

Remnants of Hawaiian historical and cultural sites and features, including agriculture, are preserved in the Olowalu Cultural Reserve which spans from the mountains to the ocean along the present alignment of Olowalu Stream. Structures and sites associated with modern times include fallow sugar cane fields and irrigation systems, the Olowalu Mill site and wharf, the historic Olowalu Church, Camp Olowalu (formerly Camp Pecusa), Olowalu Store, and the former plantation manager's house and plantation houses located on the makai side of Honoapiilani Highway, and Kapaiki Village.

Olowalu Town is presently a small residential community with limited services available to residents. The ocean recreational resources of Olowalu attract both island residents and visitors to the area as observed by the number of people enjoying the ocean.

## 2. Community-Based Planning

In November 2005, the applicants conducted a week-long community-based planning workshop, which included participation by residents of Olowalu and Maui Island. The goal was to involve the community in the initial planning process for Olowalu Town, which was in advance of the General Plan Update initiated by the County of Maui in 2006. Sixty-five thousand (65,000) *Olowalu Talk Story* newspapers were mailed to every mailbox on the island ahead of the workshop. Over 1,350 people participated in *Olowalu Talk Story*, of which 51 percent were long-standing residents who lived on Maui for more than 20 years. See **Appendix "B"**.

The workshop format started with input from the participants during the planning and design workshop and included residents, professionals, town planners, and government agencies with valuable knowledge and experiences. Project plans were continuously evaluated, assessed, and updated to incorporate the views of the participants and their stated desires in order to preserve Maui's quality of life, provide affordable housing for local residents, and preserve natural resources.

Since 2005, the applicants have continued the community-based planning process and continued to meet with neighborhood boards, community organizations, non-profit groups, and elected and appointed government officials through community presentations, dialogue and feedback. In July 2007, Olowalu Town, LLC published and mailed a 12-page newspaper to every postal address on Maui to provide an update on the results of *Olowalu Talk Story*, and sought additional community

feedback. The proposed conceptual Master Plan is the culmination of this extensive community-based planning process.

### **C. PROPOSED ACTION**

Olowalu Town was once a thriving traditional plantation community. The applicants propose the Olowalu Town Master Plan (“Master Plan”), which will serve to guide the re-establishment of a small-scale community involving the approximate 636.48-acre property under their ownership. The Master Plan is designed to be a pedestrian-friendly community which will allow residents to live within walking distance of corner stores, schools, parks, employment opportunities, gathering centers, beaches/shoreline, and other social and civic resources, ultimately reducing reliance on automobiles. This “mixed-use community” will provide for a wide series of uses, including residential, commercial/business, agricultural, civic, social, parks, and open-space. Land uses will be categorized into a range of zones which will transition from the central neighborhood town centers (i.e. urban) to rural to agricultural to natural. See **Figure 4**. Typical land uses appropriate for each zone and the distribution of the approximate number of dwelling units for each are outlined in **Table 2**.





Source: Olowalu Town, LLC

**Figure 4** Proposed Olowalu Town Master Plan  
 Conceptual Master Plan



NOT TO SCALE



Prepared for: Olowalu Town, LLC and Olowalu Ekolu, LLC

**Table 2. Master Plan Land Use Allocation Summary**

Land Use Category	Approximate Acreage	Approximate Percentage	Typical Uses	Approximate Distribution of Dwelling Units
Urban (Neighborhood Town Centers)	160 to 175	25% to 30%	Higher density mixed-use: single-family homes on small lots, multi-family apartments, town-houses, office/retail, restaurants, live-work units (flex house), small scale lodging, town greens, pocket parks, playgrounds, plazas/squares, bikeways, greenways	1,200 to 1,350 units (85% to 90%)
Rural	135 to 145	20% to 25%	Medium to low density rural residential: single family homes on ½ acre or larger lots, parks, bikeways, greenways	150 to 225 units (10% to 15%)
Agriculture	35 to 45	5% to 10%	Agricultural farmsteads and dwellings, community gardens	15 to 45 units (1% to 5%)
Natural	255 to 270	40% to 45%	Active/passive parks, gathering facilities, greenways, bikeways, trails, ball fields, open-space	N/A
Civic	20 to 30	3% to 5%	Police, fire, medical, educational facilities, library, community and cultural centers, outdoor amphitheater	
<b>TOTAL</b>	<b>635</b>			<b>Approximately 1,500 units</b>

The Olowalu community will consist of approximately 1,500 residential dwelling units to be built concurrent with appropriate infrastructure in phases spread out over a period of approximately 30 years. The majority of the dwelling units will be located within the urban zones where residents will have easy access to daily goods and services. There will be a variety of single-family and multi-family dwelling types in the Master Plan, including houses, apartments, flex house (live-work), cottages, rural homes and farmsteads which will be offered at a wide-range of income levels, including both rental and fee-ownership.

The various types of dwelling units to be included in the Master Plan are listed and described in **Table 3**. A substantial portion of the homes are planned for much-needed affordable housing and senior living.

**Table 3.** Olowalu Town Master Plan Residential Housing Types

District	Dwelling Types
Urban (Neighborhood Town Center)	Higher density single-family dwellings on 5,000 to 10,000 sq. ft. lots, cottages, townhouses, multi-family apartments (low and medium density), and flex house (live/work)
Rural	Medium to low density single-family dwellings on minimum half (0.5) acre lots; accessory dwellings
Agricultural	Farm dwellings on minimum two (2) acre lots

The Master Plan has been developed using sustainable land use principles and new urbanism concepts which seek to balance the needs of Maui’s growing families, yet maintaining and respecting the cultural, historical and natural resources of the Olowalu community. These principles are summarized in **Table 4**.

**Table 4. Olowalu Town Master Plan Planning and Design Considerations**

Community Planning	Economic Sustainability	Natural Resources
<ul style="list-style-type: none"> <li>• Design small scale neighborhoods where neighbors know each other</li> <li>• Provide a wide range of housing types for all income levels and all stages of life</li> <li>• Include community centers, meeting halls, and educational facilities close to homes</li> <li>• Preserve historic and cultural resources to learn from the past</li> <li>• Include social services, civic amenities, non-profit groups, and emergency services</li> </ul>	<ul style="list-style-type: none"> <li>• Promote small shops, offices, and services that serve the daily needs of the community</li> <li>• Include live/work units, office rentals, and office support systems</li> <li>• Provide financial incentives for desired locally owned stores with emphasis on selling local goods</li> <li>• Incorporate state of the art technology, communications, and high-speed connectivity</li> </ul>	<ul style="list-style-type: none"> <li>• Provide recreational opportunities for good health and well-being</li> <li>• Include innovative green infrastructure systems to minimize impacts upon natural resources</li> <li>• Utilize efficient land use that preserves open space and reduces the community’s ecological footprint</li> <li>• Exceed governmental storm water requirements to protect nearshore water quality and shoreline ecosystems</li> <li>• Encourage landscaping with native plants that require less water</li> <li>• Incorporate U.S. Green Building Standards using programs such as, the Leadership in Energy and Environmental Design (LEED) rating system to help conserve energy, fuel, and operating costs</li> </ul>

Workforce housing will be provided in keeping with requirements of Chapter 2.96 of the Maui County Code relating to Residential Workforce Housing Policy. The Draft EIS will detail the anticipated workforce housing allocations by income categories.

Other Master Plan components include neighborhood town centers intended to provide opportunities for local businesses to service the residents of Olowalu Town, as well as visitors passing through. Spaces for community support facilities, including areas designated for public/quasi-public facilities will also be provided. Such facilities would include police and fire stations, educational facilities, a cultural center, a library, and spaces for non-profit organizations. The Master Plan also recognizes the importance of set-asides for open space and parks (both active and passive) to establish balance in land use and life quality parameters. In this context, the existing Olowalu Cultural Reserve will be enhanced with a mauka-makai trail system.

To ensure development sustainability, the Master Plan calls for the use of state-of-the-art engineering and design principles for water, wastewater, drainage, and energy systems. Drinking water, for example, will be provided by an existing private water system which draws from the Olowalu aquifer which is estimated to have a sustainable yield of 2.0 million gallons per day (MGD), and thus having the capacity to meet the Master Plan's estimated 750,000 gallons per day (gpd) requirement. Wastewater treatment and disposal will be provided via small privately owned and operated treatment plants which will yield R-1 quality water for irrigation to be used to meet future irrigation demands of the community. Utilizing the R-1 treated water for irrigation purposes will minimize the need for injection wells. Drainage systems will be designed to meet or exceed County standards and will include the use of Best Management Practices, or BMPs, to mitigate impacts to shoreline areas. All underground piping required for water, wastewater, and drainage systems implementation will be either within roadway rights-of-way or designated easements. The Draft EIS will include a Preliminary Engineering Report and Preliminary Drainage Report detailing further the design concepts envisioned for these infrastructure components.

A significant infrastructure component of the Master Plan is the proposed relocation of Honoapiilani Highway along a mauka alignment to provide a route which is consistent with the County of Maui's proposed Pali to Puamana Master Plan. The mauka realignment of Honoapiilani Highway will facilitate the State and County's vision to move the highway inland, away from its existing, more environmentally sensitive coastal alignment. The Draft EIS will include a Traffic Impact Analysis Report which will discuss the traffic impacts and mitigation opportunities associated with the relocated Honoapiilani Highway.

#### **D. PROJECT NEED**

The proposed Master Plan is seeking to increase the supply of available housing for local residents, particularly the supply of affordable and senior housing units, at a time when housing is both expensive and in short supply on Maui. Over recent years, both resident and non-resident (offshore) demand for housing on Maui, in particular West Maui, has intensified due to increased population growth and historically low interest rates. This strong demand, coupled with limited supply, has led to rising housing prices. The median sales price of a single-family house and lot in West Maui from January to November 2009 was \$650,000.00 and \$410,000.00 for condominiums. The housing market representative of the Master Plan is Lahaina Town. In Lahaina Town, median sales price for a single-family house and lot was \$650,000.00 and \$410,000.00 for a condominium (Realtors Association of Maui, January 2010).

The County of Maui, Socio-Economic Forecast (2006) estimates that total housing demand on Maui Island will increase from 49,869 units in 2005 to 84,351 units in 2030, an increase of approximately 69 percent over 25 years. In the West Maui region, it is estimated that the total housing demand will increase from 7,121 units to 11,369 units. The Hawaii Housing Policy Update 2003 estimates that an additional 4,072 resident housing units will be needed by 2010 to meet projected demand. According to the 2003 study, this number is anticipated to further increase to a 4,225-unit deficit in the supply of housing units on Maui by the Year 2020, based on production and population forecasts (SMS, 2003).

The proposed Master Plan responds to the need to provide housing opportunities to Maui residents in both the near and long term. The project will serve to meet the varied housing needs of Maui, at an attractive location in Olowalu. The product choices being proposed will provide healthy competition and allow for a more balanced housing market. In light of current and projected housing market conditions and prices, the proposed Master Plan is considered to provide a significant community benefit by offering Maui residents new opportunities to secure affordable housing products, as well as business opportunities to small business owners living within the proposed live/work units.

## **E. ENTITLEMENTS REQUIRED**

The proposed Master Plan will require several land use entitlement approvals to proceed. A summary of the current land use designations, as well as entitlements to be sought for the project, is provided below:

### **1. State Land Use District Boundary Amendment**

The current State Land Use designation for the majority of the Master Plan area is “Agricultural”. Portions of the Master Plan area at the mauka extent of the property, as well as makai of Honoapiilani Highway along the shoreline, fall within the “Conservation” District. See **Figure 5**.

A State Land Use District Boundary Amendment (DBA) from the “Agricultural” to the “Urban” district and “Rural” district will be required for a portion of the property in order to implement the rural residential and urban town center. The DBA petition to the State Land Use Commission will be prepared pursuant to Chapter 205, Hawaii Revised Statutes (HRS), and the Land Use Commission Rules of the State of Hawaii found in Title 15, Subtitle 3, Chapter 15 of the Hawaii Administrative Rules.



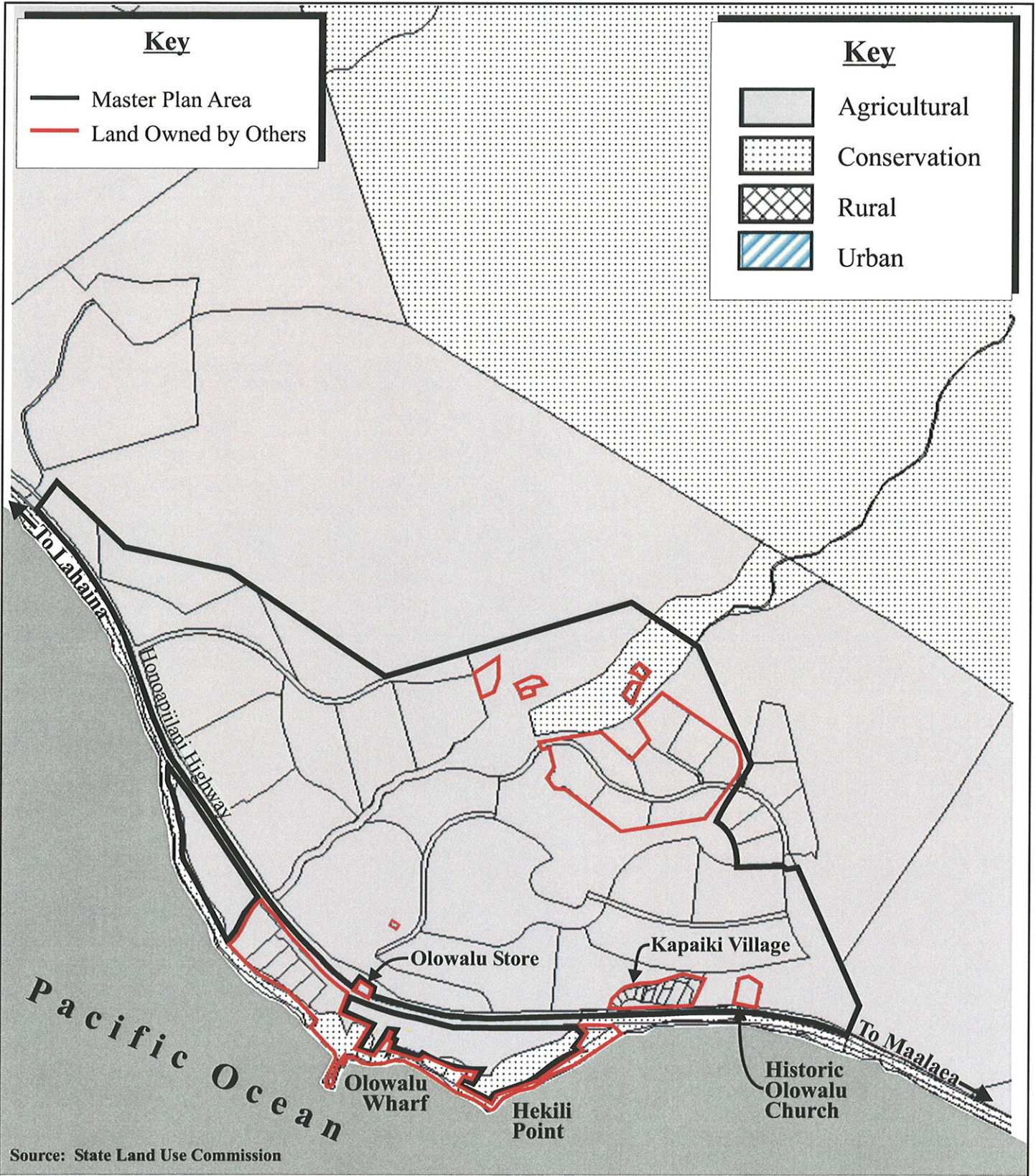


Figure 5

Proposed Olowalu Town  
Master Plan  
State Land Use Designations

NOT TO SCALE





## 2. West Maui Community Plan Amendment

The majority of the Master Plan area is currently designated as “Agriculture” by the West Maui Community Plan with portions designated “Conservation”, “Park”, and “Open Space”. See **Figure 6**. A West Maui Community Plan Amendment (CPA) will be required to establish the land use categories delineated by the Master Plan.

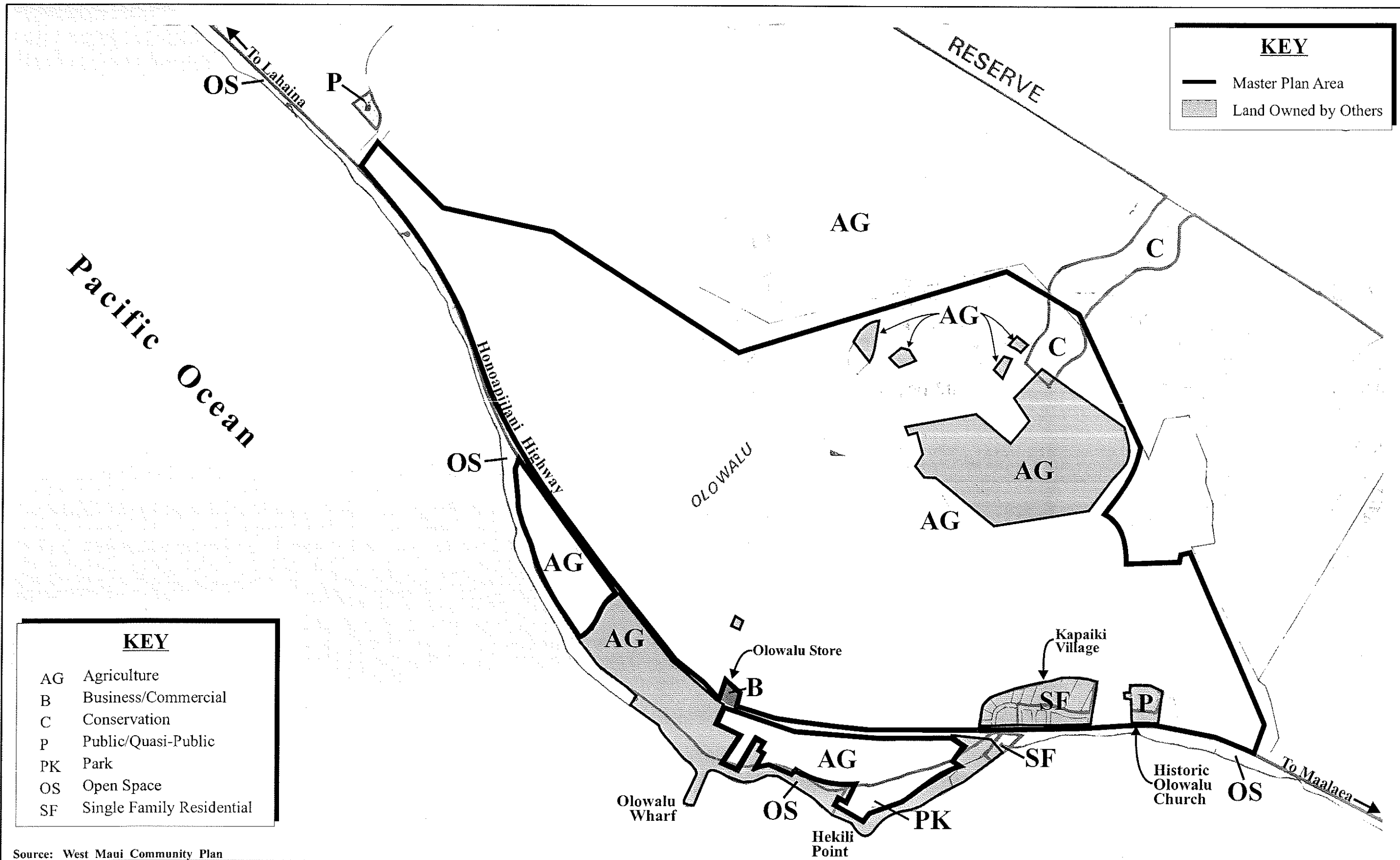
The CPA will be required to change the current land use designations to “Project District”. The Project District designation is considered appropriate to provide flexibility in detailed site planning and flexibility in establishing performance standards for land use implementation as a traditional neighborhood following the principles of “New Urbanism”. The Olowalu Town Project District is envisioned as a mixed use community of varied housing products from medium density multi-family units to larger agricultural farm lots. The proposed Master Plan includes an economic base to support the residential community, including opportunities for agriculture, support services, and entrepreneurial enterprises.

## 3. Change in Zoning

The Master Plan area is currently zoned “Agricultural”, “R-3 Residential”, and “A-3 Apartment” district by the County of Maui. In keeping with the proposed Community Plan Project District land use designation, a County change in zoning will be required to establish Project District zoning for the Master Plan area. In this regard, Project District Phase I approval will be required to set forth zoning performance standards for the Master Plan area. Project District Phase II and Phase III approvals will also be needed as part of the implementation phase of regulatory review.

The Olowalu Town Project District proposes to use the “SmartCode” principles which is a form-based zoning code that integrates the detailed standards of zoning, subdivision, urban design, public services, infrastructure, transportation, landscaping, and ecology. The SmartCode uses “Transect Zones” to assign a range of land uses, building types, thoroughfares, roadways, and civic space, into appropriate and compatible zones transitioning from urban to rural to agricultural to conservation.



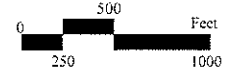


KEY	
AG	Agriculture
B	Business/Commercial
C	Conservation
P	Public/Quasi-Public
PK	Park
OS	Open Space
SF	Single Family Residential

Source: West Maui Community Plan

Figure 6

Proposed Olowalu Town Master Plan  
West Maui Community Plan Land Use Designations Map



MUNEKIYO & HIRAGA, INC.

**4. Special Management Area Use Permit**

In the Olowalu area, lands falling makai and a small portion mauka of Honoapiilani Highway are within the County of Maui’s Special Management Area (SMA). See **Figure 7**. As such, development actions falling within the SMA will require an SMA Use Permit from the Maui Planning Commission. The SMA approval process will be triggered with a specific development proposal as Master Plan implementation proceeds over time.

**F. CHAPTER 343, HAWAII REVISED STATUTES REQUIREMENTS**

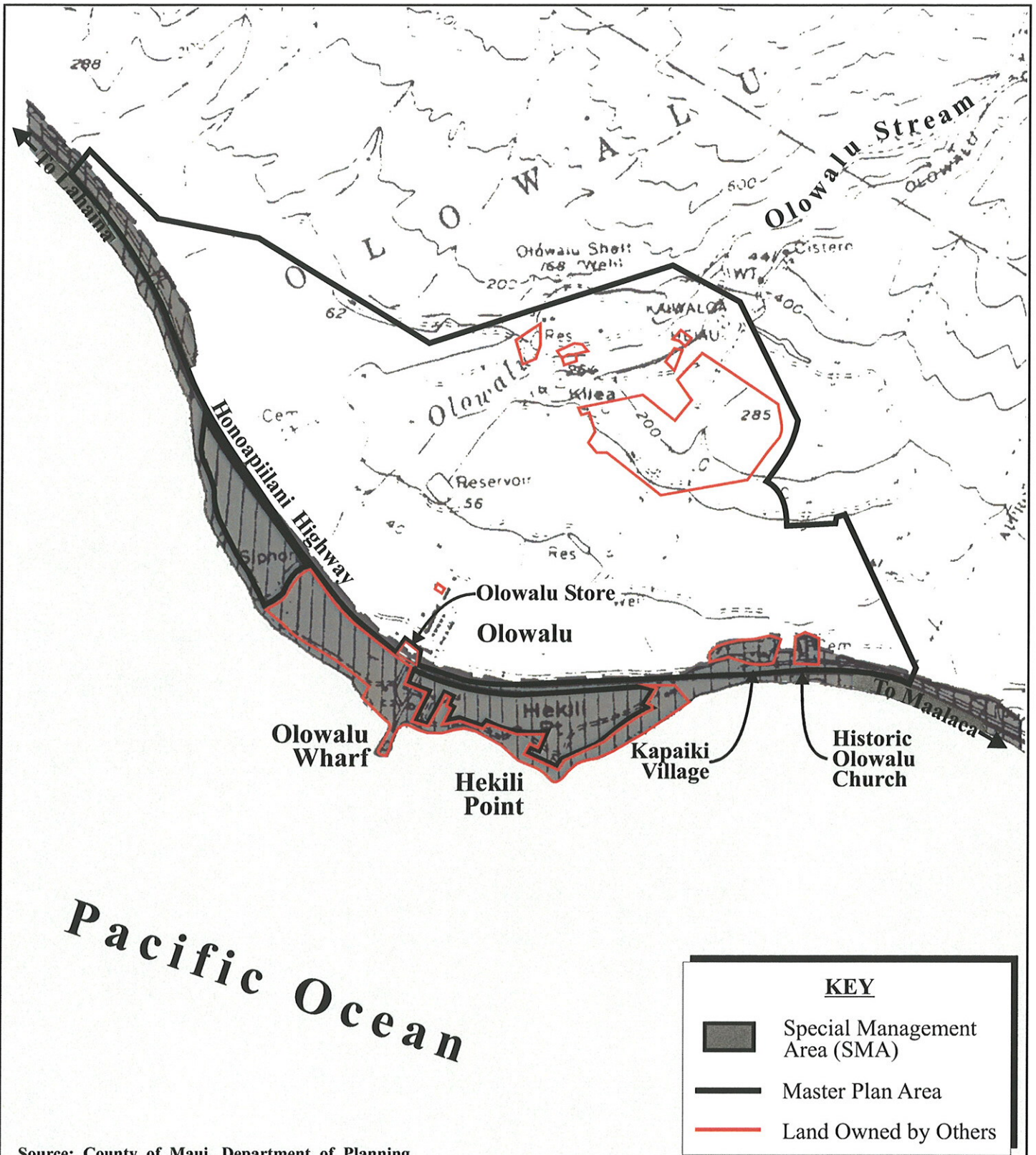
As noted above, the Master Plan will require an amendment to the West Maui Community Plan. In addition, utility system work and roadway improvements will affect the Honoapiilani Highway right-of-way, a State of Hawaii transportation facility. Wastewater treatment facilities are also proposed as part of the Master Plan’s infrastructure systems needed to service the plan area. These actions are triggers which require the preparation of environmental disclosure documentation pursuant to Chapter 343, Hawaii Revised Statutes and Chapter 200 of Title 11, Department of Health Administrative Rules, Environmental Impact Statement Rules. In light of the scope of the proposed Master Plan, an Environmental Impact Statement (EIS) is being prepared for the project. The State Land Use Commission will be the Accepting Authority for the EIS document.

**G. ANTICIPATED DEVELOPMENT SCHEDULE**

Master Plan implementation is envisioned to occur over an approximately 30-year time horizon, as summarized in **Table 5**.

**Table 5.** Olowalu Master Plan Preliminary Implementation Time Schedule

TASKS	TIME HORIZON
Permitting and Entitlements	2010 to 2012
Infrastructure Design and Construction	2013 to 2020
Implementation and Occupancy of Neighborhoods	2015 to 2040



Source: County of Maui, Department of Planning

Figure 7

Proposed Olowalu Town Master Plan

NOT TO SCALE

Special Management Area Boundary Map



## **II. DESCRIPTION OF THE EXISTING CONDITIONS, POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES**

## **II. DESCRIPTION OF THE EXISTING CONDITIONS, POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES**

### **A. PHYSICAL ENVIRONMENT**

#### **1. Existing and Surrounding Land Use**

##### **a. Existing Conditions**

The approximately 636.48-acre Olowalu Master Plan area is located approximately fourteen (14) miles from Wailuku and four (4) miles from Lahaina Town.

In a regional context, Olowalu has historically been a settlement area. Prior to western contact it is estimated that up to 2,000 Hawaiians were living and thriving in Olowalu. As recently as 1930, Olowalu was a thriving plantation town which included employment related to the agricultural use of the land, housing for employees, a school, medical facilities, stores, theater, recreational facilities and places of worship. Olowalu, during the hey-day of the plantation era, was a multi-cultural and multi-generational community. The closure of the Olowalu Mill and the subsequent relocation and consolidation of mill operations to Lahaina town marked the decline of the once thriving Olowalu community.

Prior to 1999 and the closure of Pioneer Mill, significant acreages of lands within the Olowalu area were cultivated in sugar cane. Today, land uses found in Olowalu include historic Olowalu Church, Olowalu General Store, Camp Olowalu (formerly known as Camp Pecusa), Olowalu Cultural Reserve, and Kapaiki Village, encompassing single-family residences reminiscent of the plantation era of the Olowalu area. The former plantation manager's residence and other plantation-era single-family residences are located makai of Honoapiilani Highway, across Olowalu General Store. The Olowalu Mill Site and Olowalu Wharf (consisting of a pier and breakwater)

formerly used for the loading and unloading of sugar into barges, are located along the shoreline.

Subdivision of portions of Olowalu have been completed with some parcels sold to individual purchasers. These include the Olowalu Makai Komohana Subdivision, Olowalu Makai Hikina Subdivision, and the Olowalu Mauka Subdivision. While a majority of the former lands used for sugar cane cultivation now lie fallow, agricultural endeavors exist on portions of the Olowalu lands. Other uses include small scale farming, Kapaiki Village, historic Olowalu Church, Camp Olowalu, special functions at the former Olowalu Manager's house, and the Olowalu Cultural Reserve.

**b. Potential Impacts and Mitigation Measures**

The proposed action calls for the re-establishment of Olowalu Town as a sustainable master-planned community offering approximately 1,500 residential units to be implemented in phases spanning approximately 30 years. The land use principles employed in the planning and design of the proposed Olowalu Town Master Plan are intended to address quality of life, economic sustainability, environmental protection and preservation parameters. The Draft EIS will examine land use compatibility issues in further detail, including the relationship of proposed land use spatial patterns and allocations with respect to the existing commercial and residential areas. In addition, infrastructure support systems needed for project implementation, as well as policies drawn from land use plans, policies, and controls will be evaluated.

**2. Climate**

**a. Existing Conditions**

Maui is characterized by a semi-tropical climate containing a multitude of individual microclimates. The mean annual temperature of the island is about 77 degrees Fahrenheit. A high proportion of the rainfall that Maui receives each year falls on the northeast facing shores leaving the south and west coastal areas relatively dry. The Master Plan area is located within one of these drier areas of West Maui.

Olowalu is generally sunny, warm and dry throughout the entire year. Annual temperatures in the region average in the mid to high 70's (Maui County Data Book, 2008). June through September are historically the warmer months of the year, while the cooler months are December through March. During the summer months, average daily temperatures in the region typically range from the mid-70's to the high 70's.

Average rainfall distribution in the region averages approximately fifteen (15) inches per year (Maui County Data Book, 2008). Rainfall in the Olowalu region is highly seasonal, with most of the precipitation occurring in the winter months. Between October and March, the southerly winds of Kona storms may be experienced.

**b. Potential Impacts and Mitigation Measures**

From an environmental standpoint, replacement of vegetative surfaces with hardscapes associated with roadways, housing units, and commercial buildings may yield a tendency towards slightly increasing ambient air temperatures. To address this so-called "heat island" effect, open spaces and park lands are integrated as significant components of the Master Plan. Further, landscape designs and planting plans will be employed to provide shading. Building designs, as well, will utilize green building principles following the Leadership in Energy and Environmental Design (LEED) Neighborhood Development standards which take advantage of solar and natural wind conditions within the Master Plan area. The Master Plan proposes to utilize Olowalu's abundance of direct exposure to the sun as a sustainable source of solar energy and photovoltaic energy. With respect to the current land cover characteristics within the area, the development of Olowalu Town is not anticipated to create adverse impacts to the area's microclimate.

**3. Topography**

**a. Existing Conditions**

Most of the Olowalu area was formerly utilized for sugar cultivation and is now fallow. The topography of this area reflects the general topographical patterns of the West Maui region. Near the shoreline, the topography is

generally flat to slightly sloping. Proceeding mauka, the land slopes gently higher to the foothills of the West Maui mountains. Elevations in the Olowalu area generally range from sea level to approximately 400 feet above sea level. The topography of the Master Plan area encompasses a range of topographic conditions from the generally flat coastal area makai of Honoapiilani Highway, to steeper riverine conditions along Olowalu Stream. In general, the higher density residential areas and neighborhood town centers are planned for areas having favorable development slope conditions of less than four (4) percent.

The steep valleys and mountain slopes at the higher elevations serve as natural geographic boundaries to contain the project limits and prevent outward sprawl.

**b. Potential Impacts and Mitigation Measures**

Grading work will be undertaken to set roadway grades and adjacent grades of developable parcels. Future design work for the project will utilize existing topography to minimize grading of steep slopes and extensive cuts and fills. Significant landform transformations in terms of cut and fill requirements are not anticipated. All grading work will comply with applicable requirements of Chapter 20.08, Soil Erosion and Sedimentation of the Maui County Code. The proposed project will not present any significant adverse impacts on the existing topography and landform of the surrounding area.












**4. Soils and Agricultural Land Characteristics**

**a. Existing Conditions**

Underlying the Master Plan area is the Pulehu-Ewa-Jaucas association. See **Figure 8**. This series consist of well-drained soils on alluvial fans and stream terraces and in basins. These soils were developed in alluvium washed from basic igneous rock. The soil types specific to the area are delineated in **Figure 9**. General characteristics of these soil types are presented in **Table 6**.



# LEGEND

- |  |   |
|--|---|
|  ① Pulehu-Ewa-Jaucas association                |  ⑦ Hana-Makaalae-Kailua association  |
|  ② Waiakoa-Keahua-Molokai association           |  ⑧ Pauwela-Haiku association         |
|  ③ Honolua-Olelo association                    |  ⑨ Laumaia-Kaipoi-Olinda association |
|  ④ Rock land-Rough mountainous land association |  ⑩ Keawakapu-Makena association      |
|  ⑤ Puu Pa-Kula-Pane association                 |  ⑪ Kamaole-Oanapuka association      |
|  ⑥ Hydrandepts-Tropaquods association           |   |

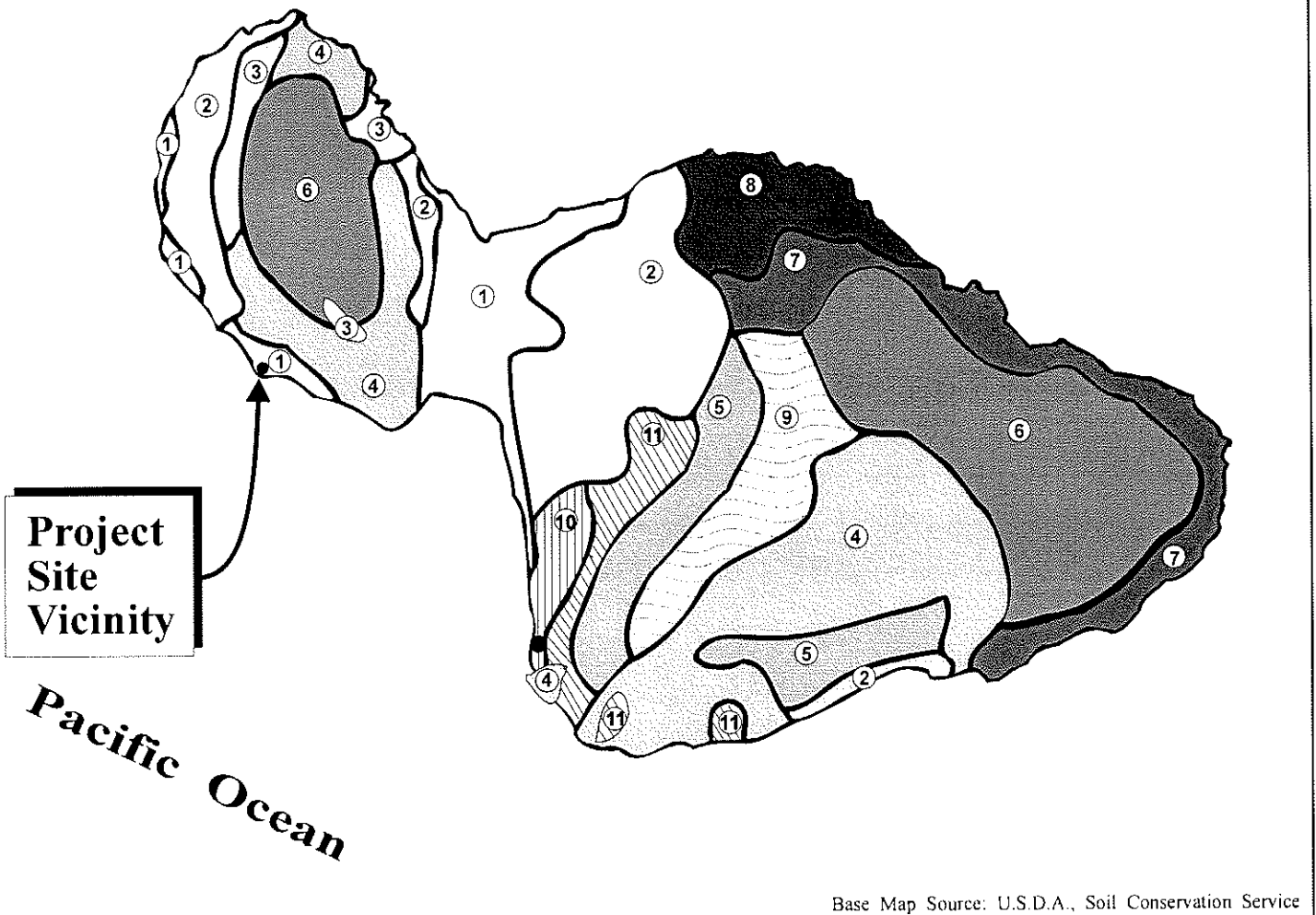


Figure 8

## Proposed Olowalu Town Master Plan Soil Association Map

NOT TO SCALE





**Table 6. Olowalu Town Master Plan Soil Series Summary**

Soil Series	General Soil Characteristics
Ewa Silty Clay Loam, 0-3 percent slopes (EaA)	Runoff is very slow and erosion hazard is no more than slight.
Jaucas Sand, 0-15 percent slopes (JaC)	Soil is neutral to moderately alkaline; permeability is rapid, and runoff is very slow to slow; hazard of water erosion is slight, but wind erosion is a severe hazard where vegetation has been removed.
Kealia Silt Loam (kMW)	Soil is poorly drained and has a high content of salt. Ponding occurs in low areas after a heavy rain. Slopes range from 0 to 1 percent.
Pulehu Clay Loam, 0-3 percent slopes (PsA)	Soil is found on alluvial fans, and stream terraces and basins. Permeability is moderate, runoff is slow, and erosion hazard is no more than slight.
Pulehu Cobbly Clay Loam, 0-3 percent slopes (PtA)	This soil is similar to Pulehu clay loam (PsA) except that it is cobbly.
Pulehu Cobbly Clay Loam, 3-7 percent slopes (PtB)	On this soil, runoff is slow and erosion hazard is slight. Some areas have thin, stratified layers of sand and gravel at a depth of 20 to 36 inches.
Pulehu Silt Loam, 0-3 percent slopes (PpA)	This soil is similar to Pulehu clay loam (PsA), except that the texture is silt loam.
Rough Broken and Stony Land (rRS)	Consists of very steep and stony gulches. Runoff is rapid and geologic erosion is active.
Rock Land (rRK)	Made up of areas where exposed rock covers 25 to 90 percent of the surface. Rock outcrops and very shallow soils are the main characteristics.
Stony Alluvial Land (rSM)	Consists of stones, boulders, and soil deposited by streams along the bottom of gulches and on alluvial fans. In most places, slopes range from 3 to 15 percent.
Rock Outcrop (rRO)	Consists of areas where exposed bedrock covers more than 90 percent of the surface.
Wainee Extremely Stony Silty Clay, 7-15 percent slopes (Wyc).	This soil is moderately sloping and occurs on smooth, alluvial fans. Permeability is moderately rapid, runoff is slow to medium, and erosion hazard is slight to moderate.
Source: U.S. Department of Agriculture, Soil Conservation Service	

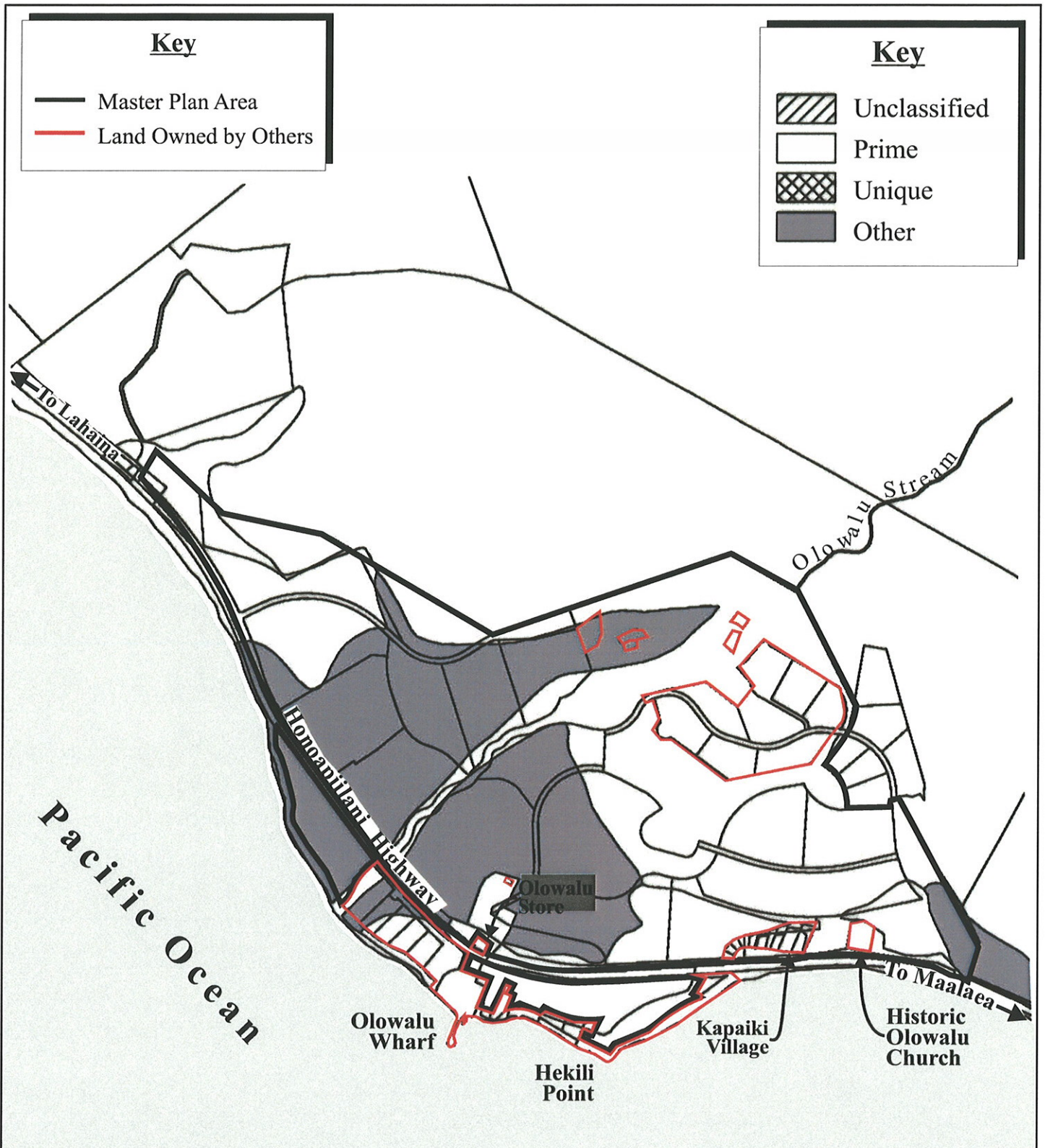
The majority of the Master Plan area is designated for agricultural use by both the State Land Use Commission and County of Maui zoning. Lands in the Olowalu area were formerly used to support the growing of sugar cane during much of the 19<sup>th</sup> and 20<sup>th</sup> centuries. At present, however, the vast majority of the area lies vacant and undeveloped.

In 1977, the State Department of Agriculture developed a classification system to identify Agricultural Lands of Importance to the State of Hawaii (ALISH). The classification system is based primarily, though not exclusively, upon the soil characteristics of the lands. The three (3) classes of ALISH lands are: “Prime”, “Unique”, and “Other”, with all remaining lands termed “Unclassified”. When utilized with modern farming methods, “Prime” agricultural lands have a soil quality, growing season, and moisture supply necessary to produce sustained crop yields economically. “Unique” agricultural lands possess a combination of soil quality, growing season, and moisture supply to produce sustained high yields of a specific crop. “Other” agricultural lands include those that have not been rated as “Prime” or “Unique”.

Analysis of the ALISH map for the Olowalu area indicates that the Master Plan area consists of lands that have been defined as “Prime” and “Other Important” agricultural lands. See **Figure 10**.

The University of Hawaii, Land Study Bureau (LSB) developed the Overall Productivity Rating, in association with the Detailed Land Classification for the island of Maui, which classifies soils according to five (5) levels, with “A” representing the class of highest productivity soils and “E” representing the lowest. These letters are followed by numbers which further classify the soil types by conveying such information as texture, drainage, and stoniness.

The Master Plan area is located on lands primarily designated as “A7li”, “B72i”, “B87i”, “E73” and “E95” by the LSB. See **Figure 11**. The “A” and “B” designations reflect lands at the higher range of productivity. The specific designation of “A7li” indicates that these lands are non-stony, moderately fine and well-drained, while the “B72i” designation reflects lands which are stony, moderately fine and well-drained. The “B87i” category are lands which are characterized as stony to very stony, fine and well-drained.



Source: State of Hawai'i, Department of Agriculture

Figure 10

Proposed Olowalu Town Master Plan

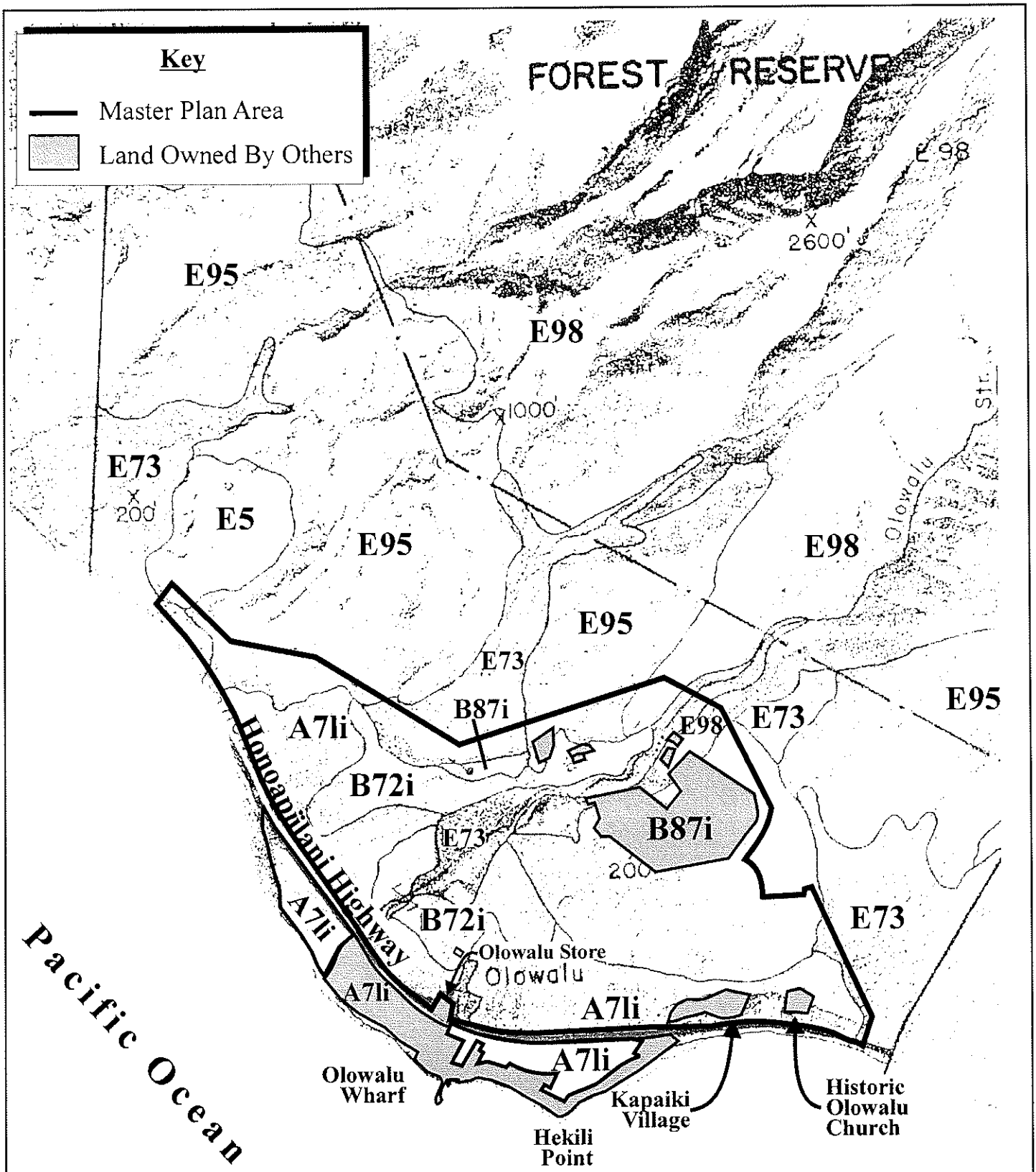
NOT TO SCALE



Agricultural Lands of Importance to the State of Hawaii (ALISH) Map



Prepared for: Olowalu Town, LLC and Olowalu Ekolu, LLC



Source: Land Study Bureau

Figure 11

Proposed Olowalu Town  
Master Plan  
Land Study Bureau Land  
Classifications Map

NOT TO SCALE





The "E73" category reflects lands with rocky and well-drained conditions. Finally, areas designated as "E95" are typified as non-stony to rocky and well-drained.

**b. Potential Impacts and Mitigation Measures**

The Master Plan area, for the most part, lies within the State Agricultural district and is largely designated for agricultural uses by the West Maui Community Plan and Maui County zoning. The proposed project will involve the use of approximately 636.48 acres of land of which approximately 35 to 45 acres will remain in agriculture.

Additionally, the area of the existing Olowalu Cultural Reserve will be increased from approximately 75 acres to approximately 110 acres and will provide an opportunity to cultivate traditional native crops, such as taro. Within the traditional neighborhoods future residents will be given the opportunity to utilize the prime agricultural lands through the establishment of "neighborhood or community gardens" to supplement self-sustainability in terms of communities growing their own food.

While there are a range of soil series types found on the property, land uses will be compatible with the underlying soil types. Inasmuch as lands currently having agricultural land use designations are encompassed as part of the Master Plan area, an agricultural impact assessment will be conducted. Results of the assessment will be presented and discussed in the Draft EIS.

Grading activities will be undertaken prior to the initiation of construction for the proposed project. Best Management Practices will be implemented both prior to and during grading and construction to minimize opportunities for soil erosion at the site. Upon completion of construction, landscaping will be installed which will stabilize the ground on a permanent basis. With implementation of the foregoing mitigation measures, the proposed project is not anticipated to present significant adverse impacts on soil conditions within the Master Plan area. Moreover, the soil types found on the property do not present any limitations to the constructability of the proposed Olowalu Town Master Plan project.

## 5. Flood and Tsunami Hazards

### a. Existing Conditions

The Master Plan area is located in Flood Zone “X” (unshaded), Zone “X” (shaded), Zone “A”, Zone “AE”, Zone “AO”, and Zone “VE”. Zone “X” (unshaded) is an area of minimal flooding, while Zone “X” (shaded) is an area of moderate flood hazard with average depths of less than 1 foot, usually the area between the limits of the 100-year and 500-year floods. Zone “X” (shaded) is located on the outer fringes of Olowalu Stream. Zone “A” are areas with a 1 percent chance of flooding, Zone “AE” is the base floodplain where base flood elevations are provided, and Zone “AO” is river or stream flood hazard areas and areas with a 1 percent or greater chance of shallow flooding with a depth of 1 foot. Zones “A”, “AE” and “AO” are located along the shoreline and along Olowalu Stream and Gulch. Zone “VE” is located along the shoreline and are coastal areas with a 1 percent or greater chance of flooding and an additional hazard from storm waves. The flood elevation in this area is 7 feet above mean sea level (msl). See **Figure 12**.

The tsunami evacuation zone for Olowalu is the area seaward (makai) of Honoapiilani Highway near Olowalu General Store. The zone moves 400 feet mauka of the highway in areas where the highway is close to the shoreline. The sloping topography of the mauka lands provides higher ground for evacuation purposes through the existing Olowalu roadways.

### b. Potential Impacts and Mitigation Measures

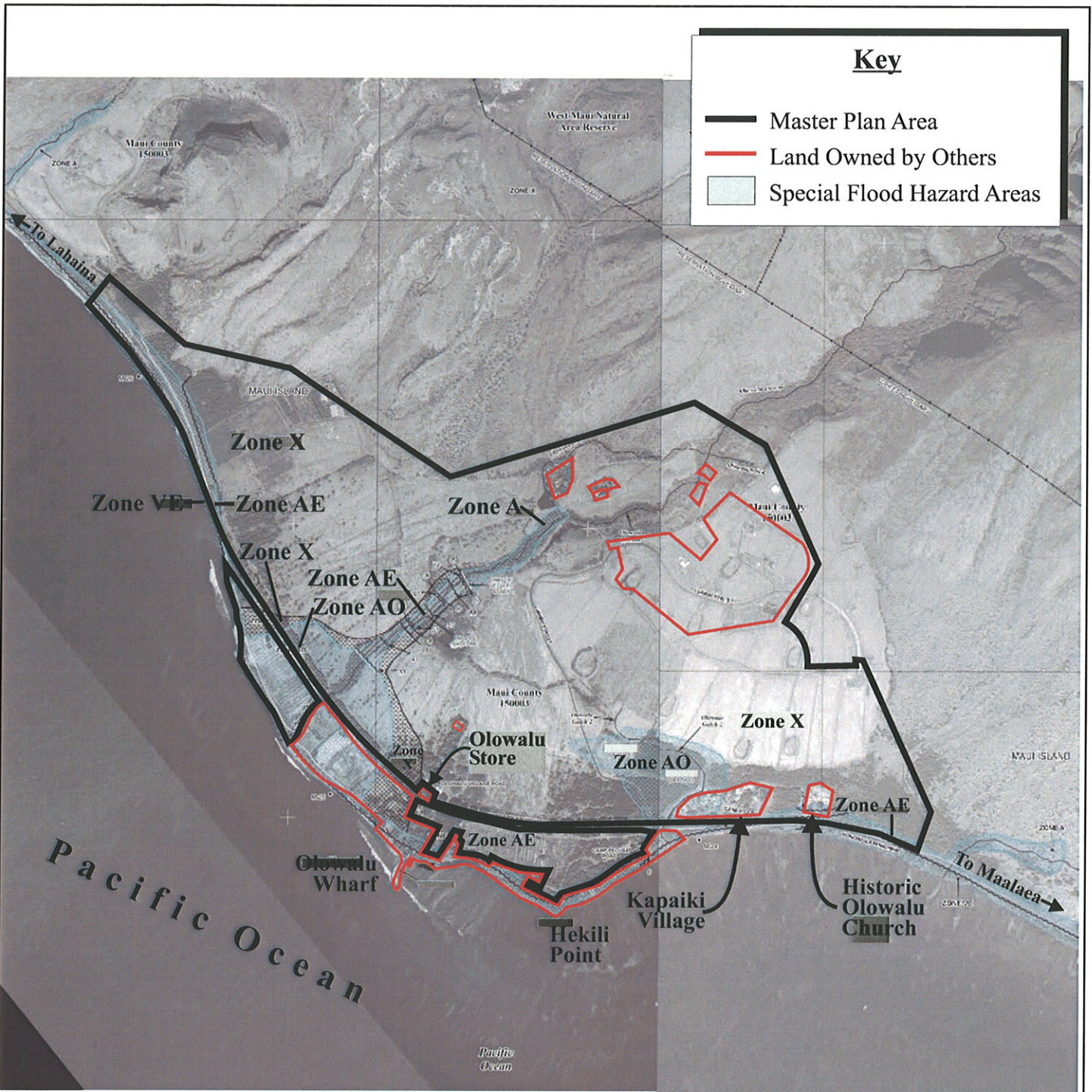
A Preliminary Drainage Report (PDR) will address hydrologic conditions affecting flood prone areas. Results of the PDR will be reported in the Draft EIS. Flood Hazard Area Development Permits, as applicable, will be obtained prior to the initiation of construction activities.

## 6. Flora and Fauna

### a. Existing Conditions

A botanical survey of the Olowalu area (including the Master Plan area) was conducted by Char & Associates (March 1999) in conjunction with a previous subdivision of the Olowalu lands by Olowalu Elua Associates LLC





Source: Federal Emergency Management Agency,  
FIRM Map Numbers 1500030531E and 150030532E

Figure 12

Proposed Olowalu Town  
Master Plan  
Flood Insurance Rate Map

NOT TO SCALE



MUNEKIYO & HIRAGA, INC.

Prepared for: Olowalu Town, LLC and Olowalu Ekolu, LLC

in 2000. In addition, a Biological Resources Survey was prepared by Robert W. Hobdy in 2005 for the Olowalu Makai-Komohana Subdivision which included Parcel 124 of the Olowalu Ekolu property. See **Appendix "A"**. Prior to 1999, between 85 to 90 percent of the surrounding Olowalu area was formerly under sugar cane cultivation, or was used to support sugar cane related activities (plantation village, manager's residence, wharf facilities, etc.). The steeper kiawe and buffelgrass-covered slopes on the higher slopes of the Olowalu area were used for grazing cattle at one time. Uncultivated areas of Olowalu are characterized by introduced species, such as kiawe, buffelgrass, opiuma, koa haole, and lantana, are the dominant components of the vegetation (Char & Associates, 1999).

Of a total of 115 plant species inventoried within the Olowalu study area, 94 (82 percent) are introduced or alien species; 5 (4 percent) are originally of Polynesian introduction; and 16 (14 percent) are native. Of the natives, 13 are indigenous, that is, they are native to the Hawaiian Islands and also found elsewhere, and 3 are endemic, that is, they are native only to the Hawaiian Islands. The 3 endemic species are the nehe (*Lipochaeta lavarum*), wiliwili (*Erythrina sandwicensis*), and pua kala (*Argemone glauca*). None of the plants inventoried on the site is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife Service, 1999). All of the plants can be found in similar dry, lowland habitats throughout the main Hawaiian Islands. A botanical survey for the Maalaea to Lahaina 69 kilovolt transmission line (Char, 1993) included portions of Olowalu and recorded similar findings.

Coastal vegetation in the Olowalu area occurs as a narrow band along the seaward front of the lands between the ocean and the Honoapiilani Highway. Formerly cultivated sugar cane (*saccharum officinarum*) fields are typically located mauka of this coastal vegetation zone.

In proximity to the Master Plan area, the beaches consist of rounded, waterworn basalt and bleached coral rubble. In places, a few pockets of grayish-colored, fine sand are found along the black and white colored cobble beaches. The coastal vegetation on this type of substrate consists of low, scattered mats of pohuehue or beach morning glory (*Ipomoea pes-caprae*) with clumps of buffelgrass (*Cenchrus ciliaris*), a few small wind-pruned trees

of kiawe (Prosopis pallida) and opiuma (Pithecellobium dulce), and small mixed patches of swollen fingergrass (Chloris barbata), uhaloa (Waltheria indica), koa haole (Leucaena leucocephala), and sourbush (Pluchea carolinensis). Where the Olowalu Stream nears the ocean, there is a berm of basalt boulders and coral rubble. A small pond surrounded by scattered patches of Australian saltbush (Atriplex semibaccata) and a few shrubs of hau (Hibiscus tiliaceus) and sourbush are found here.

Fauna present within the Olowalu area include a host of introduced species, including the Japanese White-eye (Zosterops japonicus), Zebra-dove (Geopelia striata), spotted dove (Streptopelia chinensis), and common Myna (Acridotheres tristis). According to the U. S. Fish and Wildlife Service, in 1989 the Hawaiian hoary bat (Lasiurus cinereus semotus) was sighted near Mopua, located at the eastern portion of the Master Plan area. In 2005, a special effort was made to find the Hawaiian hoary bat. No evidence of the hoary bat was found. However, it is noted that during the 2005 survey, a pair of nene (Nesochen Sandvicensis) and Aukuu (Nycticorax Nycticorax hoactli) were found on Parcel 124. Other mammals common to this area include rats, mice and mongoose.

**b. Potential Impacts and Mitigation Measures**

There are no known habitats of rare, endangered or threatened species of flora or fauna located within the Master Plan area. Although not observed during the 2005 Biological Resources Survey, appropriate mitigative measures will be incorporated into the project to minimize impacts on the Hawaiian hoary bat, such as shielding of outdoor lights. No significant adverse impacts on flora and fauna in the area are expected to be generated through implementation of the proposed Olowalu Town project. The applicant will utilize native Hawaiian and drought resistant species to the extent practicable in the landscaping of the Master Plan area.

The Olowalu Cultural Reserve is currently restoring taro fields (loi) in its restoration of native Hawaiian plants and agricultural practices which will be enhanced by the Olowalu Town Master Plan.



## 7. Streams and Reservoirs

### a. Existing Conditions

Olowalu Stream is classified as a perennial stream. Although stream flows year-round in the upper reaches, lower elevation flows are intermittent. Aquatic resources found in the Olowalu Stream include *oopu nakea* (*Awaous stamineus*) and *oopu nopili* (*Sicyopterus stimpsoni*) (Char 1999, Hawaii Stream Assessment, 1990). The Olowalu Cultural Reserve was established along the stream to preserve its archaeological and cultural values. The objectives and operational parameters of the Olowalu Cultural Reserve will be detailed in the Draft EIS.

In addition, the Master Plan area encompasses four (4) irrigation reservoirs which were constructed to support the past sugar cultivation activities of Pioneer Mill. Historically, approximately four (4) million gallons per day (mgd) of water were diverted from the Olowalu Stream.

Currently, Olowalu Stream serves as a source of nonpotable water for the existing homes in Olowalu, small scale farming, and the Olowalu Cultural Reserve.

### b. Potential Impacts and Mitigation Measures

The natural drainage characteristics of the Olowalu Stream will not be altered as part of implementation of the Master Plan. The land plan for the project provides for the Olowalu Cultural Reserve along the stream to preserve and enhance the streams functional and cultural values. Further, the four (4) existing irrigation reservoirs will remain. The Draft EIS will include a Preliminary Drainage Report to describe the proposed drainage system for the project. Mitigation measures, such as Best Management Practices (BMPs) for erosion and sedimentation control, will be addressed in the Preliminary Drainage Report.

The Olowalu Master Plan proposes to reduce the amount of water currently diverted from Olowalu Stream through re-use of treated wastewater from the proposed wastewater treatment facility for the project. The treated effluent will be a new source of non-potable water for irrigation purposes. It is

anticipated that the re-establishment of stream flows will restore native habitat within the Olowalu Stream ecosystem.

## 8. Nearshore Waters

### a. Existing Conditions

A baseline study on sediment loading, water quality and selected marine life in nearshore waters of Olowalu was conducted by Pacific Rim Research in 2003. Hekili Point (Site A), located in one (1) meter of water and an area 750 meters from Olowalu Stream (Site B) were studied.

At Hekili Point, turf algae was the most abundant substrate covering 67 percent of the benthos, 16.8 percent was live coral, 10.7 percent sand, with the remaining made up of macroalgae, coralline algae and macro invertebrates. Six (6) coral species were observed with Porites lobata the most abundant specie, followed by Porites compressa, Montipora capitata, Porites evermanni, M. patula and Pocillopora meandrina.

At Olowalu Stream, turf algae was the most abundant substrate followed by live coral, coralline algae and macro invertebrates. A total of nine (9) coral species were documented with the most abundant species Porites lobata followed by Pocillopora meandrina, and Montipora patula.

According to the baseline study, although the reefs at Puamana and Olowalu have been subjected to land based human activities (sugar cane and coastal development) during the past century, within the last decade the patterns in coral cover have been very different. Each of the sites had historical streams that were diverted for sugar cane production. The Puamana site was further influenced by housing developments. However, along the makai area, six (6) agricultural lots adjacent to Olowalu Stream have been developed since the 2003 study which may influence the nearshore waters. Further documentation of changes at the Puamana and Olowalu reefs during the land use transition will help clarify human impacts compared to natural factors.

According to the study, the Puamana site was influenced by the proximity of urban centers near the watershed areas with future projected development. The Olowalu site had sugar cane fields in the neighboring watershed. Despite

the variation in anthropogenic (human) activities, the similarity in coral assemblages of the Olowalu Stream site with several areas on Oahu, Maui and Hawaii suggest that these factors do not play a large role in structuring these communities.

The lack of similarity of the Hekili Point site to sites in close proximity indicates the uniqueness of the coral assemblage in the back reef habitat. The similarity of the Olowalu Stream site to the Puamana sites, rather than the closer Olowalu sites, suggest that the stream site is subjected to moderate to high wave energy. Further, the range of anthropogenic impacts (low to high) for sites with similar coral assemblages suggests that both the Hekili Point and Olowalu Stream sites have not been impacted by human activities but rather are influenced by natural factors, such as water motion.

**b. Potential Impacts and Mitigation Measures**

In recognition that the nearshore marine life in Olowalu has had limited impacts from human activities, a marine water quality report will be prepared for the Draft EIS. The report will address the potential impacts and propose mitigation measures to protect the nearshore waters and its marine life.

**9. Archaeological Resources**

**a. Historical Context**

The Master Plan area is located in the Olowalu ahupuaa. Olowalu was an important agricultural area in pre-contact times. As long as water was available, the area's climate was ideal for producing taro.

Olowalu is where Kalolapupukahonokowailani (Kalola), daughter of Maui and Hawaii's King Kekaulike, lived at the beginning of the eighteenth century. High kapu Alii wahine Kalola married Kalaniopuu, ruling King of Hawaii. Kalola and Kalaniopuu had two (2) daughters who carried the highest kapu rank of any ruling chiefs ever recorded. Their daughter Kekuiapoia was the mother of Queen Keopuolani.

After Kalaniopuu died, Kalola took Maui Chief Kaopuiki for her husband. While Kalola lived in Olowalu, her heiau of state was Hale Kii Heiau in

Wailuku. This fact indicates the connection between Iao and Olowalu was important, both spiritually and economically. Kalola was ruling at Olowalu in 1790 when Captain Simon Metcalf fired cannons on Olowalu. This incident is infamous as the 'Olowalu Massacre'. The Olowalu Massacre occurred as a result of an incident at Honuaula, Maui when Captain Metcalf anchored his trading ship, the *Eleanora*, off shore to barter for necessary provisions. A chief stole one (1) of Metcalfe's small boats and killed a watchman. After learning the thieves had fled to Olowalu, a place of sanctuary, Metcalf sailed off toward Olowalu. Chiefess Kalola, knowing the explosive nature of the situation, declared a three (3) day kapu on all canoes approaching the *Eleanora*. When the kapu was lifted and Kalola's husband Kaopuiki returned only the stolen boat's keel and the watchman's stripped thighbones, an enraged Metcalf encouraged trading canoes to approach the *Eleanora* and then opened fire with the ship's guns. Over 100 Hawaiians were killed in the incident with over 100 others wounded. Hawaiians referred to the slaughter as Kalolopahu, or spilled brains. Metcalf violated the sanctity of Olowalu, forever breaking the faith Hawaiians had in the safety and nurture of this Puu Honua.

Several months after the massacre at Olowalu, Kalola watched the Great Battle of Kepaniwai from Iao Valley. Kalola escaped through the Olowalu Pass and down to Olowalu, where she boarded canoes for Molokai. Kamehameha followed Kalola to Kalamaula, Molokai and asked for Keopuolani to be his queen. Kalola, who was sick and dying, agreed to give Kamehameha Keopuolani and her mother Kekuiapoiwa Liliha, if he would allow the girls to stay at her death bed until she passed. Kamehameha camped on Molokai until Kalola died, and returned to Kona with his high kapu queen Keopuolani. Kalola was buried at Kalamaula on Molokai.

The land where Kalola's kauhale stood in Olowalu is now the home of Auntie Adeline Rodrigues, who descends from Chief Kamakakekau, who was assigned Konohiki of Ukemehame (*Pu'u Honua: The Legacy of Olowalu*).

As foreign influence became more pervasive following the unification of the Hawaiian Islands under Kamehameha, Lahaina became the center for West Maui because of favorable conditions for sailing craft. An 1832 missionary

census showed the population of Lahaina at 4,028; Olowalu at 832; and Ukumehame at 573.

Following the Great Mahele in 1848, there were 46 individual Land Commission awards granted in the ahupuaa of Olowalu. The majority are in the upper reaches of the property, along Olowalu Stream. The distribution of land awards and a review of late 1800's and early 1900's plantation maps suggest that the stream was channeled in a general, straighter north-south direction sometime after the Mahele. This was probably done to control flooding of agricultural fields.

The Olowalu Sugar Company is said to have been an enterprise of King Kamehameha V, who reigned from 1863 to 1872. He began the operation sometime during his reign. It was incorporated as the Olowalu Sugar Company in May 1881 and eventually was sold to Pioneer Mill Company, Ltd. in 1931. The Olowalu Mill was probably constructed in the 1870's located adjacent to the wharf. A two-foot gauge railroad was built parallel to the old government road. The plantation manager's house, located approximately 100 meters to the northwest of the Mill, was built around 1920. There are also three (3) other houses between the Mill and the highway, which may have been built around the same time.

**b. Archaeological Investigations**

Archaeological Inventory Surveys of Olowalu lands on both the mauka and makai (including the Master Plan area) sides of the Honoapiilani Highway were conducted by Xamanek Researches in 1999/2000.

After the brush fire in 2007, Scientific Consultant Services, Inc. (SCS) conducted a field inspection of approximately 660 acres in the Olowalu area, including the Master Plan area. During the survey only one new undocumented site was discovered. SIHP Site 50-50-08-4708 includes Feature C which are new agricultural terraces. Further, after the fire, two (2) of the documented sites were identified to have been adversely impacted by the fire. At Site 50-50-08-4758, a historic cemetery, several headstones became fire-cracked and spalled in the heat; and Site 50-50-08-1200, a petroglyph complex located on the mauka (northeast) side of Puu Kilea, was partially damaged by smoke and some petroglyphs were spalled in the heat.



In reference to Site 50-50-08-4708, SCS noted that the addition of another *loi* terrace complex does not change the original interpretation or significance of this site. The site was originally interpreted as a *heiau* with associated *loi*. The new features add to the breadth of the site. Site 4708 remains significant under Criterion E, due to its interpreted status as a religious site.

c. **Potential Impacts and Mitigation Measures**

The archaeological inventory survey reports for the mauka and makai areas were approved by the State Historic Preservation Division (SHPD) on February 25, 2000 and April 12, 2000, respectively. The Archaeological Mitigation and Preservation Plan was approved by SHPD on June 4, 2001.

A more thorough reporting of the results of the archaeological inventory surveys and SHPD response will be provided in the Draft EIS.

The establishment of the Olowalu Cultural Reserve serves to protect a substantial number of archaeological sites and features. The Olowalu Master Plan proposes to increase the acreage of the Olowalu Cultural Reserve from approximately 75 acres to approximately 110 acres, which will further protect the sites from impacts associated with future land uses.

10. **Cultural Assessment**

a. **Existing Conditions**

The Olowalu Cultural Reserve (OCR) was established and incorporated in the State of Hawaii in January 2000. The objective of the non-profit OCR is the preservation and protection of the historical, cultural, and spiritual resources within the Olowalu ahupuaa. Further the mission statement of OCR is:

*To perpetuate the traditional and customary practices of “Kanaka Maoli” of these Hawaiian Islands, and promote opportunities to regain the spiritual connection of “malama aina” of our ancestors by insuring these beliefs and customs are passed down to future generations.*

The cultural beliefs, customs and practices are being protected and perpetuated in the OCR in accordance with their mission statement.

**b. Potential Impacts and Mitigation Measures**

The Olowalu Master Plan involves the expansion of the area of OCR from approximately 75 acres to approximately 110 acres. Lastly, it is envisioned that the future educational facilities within the Olowalu Master Plan will incorporate lessons learned within the OCR as core components of its curriculum.

Much of the native Hawaiian culture in Olowalu before 1790 has been documented through such sources as *Pu'u Honua: The Legacy of Olowalu*. A broader cultural impact assessment beyond 1790 will be prepared for the Master Plan area. The assessment will address existing cultural practices occurring within the immediate vicinity of the project area. The cultural impact assessment report will be included in the Draft EIS.

**11. Air Quality**

**a. Existing Conditions**

There are no point sources of airborne emissions within close proximity of the Master Plan area. Smoke and dust from sugar cane harvesting and cultivation operations formerly caused an intermittent impact to the region's air quality. However, since Pioneer Mill Company, Inc. has ceased its sugar growing operations, this temporary air quality impact has also ceased.

Although minimal, airborne pollutants are largely attributable to vehicular exhaust from traffic along the region's roadways, as well as dust from unplanted or recently plowed fields. However, sources are intermittent and prevailing winds quickly disperse particulates generated by these temporary sources.

**b. Potential Impacts and Mitigation Measures**

Air quality impacts attributed to the Olowalu Town project will include dust generated by short-term construction-related activities. Site work such as clearing, grubbing and grading, and roadwork and construction will generate airborne particulates. Dust control measures, such as regular watering and sprinkling, will be implemented to minimize wind-blown emissions.

Graded and grubbed areas will be vegetated to mitigate dust-generated impacts. In the long term, the proposed project is not expected to adversely impact local and regional ambient air quality.

**12. Noise**

**a. Existing Conditions**

Vehicular noise from traffic traveling along Honoapiilani Highway is the primary source of intermittent noise at the Master Plan area. Ambient noise conditions are generally attributable to natural conditions such as ocean waves, wind and rain.

**b. Potential Impacts and Mitigation Measures**

Ambient noise conditions will be temporarily impacted by construction activities. Heavy construction equipment, such as bulldozers, front-end loaders, and material-transport vehicles, will likely be the dominant source of noise during the construction period. To assess the overall long-term impact of the proposed project, including the mauka relocation of Honoapiilani Highway, an ambient noise levels, a noise study will be conducted. Results of the noise study will be reported in the Draft EIS.

**13. Scenic and Open Space Resources**

**a. Existing Conditions**

From Honoapiilani Highway, on either side of Olowalu where the highway is in close proximity to the shoreline, mauka and coastal views are exceptional due to the scarcity of development in the area and the sloping topography on the mauka side. However, where the highway moves more inland, the mauka/makai views become obstructed by existing development (in the vicinity of the former Manager's house) and the Olowalu General Store. At this portion of the highway, there are partial glimpses of the ocean through existing landscaping and virtually no views to the mountains, due to the vegetation and buildings on the mauka side of Honoapiilani Highway.

Shoreline views in the Olowalu area offer vistas of the Pacific Ocean, as well as the islands of Lanai and Kahoolawe. The Kihei-Makena coastline and the

islet of Molokini are also visible from Olowalu. The West Maui Mountains and Olowalu Valley can be seen looking mauka over the residences at Kapaiki Village.

**b. Potential Impacts and Mitigation Measures**

The Olowalu Master Plan offers an architecturally integrated plan which sets standards for height, landscaping, open space corridors and street alignments that promote mauka to makai views. Details of design and performance standards, as it relates to views, will be incorporated in the Draft EIS.

**14. Shoreline Access**

**a. Existing Conditions**

A government beach reserve is located along the shoreline extent of Olowalu. See **Figure 13**. The shoreline along the government beach reserve consists of rounded, waterworn basalt and bleached coral rubble. Lateral shoreline access opportunities to the coastline are available through the government beach reserve on the makai side of the Master Plan area. In areas where the beach reserve is not contiguous, access is provided through the adjacent lots via a minimum 50-foot wide lateral access easement. Access to the government beach reserve is available through both the eastern and western ends where the reserve meets Honoapiilani Highway, and through the access to Olowalu Wharf, makai of Honoapiilani Highway. Due to traffic volume and speeding vehicles along Honoapiilani Highway, there are existing concerns regarding access to the beach reserve entries. Near Marker 14, there are currently no turning lanes to the shoreline which creates a hazardous condition from vehicles pulling off and parking randomly along the highway.

**b. Potential Impacts and Mitigation Measures**

The preservation and enhancement of public access to shoreline resources is an important planning element of the proposed Master Plan. The Draft EIS will discuss in more detail access to the existing beach reserve areas, shoreline access, and related recreational opportunities associated with the Olowalu Town Master Plan.

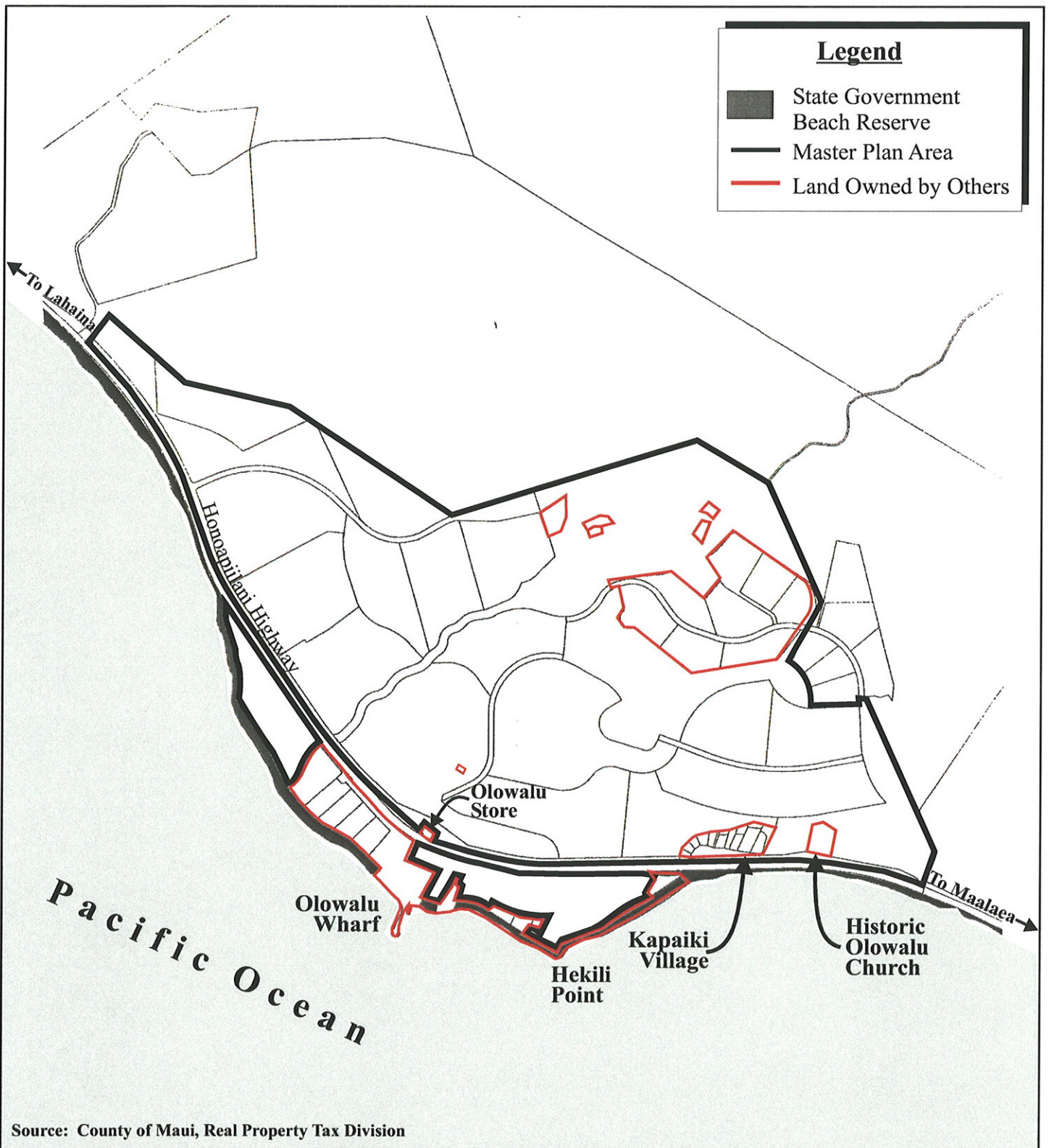


Figure 13

Proposed Olowalu Town  
Master Plan

NOT TO SCALE

State Government Beach Reserve Map



Notably, the relocation of Honoapiilani Highway inland from the shoreline creates the opportunity to utilize the existing highway as a recreational corridor which will result in a safer access to the shoreline.

## **B. SOCIO-ECONOMIC ENVIRONMENT**

### **1. Population**

#### **a. Existing Conditions**

The resident population of the West Maui Community Plan region has demonstrated a substantial increase over the last two decades. Population gains were especially evident in the 1970's as the rapidly developing visitor industry attracted many new residents. The population of the Lahaina District increased from 14,574 in 1990 to 17,967 in 2000. The resident population in 2005 was 19,852 people. Projections of the resident population in the Lahaina District for the years 2010, 2020 and 2030 are 21,577, 25,096 and 28,903, respectively (County of Maui, June 2006).

Growth at the County level exhibits a similar pattern. The County's resident population increased from 101,709 in 1990 to 128,968 in 2000. The County's resident population in 2005 was 140,050 people. Projections for the resident County population in 2010, 2020 and 2030 are 151,300, 174,450 and 199,550, respectively (County of Maui, June 2006).

#### **b. Potential Impacts and Mitigation Measures**

The proposed Master Plan is intended to provide new housing opportunities in the context of a comprehensively planned community. The re-establishment of Olowalu as an integrated living and working village is a means to accommodate growth in population envisioned over the next 20 years. New employment opportunities attributed to construction and long-term commercial ventures may attract new residents to the island. This element of in-migration population growth, however, is factored into the population projections developed by the County of Maui.

## 2. Economy

### a. Existing Conditions

The economy of Maui is heavily dependent upon the visitor industry. The dependency on the visitor industry is especially evident in West Maui, which is one of the State's major resort destination areas. The Kaanapali Resort includes a number of hotels, including the Maui Marriott Resort, Hyatt Regency Maui, the Westin Maui, and the Sheraton Maui.

West Maui's visitor orientation is reflected in the character of Lahaina Town, which serves as a center for visitor-related retail outlets, as well as visitor-related activities.

In terms of the agriculture industry, Pioneer Mill Company, Inc. ceased sugar cane cultivation on its lands in 1999. Of its 6,700 acres, approximately 500 acres are currently utilized for the growing of coffee. Other crops, such as seed corn, are being planted. The remaining large agricultural operation is Maui Land & Pineapple Company's pineapple fields in the Honolua region. On November 3, 2009, the company announced it would stop pineapple cultivation by the end of 2009 due to market conditions in which the company has lost \$115 million in agriculture since 2002 (Maui Land & Pineapple Company, Inc. Press Release, November 3, 2009).

In November 2009, Maui County and the Island of Maui unemployment rates were 9.3 percent and 9.2 percent, respectively. Maui County's unemployment rate is above the statewide unemployment rate of 7.0 percent. The Maui island unemployment rate in November 2009 was 3.3 percent above the November 2008 unemployment rate of 5.9 percent (Hawaii Workforce Informer, <http://www.hiwi.org>, 2010).

### b. Potential Impacts and Mitigation Measures

A key component of the proposed Master Plan is the economic viability of the project in providing potential centers of employment within Olowalu Town, as well as offering daily goods and services to the community's residents. As noted above, a market study was prepared for the project prior to the development of the Master Plan. According to the study, initially the

project will be supported largely by highway traffic and tourists. As the residential uses in the project are developed, the local residents would become more important in supporting the commercial uses in the project.

The project could support a variety of eating and drinking food outlets while retail space could include a general store, health/organic foods, pharmacy, general merchandise stores, banks, boutiques, and galleries. Other noncommercial and non-retail tenants that may be in demand could include a post office, medical professional, financial, professionals, such as architects, and live/work space. An updated Market Study will be prepared for the Master Plan with its results presented and discussed in the Draft EIS.

### **3. Housing**

#### **a. Existing Conditions**

There currently exists a significant shortage of affordable housing on the island. The median sales price for Lahaina Town reported by the Realtors Association of Maui, Inc. was \$650,000.00 from January to November 2009. The median sales price for a condominium in Lahaina was \$410,000.00. Although prices fluctuate by subregion and is dependent on economic conditions, price levels have remained high and beyond the purchasing power of many island residents.

Socio-economic forecast data prepared for the County of Maui's 2030 General Plan Update process reflect a continuing increase in housing demand through the planning horizon year of 2030. For the Lahaina region, total housing demand for the year 2030 is estimated to be 15,037 units, with a total resident demand of 11,369 units. These figures compare to the 2005 housing demand estimate of 7,644 units and a 2005 resident demand of 7,121 units (Planning Department, 2006).

#### **b. Potential Impacts and Mitigation Measures**

The Olowalu Town Master Plan will provide approximately 1,500 residential units in a variety of product types. Affordable housing requirements will be addressed in keeping with market needs and the County of Maui's Residential Workforce Housing Policy. An update of the market study used in the



development of the Master Plan will be prepared and incorporated in the Draft EIS.

## **C. PUBLIC SERVICES**

### **1. Solid Waste Disposal**

#### **a. Existing Conditions**

Single-family residential solid waste collection service is provided by the County of Maui on a weekly basis. Residential solid waste collected by County crews is disposed at the County's Central Maui Landfill, located four miles southeast of the Kahului Airport. In addition to County-collected refuse, the Central Maui Landfill accepts commercial waste from private collection companies.

To facilitate solid waste collection services for the West Maui region, a refuse transfer station has been established at the former County Olowalu Landfill site which is located to the north of the Master Plan area.

#### **b. Potential Impacts and Mitigation Measures**

All solid waste generated by the proposed project will be disposed of at the Central Maui Landfill in Puunene by County collection crews or private refuse collection company, as applicable. A solid waste generation assessment will be included in the Draft EIS.

### **2. Medical Facilities**

#### **a. Existing Conditions**

The only major medical facility on the Island is Maui Memorial Medical Center, located approximately 16 miles from Olowalu, midway between Wailuku and Kahului. The 201-bed facility provides general, acute, and emergency care services (Telephone, January 2010). A West Maui Hospital is proposed near the Lahaina Civic Center complex at Kaanapali.

Regular hours are offered by private medical practices in Lahaina, which include the Maui Medical Group, Lahaina Physicians, West Maui Healthcare Center, and Kaiser Permanente Lahaina Clinic.

**b. Potential Impacts and Mitigation Measures**

Demand for medical services will increase over time, as population growth occurs. The proposed Master Plan will help to accommodate a portion of the island's growth over the next 20 to 30 years. It is anticipated that growth in medical facilities and service provision will occur in a similar incremental fashion to meet the medical service needs of the island's residents and visitors. Services which may be implemented as part of the Master Plan would include medical and social service spaces. Coordination with key medical service providers, as well as the developers of the West Maui Hospital, will be undertaken during the preparation of the Draft EIS.

**3. Police and Fire Protection**

**a. Existing Conditions**

The Master Plan area is within the Lahaina Police Station service area, which services all of the Lahaina district. The Lahaina Station is located in the Lahaina Civic Center complex at Wahikuli, approximately 7.5 miles from the Master Plan area.

Fire prevention, suppression and protection services for the Lahaina District are provided by the Lahaina Fire Station, also located in the Lahaina Civic Center and the Napili Fire Station, located in Napili. The Lahaina Fire Station includes an engine and a ladder company. The Napili Fire Station consists of an engine company.

**b. Potential Impacts and Mitigation Measures**

The Master Plan includes future areas to accommodate facilities that may be necessary for police and fire protection. An assessment of the impacts to police and fire protection services will be included in the Draft EIS. The EA/EISPN will be circulated to the Police Department and Department of Fire and Public Safety to solicit comments on the proposed Olowalu Master Plan.

4. **Educational Facilities**

a. **Existing Conditions**

The West Maui region is served by four (4) public schools (Lahainaluna High School, Lahaina Intermediate School, Princess Nahienaena Elementary School, and Kamehameha III Elementary School) operated by the State of Hawaii, Department of Education (DOE) and two (2) smaller private schools (Sacred Hearts School and Maui Preparatory Academy). All four (4) of the public schools are located within Lahaina town and three (3) of those schools are located along Lahainaluna Road, mauka of Honoapiilani Highway. The enrollments in the four (4) schools have grown significantly in concert with the growth of residential development in the West Maui area. See **Table 7**.

**Table 7.** Actual Enrollments at Department of Education Schools in West Maui

School	Actual Enrollment			Rated Capacity
	SY 07-08	SY 08-09	SY 09-10	
Lahainaluna High School	996	977	969	969
Lahaina Intermediate	615	683	693	571
Kamehameha III Elementary	701	689	713	646
Princess Nahienaena Elementary	624	643	610	612
Source: Department of Education, 2010 and Planning Department, 2007.				

University of Hawaii Maui College (UH-Maui), which is located in Kahului, is a branch of the University of Hawaii system. In addition, there is a UH-Maui Lahaina Education Center that opened in West Maui in Fall 2007. UH-Maui is the primary higher education institution serving Maui.

The Olowalu Cultural Reserve (OCR) currently provides educational experiences relating to its archaeological and cultural heritage to various groups, especially school children.

**b. Potential Impacts and Mitigation Measures**

Ongoing coordination with the DOE to assess the impact of the proposed Master Plan upon regional educational facilities will continue throughout the land entitlement process and implementation of the project. As part of the coordination process, a copy of the EA/EISPN will be sent to the Department of Education for review and comment. Results of this ongoing coordination will be incorporated in the Draft EIS.

It is envisioned that the future educational facilities within the Olowalu Master Plan could potentially incorporate lessons learned within the OCR as core components of its curriculum.

**5. Recreational Facilities**

**a. Existing Conditions**

West Maui is served by numerous recreational facilities offering diverse opportunities for the region's residents. There are seventeen (17) County parks and three (3) State beach parks in West Maui. Approximately one-third of the County parks are situated along the shoreline.

In addition, Kaanapali and Kapalua Resorts operate world-class golf courses which are available for public use.

Public access is available to the Olowalu shoreline, which offers opportunities for surfing, swimming, fishing, snorkeling, and diving. However, within the Olowalu vicinity, there are no improved parking areas and no park facilities, such as restrooms, showers, or picnic tables.

**b. Potential Impacts and Mitigation Measures**

The Master Plan includes provisions for active and passive parks, as well as open space areas, in keeping with the sustainable planning principles employed in the plan formulation process. Approximately 220 acres, or one-third of the Master Plan, has been designated for park and open-space. Recreational-related improvements call for the following:

- Enhanced access to the existing government beach reserve along the Olowalu shoreline
- Expanded streamside parks providing mauka-makai access and related passive park experiences along the Olowalu Stream
- A comprehensive greenway system for walking, jogging, and biking
- A mauka community park connected to the greenway system
- Enhancement of the Olowalu Cultural Reserve
- Enhancement of camping facilities (Camp Olowalu)
- Shoreline parks
- Neighborhood parks

Olowalu Town, LLC will discuss the proposed parks and recreation concepts and proposals with the County Department of Parks and Recreation (DPR) to ensure that the County's parks and playgrounds assessment requirements are appropriately addressed. Results of the DPR consultation process will be reported in the Draft EIS.

## **D. INFRASTRUCTURE**

### **1. Roadways**

#### **a. Existing Conditions**

The only major roadway facility providing vehicular access to and from the Olowalu area is Honoapiilani Highway, a State-owned and maintained highway linking West Maui with the central valley of the island. Honoapiilani Highway primarily serves as access for vehicles traveling to and from the Lahaina, Kaanapali and Kapalua resort areas. Through Olowalu Village, Honoapiilani Highway is a two-lane rural highway generally aligned in an east to west direction following the coastline. The highway has a posted speed limit of 35 miles per hour (mph) in the vicinity of the Olowalu General Store, which increases to 45 mph outside of this area. The highway has two (2) 12-foot-wide lanes with paved shoulders varying in widths from about 6 to 10 feet wide.

At the Olowalu General Store intersection, storage lanes are provided for various turning movements.

A former cane haul road also runs along the mauka (inland) side of the highway. This cane haul road is generally routed near the highway but diverts inland behind the Olowalu General Store. The cane haul road formerly served as an access road for the Pioneer Mill property/cane land. Several private homes are located mauka of the store, access to which is provided by an unpaved road (Olowalu Village Road) that extends mauka from the cane haul road.

A new paved roadway provides access to homes in the Olowalu Mauka subdivision and connects to Honoapiilani Highway, north of Kapaiki Village.

During the Olowalu Talk Story workshop, options to improve the transportation systems within Olowalu were discussed. The final realignment of Honoapiilani Highway inland was the preferred alternative of the workshop participants in order to encourage multiple modes of transportation and reduce the community's dependence on the automobile. The Olowalu Master Plan incorporates this preferred alternative.

The Olowalu Master Plan is designed with multiple destinations located within close proximity to residential units as a small town walkable community. The Olowalu Master Plan provides opportunities within the community for different modes of transportation, including walking, biking, mass transit, and automobiles within neighborhoods (circulation), between neighborhoods (connectivity) and to different areas of the island (regional transportation).

The highway corridor has been designed with ample right-of-way in order to accommodate future mass transit systems, if such alternatives were to become available in the future. The existing Honoapiilani Highway and monkeypod trees will be preserved and utilized as a secondary connector roadway between the Olowalu Town neighborhoods. The existing highway will be further enhanced as a greenway with bike and walking paths.

**b. Potential Impacts and Mitigation Measures**

The Master Plan utilizes Smart Growth principles in establishing roadway standards. Such standards, for example, will address vehicular lane widths and attendant parking conditions, as well as the relationships of local roadways to public and private frontage functions. Details regarding proposed roadway standards will be included in the Draft EIS.

A significant infrastructural component proposed for the Master Plan includes the proposed relocation of Honoapiilani Highway inland. The proposed alignment is reflected in the Master Plan. Refer to **Figure 4**. The relocation of the highway is consistent with the County's proposed Pali to Puamana Master Plan and facilitates the separation of a high-speed arterial from planned local streets and residential areas. Innovative design standards will be explored in planning for the relocated highway.

The new highway alignment proposes to use two (2) "elongated" U-turn intersections (O-turns) in its geometric design. The O-turns would eliminate the need for signalized intersections, as well as grade separated intersections and allow the free flow of traffic through Olowalu Town.

To create circulation and connectivity within the community, the Olowalu Master Plan will build a connective, or "gridded", network of pedestrian friendly roadways. The gridded roadway network will offer residents numerous routes for both pedestrians and drivers that are both safe and attractive. This is implemented by designing narrower, slower moving streets, with on-street parking in town areas, landscaped medians, and tree-lined sidewalks. The small scale design of the neighborhood block system shortens travel routes and encourages walking as an alternative to automobiles. Internal streets, parkways, alleys, and lanes will be designed to accommodate a series of interconnected greenways/bikeways for walking or biking.

A Traffic Impact Analysis Report (TIAR) for the build out of the Master Plan will be prepared for the Draft EIS. The TIAR will examine levels of service and highway capacity parameters for the Master Plan. Results of the TIAR will be included in the Draft EIS.

In conjunction with the TIAR, the Draft EIS will address transportation demand management (TDM) in order to create a multi-modal transportation system for the proposed Olowalu Town Master Plan.

## 2. Water

### a. Existing Conditions

The County of Maui, Department of Water Supply presently does not service the Olowalu area. Water supply for the limited number of residential and commercial uses (including the Master Plan area) in the Olowalu area is provided by Olowalu Water Company, LLC (OWC). OWC is a private water system (ID# 209) regulated by the Public Utilities Commission. OWC provides both potable and non-potable irrigation water for residents and agricultural uses in Olowalu. The OWC received a Certificate of Public Convenience and Necessity (CPCN) from the State of Hawaii Public Utilities Commission to provide potable water service in August of 2000. In November 2003, the OWC amended the CPCN to add the sales of irrigation water from its potable and non-potable systems.

Water sources are from groundwater and surface water sources. The groundwater source is from the Olowalu Elua Well. Olowalu Elua Well is located approximately 4,500 feet inland of the ocean at an elevation of 205 feet above msl and 100 feet west of Olowalu Stream. The surface water source is from Olowalu Stream.

According to the Commission on Water Resource Management, the estimated sustainable yield of the Olowalu Aquifer is 3 mgd. The Olowalu Elua Well taps a confined aquifer that provides freshwater with very low chloride. The capacity of the well is approximately 250 gpm or 0.36 mgd. The extrapolation of the well's specific capacity suggests that it may be capable of producing approximately 400 gpm or 0.6 mgd.

Historically, the surface water source from Olowalu Stream (for non-potable use) has utilized in excess of four (4) mgd from the Olowalu stream intake (Brown and Caldwell, 2005).



b. **Potential Impacts and Mitigation Measures**

Preliminary estimates indicate that the drinking water demand for the Master Plan will be about 750,000 gallons per day. The Olowalu Aquifer is estimated to have a sustainable yield of approximately 2.0 mgd. The private water system developed to serve the Master Plan community will, therefore, utilize about 37.5 percent of the available aquifer yield potential. The Olowalu Well will be closely monitored for salinity during an aquifer test to confirm the well's long-term capacity. Further, water levels and salinity in the well will be closely monitored during operation to ensure its long-term sustainability. If the well's sustainable capacity is insufficient to meet potable water demand, a second well will be added. If a second well is drilled, sites southeast of Olowalu Stream will be investigated to spread pumpage over a larger area while tapping into the recharge from the stream.

Separately, irrigation water will utilize untreated agricultural water and treated R-1 effluent. Conservation measures and drought planning, such as the use of native plants, will be utilized to reduce overall irrigation water demand.

A Preliminary Engineering Report will be prepared to analyze domestic demand requirements (including fire flow, storage, and transmission system components) for the project. The results of the preliminary engineering study will be reported in the Draft EIS.

3. **Wastewater Systems**

a. **Existing Conditions**

There are no County operated wastewater disposal facilities in the Olowalu area. Individual wastewater disposal needs in the Olowalu area are currently addressed either by septic tanks or individual wastewater treatment systems.

b. **Potential Impacts and Mitigation Measures**

It is estimated that the proposed 1,500 residential units will generate approximately 500,000 gpd or 0.5 mgd of sewage (Brown and Caldwell, 2005).

State-of-the-art wastewater treatment systems will be utilized for the project. Treated effluent from these facilities will be of R-1 quality and suitable for irrigation reuse. The locations and capacities of the treatment systems, as well as their collection and reuse infrastructure, will be described in the Preliminary Engineering Report which will be prepared by the project's civil engineer and incorporated in the Draft EIS.

4. **Drainage**

a. **Existing Conditions**

Other than existing culverts which convey drainage beneath Honoapiilani Highway, the Olowalu area contains no government-maintained drainage improvements. Runoff generally sheet flows from the northeast to the southwest collecting in various swales, gullies, and streams.

b. **Potential Impacts and Mitigation Measures**

Drainage systems will be designed for the Olowalu Town Master Plan to meet and exceed County drainage standards to ensure that downstream properties and coastal waters are not adversely affected by storm runoff from the project. Retention and detention systems will be employed to accommodate the incremental increase in runoff attributed to the development of the Master Plan area. Best Management Practices, or BMPs, will be integrated with the drainage systems design to establish a holistic approach to storm water management. A Preliminary Drainage Report describing the proposed drainage systems will be prepared by the project's civil engineer and included in the Draft EIS.

Potential impacts to shoreline and coastal ecosystems from runoff will be analyzed and addressed in the Draft EIS. In recognition that the nearshore marine life in Olowalu has had limited impact from human activities, a Water Quality Report will be prepared to address potential impacts from the project and propose mitigation measures to protect the nearshore waters and its marine life.

**5. Electrical, Telephone and CATV Considerations**

**a. Existing Conditions**

Electrical power and telephone service are provided to the Olowalu area by Maui Electric Company, Ltd. (MECO) and Hawaiian Telcom, via overhead lines along Honoapiilani Highway. MECO's 69 kilovolt overhead transmission lines from Central Maui to the Lahaina-Kapalua area extend along the lands situated mauka of the Honoapiilani Highway. Oceanic Time Warner does not currently provide cable service to the Olowalu area.

**b. Potential Impacts and Mitigation Measures**

Coordination with MECO and Hawaiian Telcom will be undertaken during the engineering plans preparation phase of work to ensure that all electrical and telephone service requirements for the proposed project are adequately addressed. Electrical and telephone distribution systems will be extended to serve the Olowalu Town Master Plan.

It is noted that energy saving measures prescribed by the U.S. Green Building Council will be utilized in all vertical construction at Olowalu Town. The principles of the Leadership in Energy and Environmental Design (LEED) Green Building Rating System will be employed to advance energy sustainability principles envisioned for Olowalu Town. Moreover, renewable energy engineering systems will be considered as project planning continues. Examples of such systems include the use of photovoltaic-generated energy to pump R-1 effluent from the project's wastewater treatment systems to higher elevation storage tanks or reservoirs. The use of hydro-power from Olowalu Stream flows may also be considered as part of the project's utilization goal for energy efficient and sustainable systems.

**E. CUMULATIVE AND SECONDARY IMPACTS**

Cumulative impacts are defined as the impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions.

The proposed project is not part of a larger action, nor would it occur within the context of such actions. However, the proposed action will be reviewed together with other major residential development projects in the region to address cumulative impact considerations. Cumulative impact considerations will be examined in further detail in the Draft EIS.

Secondary impacts are those which have the potential to occur later in time or farther in distance, but are still reasonably foreseeable. They can be viewed as actions of others that are taken because of the presence of the project. Secondary impacts from highway projects, for example, can occur because they can induce development by removing one of the impediments to growth. Secondary impacts will be examined in further detail in the Draft EIS.

**III. RELATIONSHIP TO  
GOVERNMENTAL PLANS,  
POLICIES AND  
CONTROLS**

### **III. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS**

#### **A. STATE LAND USE DISTRICT**

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission, establishes four (4) major land use districts in which all lands in the state are placed. These districts are designated as "Urban", "Rural", "Agricultural", and "Conservation". The Master Plan area is located within the "Agricultural" district with limited areas falling in the "Conservation" District. Refer to **Figure 5**.

A State Land Use District Boundary Amendment for those portions of the Master Plan area located within the "Agricultural" district for reclassification to the "Urban" district and "Rural" district will be requested as part of the entitlement application to enable implementation of the proposed project. Criteria considered in the reclassification of lands are set forth in the State Land Use Commission Rules (Chapter 15-15, Hawaii Administrative Rules [HAR]). These criteria are discussed in the following section of this report:

#### **B. STATE LAND USE DISTRICT CRITERIA**

##### **URBAN DISTRICT**

Pursuant to Section 15-15-18 of HAR, the proposed Master Plan meets the standards for determining the "U" Urban District boundaries, as follows:

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

Historically, Olowalu included concentrations of people and structures from pre-contact to the present day. During its heyday as a plantation community, Olowalu was a thriving community consisting of housing, employment centers, such as the Olowalu Mill, and agricultural fields. The old wharf was used to transport agricultural goods, and the existing Olowalu Store served as the community's gathering place. The demise of sugar cane in West Maui marked the decline in the community. The Master Plan proposes to re-establish this once thriving community.

**(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;**

The Master Plan proposes to re-establish the once thriving Olowalu community in the context of creating new opportunities for housing, employment, and support services. The Master Plan includes a range of land uses. The Conservation and Agricultural lands are aimed at preserving the cultural history of the area and re-establishing the once thriving ahupuaa agricultural system of the early Hawaiians. The Rural and Urban land uses are visioned to be the main centers of housing and employment opportunities with their supporting services.

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

The Master Plan includes basic services, such as opportunities for public facilities, including, but not limited to, parks, schools, police, and fire. Infrastructure services, such as a private water system, wastewater treatment facility, and a future By-Pass highway to Honoapiilani Highway, are addressed by the Master Plan.

**(C) Sufficient reserve areas for foreseeable urban growth;**

The Master Plan is a comprehensively planned community intended to be implemented over a 30-year horizon and includes sufficient areas for foreseeable urban growth. In a larger regional and islandwide context, the County of Maui's 2030 General Plan update process will examine other areas appropriate for urban growth. The General Plan's Maui Island Plan (MIP) component is specifically designed to establish urban and rural growth areas through the year 2030. The General Plan Advisory Committee recommended that the Olowalu Master Plan be included within these directed growth boundaries. The Maui Planning Commission recommended that the portion of the Olowalu Master Plan mauka of Honoapiilani Highway be located within the directed growth boundaries. The MIP was transmitted to the Maui County Council on October 16, 2009 and is currently under review.



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

The Master Plan has been formulated to accommodate environmental constraints, such as flood, tsunami, soil conditions, historic and cultural sites, and related land use-governing environmental parameters. It should be noted that the Master Plan observes a minimum 150-foot shoreline setback established during the Special Management Area (SMA) Use Permit approval for the Olowalu Subdivision, as well as maintenance of the Olowalu Cultural Reserve to preserve archaeological, historic, and cultural resources.

- (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;**

The Master Plan is not contiguous to other urban lands or currently designated on the County general plan for future urban growth. However, the Master Plan is viewed as an opportunity to re-establish a village community to meet the island's growing need for housing. In this context, the General Plan Advisory Committee (GPAC) recommended inclusion of the Olowalu Master Plan in the Urban and Rural Growth Boundaries of the Maui Island Plan (MIP). The Maui Planning Commission as well, recommended the Olowalu Master Plan be included in the future growth boundaries. The Planning Department's recommendation to the Maui County Council, however, excludes the Master Plan from designation as a future urban and rural growth area. The MIP was transmitted to the Maui County Council on October 16, 2009 and is currently under review. The applicant will continue its participation in the MIP process to achieve their objective of formalizing urban and rural growth boundaries for the Olowalu Master Plan.

- (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;**

As noted, the context for urban growth direction up to 2030, is being addressed through the Maui Island Plan. Although the process of deliberating and delineating the Maui Island Plan maps is ongoing, the applicant is actively participating in the process, as reflected in the General Plan Advisory Committee's and Maui Planning

Commission's recommendations to include the Olowalu Master Plan in the island's directed growth boundary.

**(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;**

Planning for the proposed re-establishment of Olowalu via a master planning framework has considered the criteria for land use standards conformance. It is in this master planning context, that conformance to the standards have been addressed.

**(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**

The Master Plan is envisioned as the re-establishment of the once thriving Olowalu community. Infrastructure services, parks and the right-of-way for the future Bypass Highway will be provided by the applicant. The Master Plan includes provisions for public services, such as educational facilities, police and fire. Based on the master planning framework used in project planning, there is no unreasonable investment in public infrastructure or support services anticipated.

**(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.**

The Master Plan's urban-related uses do not include lands with a general slope of twenty percent or more.

## **RURAL DISTRICT**

Pursuant to HAR Section 15-15-21, the Master Plan meets the standards for determining the "R" rural district boundaries, as follows:

- (1) **Areas consisting of small farms; provided that the areas need not be included in this district if their inclusion will alter the general characteristics of the areas;**

The Master Plan includes a range of land uses. The proposed rural lots are envisioned to be adjacent to existing agricultural lands and serve as a transitional zone between the agricultural lands and the proposed urban town centers. The rural lots will also provide larger residential house lots that are not found within the agricultural district.

- (2) **Activities or uses as characterized by low-density residential lots of not less than one-half acre and a density of not more than one single-family dwelling per one-half acre in areas where "city-like" concentration of people, structures, streets, and urban level of services are absent, and where small farms are intermixed with the low-density residential lots; and**

The rural designated lands are envisioned to be a transitional zone between the existing agricultural lands and the future urban town center. The lots will range from the minimum one-half acre to larger lots and provide larger residential house lots in the West Maui region that are not located within the State Agricultural district.

- (3) **It may also include parcels of land which are surrounded by, or contiguous to this district, and are not suited to low-density residential uses for small farm or agricultural uses.**

The areas proposed for "Rural" reclassification are not surrounded by or contiguous to rural lands. Currently, there are no Rural-designated lands in Olowalu. Areas proposed for "Rural" designation are envisioned as a low-density residential transition zone between the existing agricultural lands and the future urban town centers and does not preclude small-scale agricultural operations.

## **C. HAWAII STATE PLAN**

Chapter 226, HRS, also known as the Hawaii State Plan, is a long-range comprehensive plan which serves as a guide for the future long-term development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. Examples of State objectives and policies relevant to the proposed Olowalu Town project are as follows:

**1. Section 226-5 Objective and policies for population.**

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.

To achieve the population objective, it shall be the policy of this State to:

- a. 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.
- b. Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.
- c. Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.
- d. 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.

**2. Section 226-6 Objectives and policies for the economy--in general.**

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

- a. Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people.
- b. 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.

**3. §226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources.**

Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:

- a. Prudent use of Hawaii's land-based, shoreline, and marine resources.
- b. Effective protection of Hawaii's unique and fragile environmental resources.

To meet these objectives, it shall be the State policy to:

- a. Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.
- b. Take into account the physical attributes of areas when planning and designing activities and facilities.
- c. Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.

4. **§226-12 Objective and policies for the physical environment--scenic, natural beauty, and historic resources.**

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.

To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:

- a. Promote the preservation and restoration of significant natural and historic resources.
- b. Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.
- c. Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.
- d. Encourage the design of developments and activities that complement the natural beauty of the islands.

5. **§226-13 Objectives and policies for the physical environment--land, air, and water quality.**

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

- a. Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.
- b. Greater public awareness and appreciation of Hawaii's environmental resources.

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

- a. Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.
- b. Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.

**6. Section 226-14 Objective and policies for facility systems--in general.**

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.

To achieve the general facility systems objective, it shall be the policy of this State to:

- a. Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.
- b. Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.
- c. Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.

**7. Section 226-15 Objectives and policies for facility systems--solid and liquid wastes.**

Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:

- a. Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.
- b. Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.

To meet these objectives, it shall be the State's policy to encourage the adequate development of sewerage facilities that complement planned growth.

**8. Section 226-16 Objective and policies for facility systems--water.**

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.

To achieve the facility systems water objective, it shall be the policy of this State to:

- a. Coordinate development of land use activities with existing and potential water supply.
- b. Reclaim and encourage the productive use of runoff water and wastewater discharges.
- c. Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.
- d. Support water supply services to areas experiencing critical water problems.
- e. Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.

**9. Section 226-17 Objectives and policies for facility systems--transportation.**

Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:

- a. An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.
- b. A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.

To achieve the transportation objectives, it shall be the policy of this State to:

- a. Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter.
- b. Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs.



- c. Encourage transportation systems that serve to accommodate present and future development needs of communities.
- d. Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii's natural environment.
- e. Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation.

**10. Section 226-18 Objectives and policies for facility systems--energy.**

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:

- a. Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;
- b. Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased.

**11. Section 226-19 Objectives and policies for socio-cultural advancement--housing.**

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.
- (2) The orderly development of residential areas sensitive to community needs and other land uses.
- (3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawaii's people.

To achieve the housing objectives, it shall be the policy of this State to:

- a. Effectively accommodate the housing needs of Hawaii's people.

- b. Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households.
- c. Increase home ownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.
- d. Foster a variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods that reflect the culture and values of the community.

**12. Section 226-23 Objective and policies for socio-cultural advancement--leisure.**

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. To achieve the leisure objective, it shall be the policy of this State to:

- a. Foster and preserve Hawaii's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.
- b. 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.
- c. Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.
- d. 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.
- e. Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources.
- f. Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.

**13. Section 226-25 Objective and policies for socio-cultural advancement--culture.**

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.

To achieve the culture objective, it shall be the policy of this State to:

- a. Foster increased knowledge and understanding of Hawaii's ethnic and cultural heritages and the history of Hawaii.
- b. 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.

The foregoing State Plan objectives and policies will be advanced through the implementation of the proposed Olowalu Town Master Plan. Additional reviews of the State Plan and State Functional Plans will be undertaken following completion of all technical studies for the Draft EIS.

#### **D. MAUI COUNTY GENERAL PLAN**

As indicated by the Maui County Charter, the purpose of the General Plan shall be:

*...indicate desired population and physical development patterns for each island and region within the County; shall address the unique problems and needs of each island and region; shall explain the opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns, and characteristics of future developments. The General Plan shall identify objectives to be achieved, and priorities, policies, and implementing actions to be pursued with respect to population density, land use maps, land use regulations, transportation systems, public and community facility locations, water and sewage systems, visitor destinations, urban design, and other matters related to development.*

Chapter 2.80B of the Maui County Code, relating to the General Plan and Community Plans, implements the foregoing Charter provision through enabling legislation which calls for a Countywide Policy Plan and a Maui Island Plan. The Countywide Policy Plan was adopted as Ordinance No. 3732 on March 24, 2010. The Maui Island Plan is currently in the process of review and formulation by the Maui County Council.

With regard to the Countywide Policy Plan, Section 2.80B.030 of the Maui County Code states the following.

*The countywide policy plan shall provide broad policies and objectives which portray the desired direction of the County's future. The countywide policy plan shall include:*

- 1. A vision for the County;*
- 2. A statement of core themes or principles for the County; and*
- 3. A list of countywide objectives and policies for population, land use, the environment, the economy, and housing.*

Core principles set forth in the Countywide Policy Plan are listed as follows:

1. Excellence in the stewardship of the natural environment and cultural resources;
2. Compassion for and understanding of others;
3. Respect for diversity;
4. Engagement and empowerment of Maui County residents;
5. Honor for all cultural traditions and histories;
6. Consideration of the contributions of past generations as well as the needs of future generations;
7. Commitment to self-sufficiency;
8. Wisdom and balance in decision making;
9. Thoughtful, island-appropriate innovation; and
10. Nurturance of the health and well-being of our families and our communities.

Congruent with these core principles, the Countywide Policy Plan identifies goals objectives, policies and implementing actions for pertinent functional planning categories, which are identified as follows:

1. Natural environment
2. Local cultures and traditions
3. Education
4. Social and healthcare services
5. Housing opportunities for residents
6. Local economy
7. Parks and public facilities
8. Transportation options
9. Physical infrastructure
10. Sustainable land use and growth management
11. Good governance

With respect to the Olowalu Town Master Plan, the following goals, objectives, policies and implementing actions are illustrative of the project's compliance with the Countywide Policy Plan.

### **GOALS, OBJECTIVES AND POLICIES**

#### **Protect the Natural Environment**

**Goal:** Maui County's natural environment and distinctive open spaces will be preserved, managed, and cared for in perpetuity.

**Objective:** Improve the stewardship of the natural environment.

**Policy:** Provide public access to beaches and shorelines for recreational and cultural purposes where appropriate.

**Preserve Local Cultures and Traditions**

**Goal:** Maui County will foster a spirit of pono and protect, perpetuate, and reinvigorate its residents' multi-cultural values and traditions to ensure that current and future generations will enjoy the benefits of their rich island heritage.

**Objective:** Perpetuate the Hawaiian culture as a vital force in the lives of residents.

**Policies:** Protect and preserve access to mountain, ocean, and island resources for traditional Hawaiian cultural practices.

Prohibit inappropriate development of cultural lands and sites that are important for traditional Hawaiian cultural practices, and establish mandates for the special protection of these lands in perpetuity.

Promote the use of ahupuaa and moku management practices.

Recognize and preserve the unique natural and cultural characteristics of each ahupuaa or district.

**Objective:** Preserve for present and future generations the opportunity to know and experience the arts, culture, and history of Maui County.

**Policies:** Foster teaching opportunities for cultural practitioners to share their knowledge and skills.

Support the development of cultural centers.

**Objective:** Preserve and restore significant historic architecture, structures, cultural sites, cultural districts, and cultural landscapes.

**Policies:** Protect and preserve lands that are culturally or historically significant.

Perpetuate the authentic character and historic integrity of rural communities and small towns.

Protect summits, slopes, and ridgelines from inappropriate development.

Provide opportunities for public involvement with restoration and enhancement of all types of cultural resources.

Foster partnerships to identify and preserve or revitalize historic and cultural sites.

### **Improve Education**

**Goal:** Residents will have access to lifelong formal and informal educational options enabling them to realize their ambitions.

**Objective:** Provide nurturing learning environments that build skills for the 21st century.

**Policies:** Encourage collaborative partnerships to improve conditions of learning environments.

Promote development of neighborhood schools and educational centers.

Integrate schools, community parks, and playgrounds, and expand each community's use of these facilities.

Design school and park facilities in proximity to residential areas.

Encourage alternative learning and educational opportunities.

**Implementing Action:** Develop safe walking and bicycling programs for school children.

**Objective:** Provide all residents with educational opportunities that can help them better understand themselves and their surroundings and allow them to realize their ambitions.

**Policies:** Promote the teaching of traditional practices, including aquaculture; subsistence agriculture; Pacific Island, Asian, and other forms of alternative health practices; and indigenous Hawaiian architecture.

Integrate cultural and environmental values in education, including self sufficiency and sustainability.

Foster a partnership and ongoing dialogue between business organizations, formal educational institutions, and vocational training centers to tailor learning and mentoring programs to County needs.

**Objective:** Maximize community-based educational opportunities.

**Policies:** Support the development of a wide range of informal educational and cultural programs for all residents.

Attract learning institutions and specialty schools to diversify and enhance educational opportunities.

Support community facilities such as museums, libraries, nature centers, and open spaces that provide interactive-learning opportunities for all ages.

### **Expand Housing Opportunities for Residents**

**Goal:** Quality, island-appropriate housing will be available to all residents.

**Objective:** Reduce the affordable housing deficit for residents.

**Policies:** Ensure that an adequate and permanent supply of affordable housing, both new and existing units, be made available for purchase or rental



to our resident and/or workforce population, with special emphasis on providing housing for low- to moderate-income families, and ensure that all affordable housing remains affordable in perpetuity.

Develop neighborhoods with a mixture of accessible and integrated community facilities and services.

**Objective:** Increase the mix of housing types in towns and neighborhoods to promote sustainable land use planning, expand consumer choice, and protect the County's rural and small-town character.

**Policies:** Design neighborhoods to foster interaction among neighbors.

Encourage a mix of social, economic, and age groups within neighborhoods.

Develop workforce housing in proximity to job centers and transit facilities.

### **Strengthen the Local Economy**

**Goal:** Maui County's economy will be diverse, sustainable, and supportive of community values.

**Objective:** Promote an economic climate that will encourage diversification of the County's economic base and a sustainable rate of economic growth.

**Policies:** Support economic decisions that create long-term benefits.

Support home-based businesses that are appropriate for and in character with the community.

Encourage businesses that promote the health and well-being of the residents, produce value-added products, and support community values.

Support and encourage traditional host-culture businesses and indigenous agricultural practices.

Support public and private entities that assist entrepreneurs in establishing locally operated businesses.

**Objective:** Diversify and expand sustainable forms of agriculture and aquaculture.

**Policy:** Encourage healthy and organic farm practices that contribute to land health and regeneration.

Support cooperatives and other types of nontraditional and communal farming efforts.

### **Improve Parks and Public Facilities**

**Goal:** A full range of island-appropriate public facilities and recreational opportunities will be provided to improve the quality of life for residents and visitors.

**Objective:** Expand access to recreational opportunities and community facilities to meet the present and future needs of residents of all ages and physical abilities.

**Policies:** Protect, enhance, and expand access to public shoreline and mountain resources.

Expand and enhance the network of parks, multi-use paths, and bikeways.

Assist communities in developing recreational facilities that promote physical fitness.

Promote the development and enhancement of community centers, civic spaces, and gathering places throughout our communities.

Expand affordable access to recreational opportunities that support the local lifestyle.

**Objective:** Improve the quality and adequacy of community facilities.

**Policies:** Provide and maintain community facilities that are appropriately designed to reflect the traditions and customs of local cultures.

Maintain, enhance, expand, and provide new active and passive recreational facilities in ways that preserve the natural beauty of their locations.

### **Diversify Transportation Options**

**Goal:** Maui County will have an efficient, economical, and environmentally sensitive means of moving people and goods.

**Objective:** Provide an effective, affordable, and convenient ground-transportation system that is environmentally sustainable.

**Policies:** Plan for the efficient relocation of roadways for the public benefit.

Support the use of alternative roadway designs, such as traffic-calming techniques and modern roundabouts.

Increase route and mode options in the ground-transportation network.

Design new roads and roadway improvements to retain and enhance the existing character and scenic resources of the communities through which they pass.

Promote a variety of affordable and convenient transportation services that meet countywide and community needs and expand ridership of transit systems.

**Objective:** Reduce the reliance on the automobile and fossil fuels by encouraging walking, bicycling, and other energy-efficient and safe alternative modes of transportation.

**Policies:** Make walking and bicycling transportation safe and easy between and within communities.

Require development to be designed with the pedestrian in mind.

Support the reestablishment of traditional trails between communities, to the ocean, and through the mountains for public use.

**Objective:** Improve and expand the planning and management of transportation systems.

**Policies:** Encourage progressive community design and development that will reduce transportation trips.

Accommodate the planting of street trees and other appropriate landscaping in all public rights-of-way.

### **Improve Physical Infrastructure**

**Goal:** Maui County's physical infrastructure will be maintained in optimum condition and will provide for and effectively serve the needs of the County through clean and sustainable technologies.

**Objective:** Improve water systems to assure access to sustainable, clean, reliable, and affordable sources of water.

**Policies:** Ensure that adequate supplies of water are available prior to approval of subdivision or construction documents.

Ensure a reliable and affordable supply of water for productive agricultural uses.

Promote the reclamation of gray water, and enable the use of reclaimed, gray, and brackish water for activities that do not require potable water.

**Objective:** Improve waste-disposal practices and systems to be efficient, safe, and as environmentally sound as possible.

**Policy:** Support innovative and alternative practices in recycling solid waste and wastewater and disposing of hazardous waste.

**Objective:** Significantly increase the use of renewable and green technologies to promote energy efficiency and energy self-sufficiency.

**Policies:** Promote the use of locally renewable energy sources, and reward energy efficiency.

Encourage small-scale energy generation that utilizes wind, sun, water, biowaste, and other renewable sources of energy.

Support green building practices such as the construction of buildings that aim to minimize carbon dioxide production, produce renewable energy, and recycle water.

**Objective:** Direct growth in a way that makes efficient use of existing infrastructure and to areas where there is available infrastructure capacity.

**Policies:** Planning for new towns should only be considered if a region's growth is too large to be directed into infill and adjacent growth areas.

Promote land use patterns that can be provided with infrastructure and public facilities in a cost-effective manner.

**Objective:** Improve the planning and management of infrastructure systems.

**Policy:** Ensure that infrastructure is built concurrent with or prior to development.

## Promote Sustainable Land Use and Growth Management

**Goal:** Community character, lifestyles, economies, and natural assets will be preserved by managing growth and using land in a sustainable manner.

**Objective:** Improve land use management and implement a directed-growth strategy.

**Policies:** Establish, map, and enforce urban- and rural-growth limits.

Direct urban and rural growth to designated areas.

Direct new development in and around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources.

Establish and maintain permanent open space between communities to protect each community's identity.

Preserve the public's rights of access to and continuous lateral access along all shorelines.

Enable existing and future communities to be self-sufficient through sustainable land use planning and management practices.

Protect summits, slopes, and ridgelines from inappropriate development.

**Objective:** Improve planning for and management of agricultural lands and rural areas.

**Policies:** Protect prime, productive, and potentially productive agricultural lands to maintain the islands' agricultural and rural identities and economies.

Provide opportunities and incentives for self-sufficient and subsistence homesteads and farms.

**Objective:** Design all developments to be in harmony with the environment and to protect each community's sense of place.

**Policies:** Support and provide incentives for green building practices.

Protect and enhance the unique architectural and landscape characteristics of each Community Plan Area, small town, and neighborhood.

Ensure that adequate recreational areas, open spaces, and public-gathering places are provided and maintained in all urban centers and neighborhoods.

Ensure business districts are distinctive, attractive, and pedestrian-friendly destinations.

Use trees and other forms of landscaping along rights-of-way and within parking lots to provide shade, beauty, urban-heat reduction, and separation of pedestrians from automobile traffic in accordance with community desires.

Where appropriate, integrate public-transit, equestrian, pedestrian, and bicycle facilities, and public rights-of-way as design elements in new and existing communities.

Ensure better connectivity and linkages between land uses.

Adequately buffer and mitigate noise and air pollution in mixed-use areas to maintain residential quality of life.

Protect rural communities and traditional small towns by regulating the footprint, locations, site planning, and design of structures.

Facilitate safe pedestrian access, and create linkages between destinations and within parking areas.

**Objective:** Improve and increase efficiency in land use planning and management.

**Policies:** Assess the cumulative impact of developments on natural ecosystems, natural resources, wildlife habitat, and surrounding uses.

Ensure that new development projects requiring discretionary permits demonstrate a community need, show consistency with the General Plan, and provide an analysis of impacts.

Promote creative subdivision designs that implement: best practices in land development, sustainable management of natural and physical resources, increased pedestrian and bicycle functionality and safety, and the principles of livable communities.

The development of the Olowalu Town Master Plan embodies the core principles advocated by the Draft Maui County General Plan 2030 Countywide Policy Plan. Since 2005, the Maui community, especially the Olowalu community, has been involved in the planning process and continues to be involved. Respecting its natural environment and cultural heritage, the Olowalu Town Master Plan is modeled after the Hawaiian ahupuaa system of land use recognizing the importance of Olowalu Stream and the connection between the ocean and mountain environments, as well as the rich cultural heritage of the area. The Olowalu Town Master Plan incorporates the principles of sustainability, cultural preservation and economic diversity to create neighborhoods sensitive to its environment and cultural heritage.

The Olowalu Town Master Plan proposes to establish an economic base consisting of agriculture, support services and new entrepreneurialism to support this extended residential community so that it does not become another commuter community. The Olowalu Town Master Plan is envisioned to disperse population growth into a distinct community from Lahaina Town separated by agricultural open space and topographic boundaries. The Master Plan includes retaining Agricultural lands in Olowalu as agricultural homesteads and as part of the Olowalu Cultural Reserve in order to perpetuate native Hawaiian agricultural practices.



In summary, the Olowalu Town Master Plan is consistent with the themes and principles of the Countywide Policy Plan.

### **Maui Island Plan**

The second component of the Maui County General Plan 2030 is the Maui Island Plan (MIP). The MIP will set forth an islandwide land use strategy for Maui and encompasses a managed and directed growth plan which includes the delineation of urban and rural growth boundaries. The MIP has undergone review by the General Plan Advisory Committee and the Maui Planning Commission and is currently under review by the Maui County Council. Both the General Plan Advisory Committee and Maui Planning Commission recommended the inclusion of portions of the Olowalu Master Plan in the MIP. The Planning Director's transmittal of the MIP to the Maui County Council on October 16, 2009 excluded the Olowalu Master Plan from the MIP's directed growth boundaries. While the process for review and approval of the MIP is ongoing, the applicant will continue to be an active participant in the MIP process. It is noted that the respective regional community plans will be updated following the adoption of the MIP.

## **E. WEST MAUI COMMUNITY PLAN**

Within Maui County, there are nine (9) community plan regions. From a General Plan implementation standpoint, each region is governed by a community plan which sets forth desired land use patterns, as well as goals, objectives, policies, and implementing actions for a number of functional areas including infrastructure-related parameters. The proposed Olowalu Town Master Plan project is located within the West Maui Community Plan region. The existing land use designations for the Master Plan area under the Community Plan are set forth in the existing West Maui Community Plan Land Use Map. The lands underlying the Master Plan area are designated "Agricultural", "Conservation", and "Park" on the Land Use Map. Refer to **Figure 6**.

At the appropriate time, the applicant will file a Community Plan Amendment application to change the designation from "Agricultural", "Conservation", and "Park" to "Project District" to reflect the land use spatial relationships and allocations set forth in the proposed Master Plan. To implement the Olowalu Master Plan, the amendment will also include a revision to the following Land Use Objective and Policy:

*The development of a public beach park at Olowalu near Camp Pecusa for camping and ocean-related recreational and educational activities. The final*

*boundaries of this park shall be determined in consultation with the landowner. However, if agriculture in the area is decreased by 50 percent, 20 acres of park land shall be considered for addition to the 10 acres of park land currently designated in the Land Use Map.*

Examples of goals, objectives, and policies from the West Maui Community Plan supporting the proposed Master Plan are provided below:

## **LAND USE**

### **Goal:**

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

### **Objectives and Policies:**

- Preserve and enhance the mountain and coastal scenic vistas and the open space areas of the region.
- Establish an appropriate supply of urban land within the region to meet the needs of the community over the next 20 years. The Community Plan and its map shall define the urban growth limits for the region and all zoning requests and/or proposed land uses and developments shall be consistent with the West Maui Community Plan and its land use map.
- Provide and maintain parks and beach access for the present and future needs of residents and visitors. For the areas outside Lahaina town, establish or expand parks and public shoreline areas to include but not limited to the following:
  - The development of a public beach park at Olowālu near Camp Pecusa for camping and ocean-related recreational and educational activities. The final boundaries of this park shall be determined in consultation with the landowner. However, if agriculture in the area is decreased by 50 percent, 20 acres of park land shall be considered for addition to the 10 acres of park land currently designated in the Land Use Map.

## **ENVIRONMENT**

### **Goal:**

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

### **Objectives and Policies:**

- Integrate stream channels, gulches and other areas deemed unsuitable for development into the region's open space system for the purposes of safety, open space relief, greenways for public use and visual separation. Existing development of these stream channels, gulches and other areas shall be maintained and shall not be expanded. Drainage channels and siltation basins should not be considered for building sites, but used, rather, for public open space.

## **CULTURAL RESOURCES**

### **Goal:**

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

### **Objectives and Policies:**

- Preserve and protect significant archaeological, historical and cultural resources that are unique in the State of Hawaii and Island of Maui.
- Foster an awareness of the diversity and importance of cultural resources and of the history of Lahaina.
- Encourage and protect traditional shoreline and mountain access, cultural practices and rural/agricultural lifestyles. Ensure adequate access to our public shoreline areas for public recreation, including lateral continuity.
- Promote distinct cultural resources as an identifying characteristic of the region.
- Ensure that new projects or developments address potential impacts on archaeological, historical, and cultural resources and identify all cultural resources located within the project area as part of initial project studies. Further require that all proposed activity adequately mitigate potential adverse impacts on cultural resources.

- Recognize the importance of buffer areas to enhance and protect historical or archaeological sites.
- Encourage community stewardship of historic sites.
- Encourage the development of "cultural parks" for visitation and education.
- Important site types and areas in the West Maui region include but are not limited to the following:
  - Olowalu Church ruins
  - Olowalu heiau
  - Camp Pecusa
  - Olowalu petroglyphs

## **HOUSING**

### **Goal:**

A sufficient supply and choice of attractive, sanitary and affordable housing accommodations for a broad cross section of residents.

### **Objectives and Policies:**

- Accommodate the 20-year housing needs of the planning region.
- Provide a variety of affordable housing opportunities, including improved lots and self-help projects and special needs housing for the elderly, single parent families, homeless and disabled.
- Coordinate the planning, design and construction of public infrastructure improvements with major residential projects that have an affordable housing component.
- Promote efficient housing designs in order to reduce residential home energy consumption.
- Maintain acceptable standards for affordable housing projects, including but not limited to, the installation of sidewalks and provision of adequate off-street parking.
- Support efforts to develop housing for the elderly and for the homeless.

## **URBAN DESIGN**

### **Goal:**

An attractive and functionally integrated urban environment enhances neighborhood character, promotes quality design at the resort destinations of Kaanapali and Kapalua, defines a unified landscape planting and beautification theme along major public roads and highways, watercourses, and at major public facilities, and recognizes the historic importance and traditions of the region.

### **Objectives and Policies:**

- Enhance the appearance of major public roads and highways of the region.
- Improve pedestrian and bicycle access within the region.
- Enhance the appearance of major public roads and highways in the region.
- Improve pedestrian and bicycle access within the region.
- Integrate stream channels and gulches into the region's open space system for the purposes of safety, open space relief, greenways for public use and visual separation. Drainage channels and siltation basins should not be used for building sites, but, rather, for public open space. Drainage channel rights-of-way and easements may also be used for pedestrian walkways and bikeway facilities.
- Promote a unified street tree planting scheme along major highways and streets. Hedge planting should be spaced and limited in height, in order to provide vistas to the shoreline and mountains.
- Maintain shrubs and trees at street intersections for adequate sight distance.
- Save and incorporate healthy mature trees in the landscape planting plans of subdivisions, roads or any other construction or development.
- Incorporate drought-tolerant plant species in future landscape planting.
- Existing and future public rights-of-way along roads and parks shall be planted with appropriate trees, turfgrass and ground covers.
- Emphasize contrasting earth-tone color schemes for buildings and avoid bright or garish colors.

## **INFRASTRUCTURE**

### **Goal:**

Timely and environmentally sound planning, development, and maintenance of infrastructure systems which serve to protect and preserve the safety and health of the region's residents, commuters, and visitors through the provision of clean water, effective waste disposal and efficient transportation systems which meet the needs of the community.

### **Objectives and Policies (Transportation):**

- Support ridesharing, programs to promote safe bicycle and pedestrian travel, alternative work schedules, traffic signal synchronization and other transportation demand management strategies.
- Promote residential communities that provide convenient pedestrian and bicycle access between residences and neighborhood commercial areas, parks and public facilities, in order to minimize use of automobile.
- Provide a landscaped buffer area along Honoapiilani Highway to enhance both pedestrian and vehicular circulation, as well as to soften the effects of the built environment.

### **Objectives and Policies (Water and Utilities):**

- Coordinate expansion of and improvements to water system to coincide with the development of residential expansion areas.
- Encourage the installation of underground electrical, telephone and cable television lines.
- Encourage reasonable rates for water and public utility services.

### **Objectives and Policies (Drainage):**

- Construct necessary drainage improvements in flood-prone areas, incorporating landscaped swales and unlined channels to provide open space continuity. Urge the use of landscaped/green belt drainage channels as opposed to concrete-lined channels or culverts.
- Insure that new developments will not result in adverse flooding conditions for downstream properties by requiring onsite retention facilities for stormwater run off generated by the development.

### **Objectives and Policies (Energy):**

- Promote energy efficiency as the energy resource of first choice and seek to increase energy efficiency in all sectors in the community.

### **SOCIAL INFRASTRUCTURE**

#### **Goal:**

Develop and maintain an efficient and responsive system of public services which promotes a safe, healthy and enjoyable lifestyle, and offers opportunities for self improvement and community well being.

### **Objectives and Policies (Recreation and Open Space):**

- Provide adequate community-oriented park facilities including facilities for field and court games, children's play and picnicking within, or adjacent to, existing and future residential areas at the following existing or planned park sites:
  - Major residential projects.
- Provide resource-oriented regional park facilities and public access along the shoreline for picnicking, camping, informal play, swimming, sunbathing, and other coastal-related activities along coastal lands makai of the existing or future realigned coastal highways from Honokahua Bay to the district's north boundary and from Puamana to the district's south boundary, except for the agriculture designated lands makai of the highway at Olowalu.
- Establish adequate public access to suitable mauka recreational areas for hiking, hunting, camping, nature study, and other back country, leisure time activities, based on a mountain access study.
- Provide public camping areas along the shoreline of the region, such as at Olowalu near Camp Pecusa.
- Ensure adequate public access to shoreline areas, including lateral access to establish the continuity of public shorelines.
- Establish park areas appropriate for nature study.

**Objectives and Policies (Education):**

- Encourage the development of child care and pre-school facilities, in conjunction with major centers of employment.

**Objectives and Policies (Health and Public Safety):**

- Encourage the expansion of community and social service facilities and programs in West Maui in convenient and accessible locations through public and private partnerships.
- Support the expansion of child care facilities in West Maui.

**F. COUNTY ZONING**

The proposed Master Plan is predominantly zoned “Agricultural” by the County. A portion of the Master Plan on the makai side of Honoapiilani Highway is zoned “R-3 Residential”, “A-3 Apartment”, and “Hotel” on Land Zoning Map No. 7 Olowalu Town.

To implement the Olowalu Town Master Plan, a Project District zoning designation will be required. In addition, a Project District Phase I approval, setting forth the zoning performance standards, will be required. In this regard, Olowalu Town, LLC proposes the use of a model Smart Code which serves as a unified development ordinance that encourages a market-driven alternative to conventional suburban development. The proposed code will address traditional neighborhood design attributes which promote walkability, reduce the number and length of automobile trips, provide neighborhoods of appropriate scale and quality, provide building concentrations at easy walking distance from public transportation, provide a full range of housing product types, and provide a suitable mix of civic buildings and spaces. The Draft EIS will provide additional information regarding the proposed Smart Code.

**G. PROJECT DISTRICT PROCESSING REQUIREMENTS**

The implementation of the Olowalu Master Plan will follow the requirements of Chapter 19.45 of the Maui County Code relating to Project District Processing Regulations. Project District Phase II and Phase III approval will be sought as each phase of implementation is detailed and designed.



## **H. COASTAL ZONE MANAGEMENT**

The Hawaii Coastal Zone Management Program (HCZMP), as formalized in Chapter 205A, HRS, establishes objectives and policies for the preservation, protection, and restoration of natural resources of Hawaii's coastal zone. The County of Maui utilizes its Special Management Area (SMA) regulatory mechanism to implement the HCZMP. Portions of the Master Plan are within the County of Maui's Special Management Area (SMA). Refer to **Figure 7**. As set forth in Chapter 205A, HRS, this section addresses the project's relationship to applicable coastal zone management considerations. The responses provided herein will be updated and further detailed as results of the various technical studies being conducted for the Draft EIS are made available.

### **1. Recreational Resources**

#### **Objective**

Provide coastal recreational opportunities accessible to the public.

#### **Policies**

- (A) Improve coordination and funding of coastal recreational planning and management; and
- (B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
  - (i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
  - (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;
  - (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
  - (iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

- (v) Ensuring public recreational use 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;
- (vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;
- (vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and
- (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, county planning commissions; and crediting such dedication against the requirements of Section 46-6, HRS.

**Response** As discussed in Chapter II, recreational opportunities will be provided through additional park and open space areas included as part of the proposed project. The Draft EIS will further address specifics regarding these allocations, as well as other recreational resource impacts.

## 2. **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.

### **Policies**

- (A) Identify and analyze significant archeological resources;
- (B) Maximize information retention through preservation of remains and artifacts or salvage operations; and
- (C) Support state goals for protection, restoration, interpretation, and display of historic resources.

**Response** Previous archaeological inventory surveys were prepared for the Master Plan area for the Olowalu Town subdivision. These surveys will be updated

during the Draft EIS process and reviewed by SHPD. Appropriate mitigation measures will be included in the Draft EIS.

### 3. **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;
- (B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;
- (C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and
- (D) Encourage those developments which are not coastal dependent to locate in inland areas.

**Response** The Master Plan area is located along the coastal plain and foothills of Olowalu. The Olowalu Master Plan offers an architecturally integrated plan which sets standards for height, landscaping and open space corridors. Details of design and performance standards as it relate to views will be further addressed in the Draft EIS.

### 4. **Coastal Ecosystems**

#### **Objective**

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

#### **Policies**

- (A) Improve the technical basis for natural resource management;

- (B) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
- (C) 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
- (D) Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.

**Response** Appropriate Best Management Practices (BMPs) and erosion-control measures will be implemented to minimize the effects of stormwater runoff resulting from the implementation of the Master Plan and to ensure that coastal ecosystems are not adversely impacted by construction activities. Potential impacts on coastal ecosystems will be discussed in detail in the Draft EIS document. Further, to reduce impacts on Olowalu Stream, the stream area is included in the Olowalu Cultural Reserve. Within the Olowalu Cultural Reserve, the Master Plan is limited to the preservation of archaeological, historic and cultural sites and agricultural activities envisioned to incorporate the ahupuaa system of agriculture practiced by early Hawaiians.

## 5. **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;
- (B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor 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
- (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:

- (i) Use of presently designated locations is not feasible;
- (ii) Adverse environmental effects are minimized; and
- (iii) The development is important to the State's economy.

**Response** In order to develop the Master Plan, an economic study was prepared as a key component for the re-establishment of Olowalu Town. The Master Plan is envisioned to stimulate the economy both short term and long term. The economic study will be updated and discussed in detail in the Draft EIS document.

## 6. **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;
- (B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint pollution hazards;
- (C) Ensure that developments comply with requirements of the Federal Flood Insurance Program;
- (D) Prevent coastal flooding from inland projects; and
- (E) Develop a coastal point and nonpoint source pollution control program.

**Response** As described in Chapter II, the Master Plan area falls within multiple flood zone categories. Land planning principles will be employed to respect flood-sensitive areas. Drainage improvements will be designed in accordance with applicable regulatory standards to ensure that the project will not adversely affect downstream properties from the effects of flooding and erosion. Results of the preliminary drainage report will be included in the Draft EIS. Further, the Master Plan observes a 150-foot shoreline setback established in the SMA permit for the Olowalu Town Subdivision to ensure development is not threatened by shoreline erosion and storm wave action.

7. **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;
- (B) Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and
- (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.

**Response** Public input will be solicited in coordination with the processing of the Draft EIS, pursuant to the Chapter 343, HRS, Environmental Impact Statement review process. The district boundary amendment, Community Plan Amendment, Change in Zoning, Project District, and Special Management Area application processes involve review by various governmental agencies, including the State Land Use Commission, the Maui Planning Commission and the Maui County Council. The public is afforded the opportunity to participate in hearings on these processes. Coordination with other organizations and individuals will be undertaken in conjunction with the foregoing processes.

Applicable Federal, State, and County requirements will be adhered to in the planning, design, and construction of the project.

8. **Public Participation**

**Objective**

Stimulate public awareness, education, and participation in coastal management.

## **Policies**

- (A) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program;
- (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-related issues, developments, and government activities; and
- (C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

**Response** The Olowalu Town Master Plan was developed utilizing a community-based planning process referred to as “Olowalu Talk Story”. The week-long series of workshops held in November 2005, involved more than 1,350 participants to help guide the formulation of the Master Plan. Olowalu Town, LLC’s planning consultant, Duany Plater-Zyberk & Company, took the input provided at the workshops to develop the land plan concept. Values expressed at the workshops included, among several, the need to protect the environment, preserve culture, provide affordable housing, improve infrastructure, strengthen the island’s economy, and preserve and enhance shoreline access.

The applicant continues to recognize the importance of community input with ongoing meetings with local residents and organizations.

Public input will continue to be solicited in coordination with the processing of the Draft EIS, pursuant to the Chapter 343, HRS environmental assessment review process, the State District Boundary Amendment, County Change-in-Zoning, Project District, and SMA processes. All aspects of development will be conducted in accordance with applicable Federal, State and County standards.

## **9. Beach Protection**

### **Objective**

Protect beaches for public use and recreation.

### **Policies**

- (A) Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;
- (B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and
- (C) Minimize the construction of public erosion-protection structures seaward of the shoreline.

**Response** In broad terms, the project will utilize appropriate BMPs to manage overall drainage for the Master Plan area. In the long term, the Master Plan will contain a comprehensive drainage system that will retain project-related incremental increases in runoff. Further, details regarding the impact of drainage on water quality and coastal processes offshore of Olowalu will be addressed in the Draft EIS. As previously stated, the Master Plan observes a minimum 150 feet shoreline setback to ensure the development is not threatened by shoreline erosion and storm wave action.

## **10. Marine Resources**

### **Objective**

Implement the State's ocean resources management plan.

### **Policies**

- (A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- (B) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;
- (C) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;
- (D) 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;



- (E) 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
- (F) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

**Response** A marine biological and water quality baseline study will be undertaken for the Olowalu area. The results of the study will be reported in the Draft EIS.

In addition to the aforementioned objectives and policies, SMA permit review criteria, pursuant to Act 224 (2005) provides that:

No special management areas use permit or special management area minor permit shall be granted for structures that allow artificial light from floodlights, uplights or spotlights used for decorative or aesthetic purposes when the light:

- (1) Directly illuminates the shoreline and ocean waters; or
- (2) Is directed to travel across property boundaries toward the shoreline and ocean waters.

**Response** Designs for outdoor lighting will consider the need to respect the night sky, while providing an appropriate level of safety and security. Placement and designs of lighting fixtures in common and public areas will address the need to minimize light “spillage” across project boundary lines and towards the shoreline.

## **I. OTHER REGULATORY APPROVALS**

In connection with the filing of the Draft EIS document, coordination will be undertaken with the U.S. Department of the Army regarding permitting requirements associated with the Master Plan within the project area and surrounding environs. Similar coordination with the State Department of Health and State Office of Planning will be conducted to determine the applicability of Section 401 Water Quality Certification, and Coastal Zone Management Consistency Approval, respectively. The results of the foregoing coordination will be incorporated in the Draft EIS document.

## **IV. ALTERNATIVES TO THE PROPOSED ACTION**

## **IV. ALTERNATIVES TO THE PROPOSED ACTION**

### **A. FORMULATION OF THE PREFERRED ALTERNATIVE**

The preferred alternative described in Chapter I of this document was developed through an extensive public process intended to ensure that the Master Plan addressed the following fundamental planning principles:

- Create walkable neighborhoods
- Encourage community and stakeholder collaboration
- Foster distinctive, attractive communities with a strong sense of place
- Provide a mix of land uses
- Respect local culture and environment

Through the planning process, the project's land planning consultant developed various iterations of the land plan, with the selected plan being deemed most appropriate in terms of the foregoing criteria and in terms of adaptability to the land zoning code proposed for the Master Plan. Select alternatives identified in the planning process will be discussed in the Draft EIS.

### **B. NO-ACTION ALTERNATIVE AND DEFERRAL OF ACTION ALTERNATIVE**

The no action and deferred action alternatives would leave the site in its current limited agricultural use. These alternatives would involve neither a commitment of resources, nor short- and long-term environmental effects related to the implementation of the project. The context for the no-action and deferred action alternatives, however, must be viewed in terms of broader needs of the community, particularly housing for residents. The need to consider land use alternatives to accommodate future population growth in a manner which is addressed comprehensively through a master planning process is essential to sustaining

resident need for housing and business opportunities over the planning horizon set forth by the County's proposed Countywide Policy Plan and proposed Maui Island Plan.

Both the no-action and deferred action alternatives were not deemed appropriate as a result.

**C. OTHER ALTERNATIVES**

As technical studies for the Draft EIS are completed, other types of alternatives may need to be discussed. For example, infrastructure system alternatives relating to wastewater disposal, or highway facilities development alternatives for the envisioned Bypass Highway may need to be addressed in the Draft EIS. These factors will be evaluated as the technical studies are undertaken and discussion incorporated in the Alternatives chapter of the Draft EIS, as applicable.

**V. SUMMARY OF  
UNAVOIDABLE IMPACTS  
AND IRREVERSIBLE/  
IRRETRIEVABLE  
COMMITMENTS OF  
RESOURCES**

## **V. SUMMARY OF UNAVOIDABLE IMPACTS AND IRREVERSIBLE/IRRETRIEVABLE COMMITMENTS OF RESOURCES**

The Olowalu Town Master Plan will result in unavoidable construction-related environmental impacts as outlined in Chapter II.

Potential effects include noise-generated impacts occurring during the site preparation and construction phases of the proposed development. Air quality impacts will also arise as a direct result of construction activities, such as the generation of dust and other airborne pollutants. Olowalu is an area subject to regular prevailing winds which will help to dissipate any airborne pollutants.

Assessment of appropriate mitigation measures to these impacts will be carried out during preparation of the Draft EIS, which will also identify other potential impacts and mitigation measures.

Implementation of the proposed Master Plan will result in the irreversible and irretrievable commitment of land and fiscal resources. Other resource commitments include energy, labor, and material resources. This commitment, however, is considered appropriate insofar as the Master Plan will re-vitalize Olowalu again into a thriving community where residents will have an opportunity to live and work.

Addressing land use development issues and market needs from a comprehensive master planning perspective provides an efficient and effective means of developing and implementing infrastructure and related service components. It is in this context that commitment of resources will be considered in the Draft EIS.

# **VI. SIGNIFICANCE CRITERIA ASSESSMENT**

## VI. SIGNIFICANCE CRITERIA ASSESSMENT

The Master Plan, its expected primary and secondary consequences, as well as the short- and long-term effects of the action, have been evaluated in accordance with the Significance Criteria of Section 11-200-12 of the Hawaii Administrative Rules. A more thorough review and assessment of the significance criteria will be presented in the Draft EIS once remaining technical studies have been completed. Considerations for preliminary significance criteria assessment are presented below.

1. **Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.**

Previous archaeological studies for the Master Plan area were prepared during the Olowalu Town Subdivision project, which created the Olowalu Cultural Reserve to protect archaeological, historic and cultural resources. The Master Plan incorporates the Olowalu Cultural Reserve as a significant component for the revitalization of Olowalu Town. The archaeological studies will be updated and a cultural impact assessment study conducted for the Master Plan which will be included in the Draft EIS document. Appropriate mitigation measures will be undertaken in coordination with the State Historic Preservation Division (SHPD).

The Master Plan's potential impact to natural resources and proposed mitigation measures will be assessed once preliminary engineering and environmental studies are available and will be included in the Draft EIS.

2. **Curtails the range of beneficial uses of the environment.**

Implementation concepts for the Master Plan allows for the identification of applicable Best Management Practices (BMPs) to minimize adverse impact to the environment. In this regard, technical studies to be prepared and included in the Draft EIS will contribute to the environmental review process. For example, assessment of drainage will be investigated during the EIS preparation phase and the findings will be used to assess potential impacts and mitigation measures to ensure the Master Plan will not curtail the beneficial uses of the environment, especially the offshore waters of Olowalu.



3. **Conflicts with the state’s long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.**

The State’s Environmental Policy and Guidelines are set forth in Chapter 344, Hawaii Revised Statutes (HRS). Upon completion of remaining investigations for the EIS document, an assessment of the Master Plan relative to the policies and guidelines will be undertaken.

4. **Substantially affects the economic welfare, social welfare, and cultural practices of the community or State.**

The Master Plan will directly benefit the local economy by providing construction and construction-related employment. In the long term, the Master Plan will support the local economy through the contribution of salaries, wages, benefits and taxes, as well as through purchase of goods and services. It is anticipated that the Master Plan will provide housing and business opportunities to residents not only of West Maui, but on Maui Island. An Economic Impact Assessment for the Master Plan will be undertaken with its results incorporated in the Draft EIS.

5. **Substantially affects public health.**

There are no adverse impacts to public health anticipated as a result of Master Plan implementation. Notwithstanding, review of public health impact consideration will be carried out as part of the Draft EIS preparation process.

6. **Involves substantial secondary impacts, such as population changes or effects on public facilities.**

The Master Plan proposes the re-establishment of a once thriving community in the West Maui region. The Master Plan will create a need for public services in the region such as schools, police and fire protection. The provision of land use allocations to meet these needs have been considered as part of the master planning process. Further coordination will be undertaken during the Draft EIS with State and County agencies, as well as utility and public service providers, to address services and facilities requirements for the Master Plan.

7. **Involves a substantial degradation of environmental quality.**

A full range of technical studies will be incorporated in the Draft EIS to address appropriate mitigation measures to minimize environmental degradation. For example, preliminary engineering work will investigate drainage options to mitigate adverse impacts to downstream or adjacent properties. Archaeological and biological investigations will be conducted to ensure that valued historical and biological resources are appropriately treated. Marine processes and marine water quality will be investigated and appropriate mitigation measures identified, as applicable.

8. **Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.**

The Master Plan reflects a comprehensive plan for Olowalu and there are no additional development components associated with the Master Plan. Accordingly, the impacts to be assessed in the Draft EIS document will be based on the entire action.

9. **Substantially affects a rare, threatened, or endangered species, or its habitat.**

Previous biological resources investigations have been completed in Olowalu. Sensitive habitat areas such as the area along Olowalu Stream were included in the Olowalu Cultural Reserve. As deemed appropriate, updated biological resources studies will be conducted and will be included in the Draft EIS document.

10. **Detrimentially affects air or water quality or ambient noise levels.**

Construction activities will result in short-term air quality and noise impacts. Dust control measures, such as regular watering and sprinkling, and installation of dust screens, will be implemented to minimize wind-blown emissions. Noise impacts will occur primarily from construction equipment. Equipment mufflers or other noise attenuating equipment, as well as proper equipment and vehicle maintenance, will be used during construction activities. Construction noise impacts will be mitigated through compliance with the provisions of the State of Hawaii, Department of Health Administrative Rules, Title 11, Chapter 46, "Community Noise Control". These rules require a noise permit if the noise levels from construction activities are expected to exceed the allowable levels set forth in the Chapter 46 rules.

Long-term impacts on and mitigation of noise and water quality resulting from the proposed project will be discussed in greater detail and the results incorporated into the Draft EIS document.

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

The Master Plan contains environmentally sensitive areas, such as reef systems and flood hazard areas. A discussion relating to its impacts and mitigation measures will be studied in greater detail and the results incorporated into the Draft EIS document.

**12. Substantially affects scenic vistas and viewplanes identified in county or state plans or studies.**

Effects to scenic and open space resources and scenic view corridors resulting from the Master Plan will be studied in greater detail and the results incorporated into the Draft EIS document.

**13. Requires substantial energy consumption.**

The Master Plan will involve the commitment of fuel for construction equipment, vehicles, and machinery during construction and maintenance activities.

Coordination with Maui Electric Company (MECO) will be undertaken during the preparation of the Draft EIS to ensure that appropriate planning is implemented to address power supply issues. Further, measures to reduce the energy consumption of the Master Plan through LEED certified Neighborhood Development or similar programs will be discussed in the Draft EIS document.

Given the relatively large acreage of the proposed Master Plan and the potential impacts that need to be addressed in greater detail, it has been determined that an Environmental Impact Statement is warranted pursuant to Chapter 343, Hawaii Revised Statutes and Chapter 200 of Title 11, Department of Health Administrative Rules, Environmental Impact Statement Rules.

## **VII. LIST OF PERMITS AND APPROVALS**

## **VII. LIST OF PERMITS AND APPROVALS**

The following is a preliminary list of permits and approvals that are anticipated for project implementation:

### **Federal**

1. Department of Army Permit, as applicable

### **State of Hawaii**

1. State Land Use District Boundary Amendment
2. National Pollutant Discharge Elimination System (NPDES) permits, as applicable
3. Section 401 Water Quality Certification, as applicable
4. Coastal Zone Management Consistency Review Approval, as applicable
5. Permit to work within State highway right-of-way

### **County of Maui**

1. West Maui Community Plan Amendment
2. Change in Zoning
3. Project District Phase I, Phase II and Phase III Approvals
4. Special Management Area Use Permit (for actions falling within the SMA)
5. Subdivision Approval
6. Construction Permits

**VIII. OTHER ELEMENTS  
TO BE ADDRESSED IN  
THE DRAFT  
ENVIRONMENTAL  
IMPACT STATEMENT**

## **VIII. OTHER ELEMENTS TO BE ADDRESSED IN THE DRAFT ENVIRONMENTAL IMPACT STATEMENT**

The Draft EIS will address all elements of Section 11-200-16 of the Hawaii Administrative Rules relating to Environmental Impact Statements. This section of the rules provides that the Draft EIS address specific content requirements for EIS documents. Information to complete these sections of the EIS document will be gathered through the technical studies to be completed, as well as comments received in the review of the EA/EISPN document. In this regard, the Draft EIS will also address the following topics:

- Relationship between local short-term uses of humanity's environment and the maintenance and enhancement of long-term productivity; and
- Unresolved issues

**IX. EARLY  
CONSULTATION WITH  
COMMUNITY IN  
PREPARATION OF THE  
ENVIRONMENTAL  
ASSESSMENT/  
ENVIRONMENTAL  
IMPACT STATEMENT  
PREPARATION NOTICE**



# IX. EARLY CONSULTATION WITH COMMUNITY IN PREPARATION OF THE ENVIRONMENTAL ASSESSMENT/ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE

In November 2005, the project developers invited the residents of Maui to attend *Olowalu Talk Story*, a week-long community-based planning workshop, to help plan the community at Olowalu. Sixty-five thousand (65,000) *Olowalu Talk Story* newspapers were mailed to every mailbox on the island. Over 1,350 people came to participate in *Olowalu Talk Story*, of which over 51 percent of the participants had been living on Maui for more than 20 years.

The conceptual Olowalu Master Plan is the result of the efforts of the participants working together to create a plan which was reflective of both Maui's small town values and innovative design concepts. Since 2005, the project developers have continued the community based planning process, including meetings with neighborhood boards, community organizations, non-profit groups, elected and appointed government officials, community presentations, dialogue and feedback. As part of this continuing community effort in July 2007, a 12-page newspaper was published and mailed to every postal address on Maui to provide a courtesy update on the results of *Olowalu Talk Story* and seek additional community feedback. See **Appendix "B"**.

# OLOWALU TOWN MASTER PLAN

## EARLY CONSULTATION MEETINGS

(Before & After Nov. 2005 Talk-Story Planning Workshop)

---

In addition to the week-long Olowalu Talk Story planning workshop in November 2005, a significant component of Olowalu Town's community-based planning process involved an extensive number of *Early Consultation* meetings with both public and private agencies/groups, as well as, concerned individuals of the community. The purpose and intent of the meetings were not to seek approval or support of the Master Plan; rather, the meetings provided an opportunity for the project managers to share and discuss the conceptual Master Plan, and more importantly, receive valuable feedback and suggestions related to possible issues and/or concerns. Since mid-2005 thru December 2009, the project developers have met with a wide range of groups or entities, including Maui's residents, associations, community leaders, and public officials. The following is a brief listing of these groups/entities:

<b>DATE</b>	<b>GROUP/ENTITY</b>	<b>LOCATION</b>
▪ July 2005	Maui County General Plan Planning Consultant	Honolulu, Oahu
▪ August 2005	Maui Tomorrow Foundation	Makawao, Maui
▪ August 2005	Sierra Club, Maui Chapter, Executive Committee	Paia, Maui
▪ September 2005	Olowalu Village Residents	Olowalu, Maui
▪ September 2005	West Maui Residents & Other Maui Residents	Olowalu, Maui
▪ September 2005	State Department of Transportation - Highways Division	Honolulu, Oahu
December 2005	same as above (2 <sup>nd</sup> meeting)	Honolulu, Oahu
September 2006	same as above (3 <sup>rd</sup> meeting)	Honolulu, Oahu
▪ September 2005	Hawaii Carpenter Union, Maui Office Representative	Wailuku, Maui
▪ September 2005	Maui Chamber of Commerce	Wailuku, Maui
▪ September 2005	U.S. Green Building Council & LEED Rep.	Wailuku, Maui
▪ September 2005	Maui Coastal Land Trust	Wailuku, Maui
March 2006	same as above (2 <sup>nd</sup> meeting)	Olowalu, Maui
▪ September 2005	Maui County Council Member, Charmaine Tavares	Wailuku, Maui
▪ September 2005	Maui County Planning Department, Director, Deputy, and Staff	Wailuku, Maui
February 2007	same as above (2 <sup>nd</sup> meeting)	Wailuku, Maui
April 2007	same as above (3 <sup>rd</sup> meeting)	Wailuku, Maui
February 2008	same as above (4 <sup>th</sup> meeting)	Wailuku, Maui
▪ September 2005	Executive Assistants for former Mayor of Maui	Wailuku, Maui
▪ September 2005	Maui County Environmental Coordinator	Wailuku, Maui
▪ September 2005	Tri-Isle Main Street Resource Center/Wailuku Main St. Assoc.	Wailuku, Maui

Early Consultation List

Page 2

▪ September 2005	Greenways Maui	Wailuku, Maui
▪ September 2005	M.E.D.B Executive Director	Wailuku, Maui
▪ September 2005 November 2005 February 2006	Former Maui County Mayor, Alan Arakawa same as above (2 <sup>nd</sup> meeting) same as above (3 <sup>rd</sup> meeting)	Wailuku, Maui Kahului, Maui Kahului, Maui
▪ September 2005	American Institute of Architects, Maui Chapter	Wailuku, Maui
▪ September 2005	Public Works/Environmental Management, Director and Deputy,	Wailuku, Maui
▪ October 2005	Maui Economic Opportunity (MEO), Executive Director	Wailuku, Maui
▪ October 2005	West Maui Taxpayer's Association, Executive Director	Wailuku, Maui
▪ November 2005	Maui Cultural Lands, Ed and Pua Lindsey	Honokowai, Maui
▪ November 2005	Maui County Department of Parks, Deputy	Wailuku, Maui
▪ November 2005	Maui County Department of Transportation, Director and Deputy	Wailuku, Maui
▪ November 2005	Maui County Police Department, West Maui Division	Wailuku, Maui
▪ November 2005	County Department of Housing & Human Concerns, Director	Wailuku, Maui
▪ November 2005	Maui County Department of Fire, Deputy	Wailuku, Maui
▪ November 2005	Olowalu Cultural Reserve, Board of Directors	Olowalu, Maui
▪ November 2005 February 2006	Former Mayor, Alan Arakawa same as above (2 <sup>nd</sup> meeting)	Kahului, Maui Kahului, Maui
▪ December 2005	State Association of Professional Engineers, Maui Chapter	Wailuku, Maui
▪ December 2005	West Maui Mountains Watershed Partnership, Director	Olowalu, Maui
▪ January 2006	Wailuku Rotary Club	Wailuku, Maui
▪ January 2006 August 2007	State Senator Roz Baker same as above (2 <sup>nd</sup> meeting)	Kihei, Maui Lahaina, Maui
▪ January 2006	Maui Contractor's Association	Kahului, Maui
▪ January 2006	Na Kupuna O Maui	Olowalu, Maui
▪ January 2006	Maui County Council Member, Michelle Anderson	Wailuku, Maui
▪ February 2006 July 2007	Maui County Council Member, Joanne Johnson same as above (2 <sup>nd</sup> meeting)	Wailuku, Maui Wailuku, Maui
▪ February 2006	Kahului Rotary Club	Kahului, Maui
▪ February 2006 February 2007 January 2008	West Maui Taxpayer's Association, Annual Meeting same as above (2 <sup>nd</sup> meeting) same as above (3 <sup>rd</sup> meeting)	Lahaina, Maui Lahaina, Maui Lahaina, Maui

Early Consultation List

Page 3

- March 2006 Maui Young Business Round Table Leaders Kahului, Maui
- May 2006 Maui County Council Member, Charmaine Tavares Wailuku, Maui
- July 2006 West Maui Chamber of Commerce Lahaina, Maui
- August 2006 Kihei-Wailea Rotary Club Wailea, Maui
- August 2006 American Institute of Architects, Maui Chapter Wailuku, Maui
- January 2007 Maui County Council Member, Gladys Baisa Wailuku, Maui  
July 2007 same as above (2<sup>nd</sup> meeting) Wailuku, Maui
- January 2007 Maui County Council Member, William Medeiros Wailuku, Maui
- January 2007 Lahaina-Honolua Senior Citizens Club Lahaina, Maui  
March 2008 same as above (2<sup>nd</sup> meeting) Lahaina, Maui
- July 2007 Maui County Council Member, Riki Hokama Wailuku, Maui
- July 2007 Maui County Council Member, Danny Mateo Wailuku, Maui
- July 2007 Maui County Council Member, Mike Molina Wailuku, Maui
- July 2007 Lahaina Rotary, Sunrise Club Lahaina, Maui
- August 2007 Maui Chamber of Commerce, West-Side Lahaina, Maui
- August 2007 State Representative Joe Bertram Kihei, Maui
- August 2007 Maui County Council Member, Mike Victorino Wailuku, Maui
- August 2007 State Representative Angus McKelvey Lahaina, Maui
- August 2007 Council on Aging, Peter Durkson Wailuku, Maui
- August 2007 Maui Kiwanis Group Kahului, Maui
- August 2007 Kihei Community Association Kihei, Maui
- August 2007 State House Interim Task Force on Smart Growth Honolulu, Oahu
- September 2007 Wailuku Senior's Club Wailuku, Maui
- October 2007 County Department of Economic Development, Director Wailuku, Maui
- October 2007 Kihei-Wailea Rotary Club Wailea, Maui
- November 2007 Opinions Maui, Akaku TV, Don Couch Kahului, Maui
- November 2007 AARP Livable Communities Conference Kahului, Maui
- November 2007 Maui Native Hawaiian Chamber of Commerce Wailea, Maui  
November 2008 same as above (2<sup>nd</sup> meeting) Wailea, Maui

▪ February 2008	State Department of Education, Planning Division	Honolulu, Oahu
▪ April 2008	Maui County Mayor, Charmaine Tavares	Wailuku, Maui
▪ April 2008	State Senator Russell Kokubun	Honolulu, Oahu
▪ May 2008	State Department of Health, Healthy Communities Initiative, Dir.	Wailuku, Maui
▪ May 2008	Bank of Hawaii, Wailuku Branch Management	Wailuku, Maui
▪ August 2008	Maui Realtor's Association, Government Affairs Committee	Kahului, Maui
▪ August 2008	Olowalu Mauka Homeowner's Association	Olowalu, Maui
▪ October 2003	Maui Representative for Congresswoman Mazie Hirono	Wailuku, Maui
▪ October 2008	Maui Representative for Senator Inouye	Wailuku, Maui
▪ December 2008 January 2009	Maui Nui Marine Resource Council, Representatives same as above (2 <sup>nd</sup> meeting)	Olowalu, Maui Wailuku, Maui
▪ June 2009	Director of State Land Use Commission	Honolulu, Oahu
▪ September 2009	Maui YMCA, Director	Kahului, Maui
▪ September 2009	Maui Community College, Chancellor	Kahului, Maui
▪ September 2009	Sustainable Living Institute of Maui, Director	Kahului, Maui
<b>INDIVIDUALS</b>		
▪ November 2005	Kumu Keli'i Taua & Kimokeo Kapahulehua, Cultural Consultants	Wailuku, Maui
▪ November 2005	Ed Lindsey, deceased, and wife Pua, Cultural Consultants	Honokowai, Maui
▪ November 2005	Dana Naone Hall, Cultural Consultant	Wailuku, Maui
▪ November 2005	Hokulani Holt-Padilla, Cultural Consultant	Wailuku, Maui
▪ November 2005	Iokepa Naeole, Cultural Consultant	Wailuku, Maui
▪ November 2005	Katherine King, deceased, long-time Olowalu Resident	Olowalu, Maui
▪ November 2005	George Rixey, A.I.A	Wailuku, Maui
▪ November 2005	Dick Mayer, Retired Instructor, MCC	Kula, Maui
▪ November 2005	Buck Buchanan, Environment	Lahaina, Maui
▪ March 2006	Leslie Kuloloio, Cultural Consultant	Wailuku, Maui
▪ December 2006	Robert Hobdy, Environmental Consultant	Wailuku, Maui
▪ September 2009	Marc Hodges, Natural Resource Consultant	Wailuku, Maui
▪ October 2009	Scott Fisher, Native Flora/Fauna Specialist	Wailuku, Maui

**X. AGENCIES TO BE  
CONSULTED DURING THE  
PREPARATION OF THE  
DRAFT ENVIRONMENTAL  
IMPACT STATEMENT**

# **X. AGENCIES TO BE CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT**

The following agencies will be consulted during preparation of the Draft Environmental Impact Statement (EIS). Agency comments and responses to substantive comments will be included in the Draft EIS.

## **FEDERAL AGENCIES**

1. Ranae Ganske-Cerizo, Soil Conservationist  
**Natural Resources Conservation Service**  
**U.S. Department of Agriculture**  
77 Hookele Street, Suite 202  
Kahului, Hawaii 96732
2. George Young  
Chief, Regulatory Branch  
**U.S. Department of the Army**  
U.S. Army Engineer District, Honolulu  
Regulatory Branch  
Building 230  
Fort Shafter, Hawaii 96858-5440
3. Director of Facilities Engineer  
U.S. Army Support Command Hawaii  
Attn: Environmental Management Office  
Fort Shafter, Hawaii 96858-5000
4. Patrick Leonard  
Field Supervisor  
**U. S. Fish and Wildlife Service**  
300 Ala Moana Blvd., Rm. 3-122, Box 50088  
Honolulu, Hawaii 96813
5. Gordon Furutani, Field Office Director  
**U.S. Department of Housing and Urban Development**  
500 Ala Moana Boulevard, Suite 3A  
Honolulu, Hawaii 96813

## **STATE AGENCIES**

6. Brennon Morioka, Director  
**Hawaii Department of Transportation**  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097
7. Major General Robert G.S. Lee, Director  
**Hawaii State Civil Defense**  
3949 Diamond Head Road  
Honolulu, Hawaii 96816-4495
8. Russ Saito, State Comptroller  
**Department of Accounting and General Services**  
1151 Punchbowl Street, #426  
Honolulu, Hawaii 96813
9. Sandra Lee Kunimoto  
**Department of Agriculture**  
1428 South King Street  
Honolulu, Hawaii 96814-2512
10. Theodore Liu, Director  
**Department of Business, Economic Development and Tourism**  
220 South King Street  
Honolulu, Hawaii 96813
11. Karen Seddon  
Executive Director  
**Hawaii Housing Finance and Development Corporation**  
677 Queen Street  
Honolulu, Hawaii 96813

12. **DBEDT Energy Resources & Technology Division**  
235 S. Beretania Street  
5<sup>th</sup> Floor  
Honolulu, Hawaii 96813
13. Kathryn Matayoshi, Acting Superintendent  
**Department of Education**  
P. O. Box 2360  
Honolulu, Hawaii 96804
14. Katherine Kealoha, Director  
**Office Of Environmental Quality Control**  
235 S. Beretania Street, Suite 702  
Honolulu, Hawaii 96813
15. Clyde Namuo  
**Office of Hawai'ian Affairs**  
711 Kapiolani Blvd, Suite 500  
Honolulu, Hawaii 96813
16. Kaulana Park, Chairman  
**Department of Hawaiian Home Lands**  
P. O. Box 1879  
Honolulu, Hawaii 96805
17. Lillian B. Koller, Director  
**Department of Human Services**  
1390 Miller Street, Room 209  
Honolulu, Hawaii 96813
18. Laura H. Thielen, Chairperson  
**Department of Land and Natural Resources**  
P.O. Box 621  
Honolulu, Hawaii 96809
19. Abbey Seth Mayer, Director  
**Office of Planning**  
P. O. Box 2359  
Honolulu, Hawaii 96804
20. Heidi Meeker  
Planning Section  
Office of Business Services  
**Department of Education**  
809 Eighth Avenue  
Honolulu, Hawaii 96816
21. Lindsay Ball  
Complex Area Superintendent  
(Lanai/Molokai/Hana/Lahaina)  
**Department of Education**  
54 High Street, 4th Floor  
Wailuku, Hawaii 96793
22. Patti Kitkowski  
Acting District Environmental Health Program Chief  
State of Hawaii  
**Department of Health**  
54 High Street  
Wailuku, Hawaii 96793
23. Chiyome Fukino, M.D., Director  
State of Hawaii  
**Department of Health**  
919 Ala Moana Blvd., Room 300  
Honolulu, Hawaii 96814
24. **Department of Health**  
Environmental Planning Office  
P.O. Box 3378  
Honolulu, Hawaii 96801
25. Alec Wong, P.E., Chief  
**Clean Water Branch**  
State of Hawaii  
**Department of Health**  
919 Ala Moana Blvd., Room 300  
Honolulu, Hawaii 96814
26. Darwin Ching, Director  
**Department of Labor and Industrial Relations**  
830 Punchbowl Street  
Honolulu, Hawaii 96813
27. Dr. Puaalaokalani Aiu, Administrator  
State of Hawaii  
**Department of Land and Natural Resources**  
**State Historic Preservation Division**  
601 Kamokila Blvd., Room 555  
Kapolei, Hawaii 96707
28. **State Historic Preservation Division**  
130 Mahalani Street  
Wailuku, Hawaii 96793



29. Dan Davidson, Executive Officer  
State of Hawaii  
**State Land Use Commission**  
P.O. Box 2359  
Honolulu, Hawaii 96804
30. **U.H. Environmental Center**  
2500 Dole Street, Krauss Annex 19  
Honolulu, Hawaii 96822
31. Rosalyn H. Baker, Senator  
**Hawaii State Senate**  
Hawaii State Capitol, Room 210  
415 S. Beretania Street  
Honolulu, Hawaii 96813
32. Angus L.K. McKelvey, Representative  
**House of Representatives**  
Hawaii State Capitol, Room 315  
415 S. Beretania Street  
Honolulu, Hawaii 96813
- COUNTY AGENCIES**
33. Charmaine Tavares, Mayor  
County of Maui  
200 South High Street  
Wailuku, Hawaii 96793
34. Deidre Tegarden, Director  
County of Maui  
**Office of Economic Development**  
2200 Main Street, Suite 305  
Wailuku, Hawaii 96793
35. Gen Inuma, Administrator  
**Maui Civil Defense Agency**  
200 South High Street  
Wailuku, Hawaii 96793
36. Jeff Murray, Fire Chief  
County of Maui  
**Department of Fire and  
Public Safety**  
200 Dairy Road  
Kahului, Hawaii 96732
37. Lori Tshako, Director  
County of Maui  
**Department of Housing and  
Human Concerns**  
One Main Plaza  
2200 Main Street, Suite 546  
Wailuku, Hawaii 96793
38. Tamara Horcajo, Director  
County of Maui  
**Department of Parks and Recreation**  
700 Halia Nakoā Street  
Wailuku, Hawaii 96793
39. Danny Mateo, Council Chair  
**Maui County Council**  
200 South High Street  
Wailuku, Hawaii 96793
40. Michael Molina, Council Vice-Chair  
**Maui County Council**  
200 South High Street  
Wailuku, Hawaii 96793
41. Councilmember Gladys Baisa  
**Maui County Council**  
200 South High Street  
Wailuku, Hawaii 96793
42. Councilmember JoAnne Johnson  
**Maui County Council**  
200 South High Street  
Wailuku, Hawaii 96793
43. Councilmember Sol Kahoohalahala  
**Maui County Council**  
200 South High Street  
Wailuku, Hawaii 96793
44. Councilmember Bill Medeiros  
**Maui County Council**  
200 South High Street  
Wailuku, Hawaii 96793
45. Councilmember Wayne Nishiki  
**Maui County Council**  
200 South High Street  
Wailuku, Hawaii 96793
46. Councilmember Joseph Pontanilla  
**Maui County Council**  
200 South High Street  
Wailuku, Hawaii 96793
47. Councilmember Michael Victorino  
**Maui County Council**  
200 South High Street  
Wailuku, Hawaii 96793

48. Jeff Hunt, Director  
County of Maui  
**Department of Planning**  
250 South High Street  
Wailuku, Hawaii 96793
49. **Maui Planning Commission**  
c/o Department of Planning  
250 South High Street  
Wailuku, Hawaii 96793
50. Gary Yabuta, Chief  
County of Maui  
**Police Department**  
55 Mahalani Street  
Wailuku, Hawaii 96793
51. Milton Arakawa, Director  
County of Maui  
**Department of Public Works**  
200 South High Street  
Wailuku, Hawaii 96793
52. Cheryl Okuma, Director  
County of Maui  
**Department of Environmental  
Management**  
2200 Main Street, Suite 100  
Wailuku, Hawaii 96793
53. Donald Medeiros, Director  
County of Maui  
**Department of Transportation**  
200 South High Street  
Wailuku, Hawaii 96793
54. Jeffrey Eng, Director  
County of Maui  
**Department of Water Supply**  
200 South High Street  
Wailuku, Hawaii 96793
57. Theo Morrison, Executive Director  
**Lahaina Restoration Foundation**  
648 Wharf Street, Suite 102  
Lahaina, Hawaii 96761
58. Joan McKelvey, President  
**Lahaina Town Action Committee**  
Board of Directors  
648 Wharf Street, Suite 102  
Lahaina, Hawaii 96761
59. **Maui Memorial Medical Center**  
221 Mahalani Street  
Wailuku, Hawaii 96793
60. Ken Hansen  
**Newport Hospital Corporation**  
1010 Front Street #101A  
Lahaina, Hawaii 96761
61. Bill East  
**Olowalu Makai-Komohana  
Homeowners Association**  
Management Consultants  
P.O. Box 10039  
Lahaina, Hawaii 96761
62. Randy A. Ragon, President  
**Olowalu Mauka Homeowners  
Association**  
713-A Front Street  
Lahaina, Hawaii 96761
63. Joe Pluta, President  
**West Maui Improvement Foundation**  
P.O. Box 10338  
Lahaina, Hawaii 96761
64. Zeke Kalua, Executive Director  
**West Maui Taxpayers Association**  
P.O. Box 10338  
Lahaina, Hawaii 96761

**OTHER CONSULTED PARTIES**

55. Greg Kauhi, Manager  
Customer Operations  
**Maui Electric Company, Ltd.**  
P. O. Box 398  
Kahului, Hawaii 96732
56. **Hawaiian Telecom**  
60 South Church Street  
Wailuku, Hawaii 96793
65. Norma Barton, Executive Director  
**Lahaina Bypass Now**  
505 Front Street, Suite 220A  
Lahaina, Hawaii 96761

## **XI. REFERENCES**

## XI. REFERENCES

Brown and Caldwell, Olowalu Water and Wastewater Options Report, October 31, 2005.

Char & Associates, Botanical Survey, March 1999.

County of Maui, Planning Department, Maui County Community Plan Update Program: Socio-Economic Forecast, June 2006.

County of Maui, Public Facilities Assessment Update, March 9, 2007.

County of Maui, The General Plan of the County of Maui, September 1990 Update.

County of Maui, West Maui Community Plan, February 1996.

County of Maui, Office of Economic Development, Maui County Data Book, 2008.

Katherine Kama`ema`e Smith, Pu`u Honua: The Legacy of Olowalu.

Realtors Association of Maui, Inc., Maui Overview Website, <http://www.ramaui.com>, December 2009.

SMS, Hawai`i Housing Policy Study Update, 2003.

State of Hawaii, Commission on Water Resource Management, Hawai`i Stream Assessment, A Preliminary Appraisal of Hawaii's Stream Resources, Report R84, December 1990.

State of Hawaii, Department of Business, Economic Development and Tourism, State of Hawaii Data Book, 2008.

State of Hawaii, Department of Labor and Industrial Relations, <http://www.hiwi.org>, January 2010.

State of Hawaii, Land Use Commission, <http://luc.state.hi.us/>, November 2009.

University of Hawaii, Land Study Bureau, Detailed Land Classification, Island of Maui, May 1967.

U. S. Department of Agriculture, Soil Conservation Service, The Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, August 1972.

U.S. Fish and Wildlife Service, 1999.

Xamanek Researches, Archaeological Inventory Surveys, 1999 and 2000.

# **APPENDIX A.**

## **Biological Resources Survey**

**BIOLOGICAL RESOURCES SURVEY**

**for**

**Lot 4D of the Olowalu Makai-Komohana Subdivision**

**OLOWALU , MAUI, HAWAII**

**by**

**ROBERT W. HOBDY  
ENVIRONMENTAL CONSULTANT  
Kokomo, Maui  
January 2005**

**Prepared for:  
Olowalu Ekolu , LLC**

# **BIOLOGICAL RESOURCES SURVEY**

## **Lot 4D of the Olowalu Makai-Komohana Subdivision**

### **INTRODUCTION**

This project lies on approximately 14 acres of land in Olowalu, West Maui. It is a triangular parcel of land bounded on the west by the ocean, on the east by Honoapiilani Highway and on the south by Olowalu Stream.

### **SITE DESCRIPTION**

This fourteen acre lot is a portion of parcel 5 (TMK 4-8-03:05) (L.U.C.A. File No.4.760) which lies on a nearly level coastal plain. A State coastal reserve fronts the entire 0.4 mile parcel. The shoreline consists of gently sloping rock and coral cobble leading up to a vegetation line at 6 to 7 feet elevation. The subject parcel slopes very gently up to the highway and has a maximum elevation of about 20 feet. The parcel is open grassland and has been mowed regularly to maintain it in this condition. A strip of large trees lines the boundary of Honoapiilani Highway as well as the Olowalu Stream corridor. Rainfall averages 12-15 inches annually with the bulk falling between November and March (Armstrong, 1983). Soils throughout the entire parcel are of the Pulehu Series developed from igneous alluvium and are cobbly silty clay loam, dark brown in color, neutral to mildly alkaline and about 60 inches deep (Foote et al, 1972).

### **BIOLOGICAL HISTORY**

In pre-contact times this area would have been a dry native shrubland with a few scattered trees. A good diversity of species would have been present, but with a preponderance of grasses such as *Heteropogon*, *Eragrostis* and *Panicum*, shrubs such as *Dodonaea*, *Gouania* and *Hibiscus*, and trees such as *Erythrina* and *Reynoldsia*.

The Olowalu area came into sugar cane production during the 1860's and this use continued for over 100 years. All vestiges of the original flora have long since disappeared. Since the demise of sugar in West Maui in 1999 the subject parcel has largely stood fallow with only mowing to keep the vegetation down and some minor agricultural pursuits. The highly modified vegetation consists mainly of weedy species.

## SURVEY OBJECTIVES

This report summarizes the findings of a flora and fauna survey of the proposed Lot 4D Olowalu Makai-Komohana Subdivision which was conducted in December 2004. The objectives of the survey were to:

1. Document what plant, bird and mammal species occur on the property or may likely occur in the existing habitat.
2. Document the status and abundance of each species.
3. Determine the presence or likely occurrence of any native flora and fauna, particularly any that are Federally listed as Threatened or Endangered. If such occur, identify what features of the habitat may be essential for these species.
4. Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the flora and fauna in this part of the island.
5. Note which aspects of the proposed development pose significant concerns for plants or for wildlife and recommend measures that would mitigate or avoid these problems.

## BOTANICAL SURVEY REPORT

### SURVEY METHODS

A walk-through botanical survey method was used following a route to ensure maximum coverage of the area. Areas most likely to harbor native or rare plants were more intensively examined. Notes were made on plant species, distribution and abundance as well as terrain and substrate.

### DESCRIPTION OF THE VEGETATION

The vegetation throughout the bulk of the area is maintained in a mowed condition. There are variety of cropped grass and weed species, with an abundance of 'uhaloa (*Waltheria indica*) koa haole (*Leucaena leucocephala*), nutsedge (*Cyperus rotundus*) and swollen fingergrass (*Chloris barbata*). Within this area many rows of young palms have been planted as a short term crop. Along the margin of this open area are large trees, mainly opiuma (*Pithecellobium dulce*), Java plum (*Syzygium cumini*) and monkeypod (*Samanea saman*). Also in the margins are numerous sugar cane (*Saccharum officinarum*) plants, surviving from the period of former cultivation.



## DISCUSSION

The vegetation within the open central part of the project area is dominated by four low-mowed species nutsedge, koa haole, 'uhaloa and swollen fingergrass that together make up over half of the cover. Most of the other 55 plant species die back during the long hot summers and the frequent mowing.

A total of 3 native plant species were found growing within the project area, 'uhaloa, koali awahia (*Ipomoea indica*) and pohinahina (*Ipomoea pes-caprae*). All of these are common lowland species throughout Hawai'i. No officially listed Threatened or Endangered plants (US Fish and Wildlife Service, 1999) are found on the site, nor do any plants proposed as candidates for such status occur on the property.

No wetlands occur on the site (see accompanying Wetland Assessment Report). None of the three wetland indicator criteria, hydrophytic vegetation, hydric soils or wetland hydrology, occur anywhere on the property.

Because the vegetation on the site is dominated by common non-native plants and because there are no rare or protected native species within the project area, there is little of botanical concern and the proposed project is not expected to have a significant negative impact on the botanical resources.

## RECOMMENDATIONS

Native coastal and dryland plants are particularly adapted to growing in Olowalu's hot climate with minimal care. While not required, it would be nice to incorporate some native species into the general landscaping to lend a special accent to this project. No other recommendations are deemed appropriate for this project with regard to the botanical resources.

## PLANT SPECIES LIST

Following is a checklist of all those vascular plant species inventoried during the field studies. Plant families are arranged alphabetically within two groups: Monocots and Dicots. Taxonomy and nomenclature of the flowering plants are in accordance with Wagner et al. (1999).

For each species, the following information is provided:

1. Scientific name with author citation
2. Common English or Hawaiian name.
3. Bio-geographical status. The following symbols are used:
  - endemic = native only to the Hawaiian Islands; not naturally occurring anywhere else in the world.
  - indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).
  - polynesian introduction = plants introduced to Hawai'i in the course of Polynesian migrations and prior to western contact.
  - non-native = all those plants brought to the islands intentionally or accidentally after western contact.
4. Abundance of each species within the project area:
  - abundant = forming a major part of the vegetation within the project area.
  - common = widely scattered throughout the area or locally abundant within a portion of it.
  - uncommon = scattered sparsely throughout the area or occurring in a few small patches.
  - rare = only a few isolated individuals within the project area.

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATUS</u>	<u>ABUNDANCE</u>
<b>MONOCOTS</b>			
<b>ARECACEAE (Palm Family)</b>			
<i>Cocos nucifera</i> L.	coconut	polynesian	uncommon
<i>Roystonea regia</i> (Kunth) O.F. Cook	royal palm	non-native	uncommon
<i>Veitchia merrillii</i> (Beccari) Beccari	Manila palm	non-native	uncommon
<i>Washingtonia robusta</i> Wendl.	Mexican fan palm	non-native	rare
<b>CYPERACEAE (Sedge Family)</b>			
<i>Cyperus rotundus</i> L.	nut grass	non-native	common
<b>POACEAE (Grass Family)</b>			
<i>Brachiaria mutica</i> (Forssk.) Stapf.	California grass	non-native	rare
<i>Brachiaria subquadrifera</i> (Trin.) Hitchc.	-----	non-native	rare
<i>Cenchrus ciliaris</i> L.	buffelgrass	non-native	common
<i>Chloris barbata</i> (L.) Sw.	swollen fingergrass	non-native	common
<i>Chloris virgata</i>	feather fingergrass	non-native	rare
<i>Cynodon dactylon</i> (L.) Pers.	<i>manienie</i>	non-native	uncommon
<i>Eragrostis pectinacea</i> (Michx.) Nees	Carolina lovegrass	non-native	uncommon
<i>Panicum maximum</i> Jacq.	Guinea grass	non-native	uncommon
<i>Rhynchelytrum repens</i> (Willd.) Hubb.	Natal redtop	non-native	uncommon
<i>Saccharum officinarum</i> L.	sugar cane	non-native	uncommon
<b>DICOTS</b>			
<b>AIZOACEAE (Fig-marigold Family)</b>			
<i>Trianthema portulacastrum</i> L.	-----	non-native	rare
<b>AMARANTHACEAE (Amaranth Family)</b>			
<i>Amaranthus spinosus</i> L.	spiny amaranth	non-native	uncommon

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATUS</u>	<u>ABUNDANCE</u>
<b>ASTERACEAE (Sunflower Family)</b>			
<i>Pluchea carolinensis</i> (Jacq.) G. Don	sourbush	non-native	uncommon
<i>Pluchea indica</i> (L.) Less	Indian fleabane	non-native	rare
<i>Tridax procumbens</i> L.	coat buttons	non-native	common
<i>Verbesina encelioides</i> (Cav.) Benth. & Hook.	golden crown beard	non-native	rare
<b>BORAGINACEAE (Borage Family)</b>			
<i>Cordia subcordata</i> Lam.	kou	polynesian	rare
<i>Tournefortia argentea</i> L. fil.	tree heliotrope	non-native	rare
<b>BUDDLEIACEAE (Butterfly Bush Family)</b>			
<i>Buddleia asiatica</i> Lour.	dog tail	non-native	rare
<b>CHENOPODIACEAE (Goosefoot Family)</b>			
<i>Atriplex suberecta</i> Verd.	-----	non-native	rare
<i>Atriplex semibaccata</i> R. Br.	Australian saltbush	non-native	rare
<i>Chenopodium murale</i> L.	-----	non-native	rare
<b>CONVOLVULACEAE (Morning Glory Family)</b>			
<i>Ipomoea indica</i> (J.Burm.) Merr.	koali awahia	indigenous	uncommon
<i>Ipomoea pes-caprae</i> (L.) R. Br.	pohuehue	indigenous	uncommon
<i>Ipomoea triloba</i> L.	little bell	non-native	uncommon
<b>CUCURBITACEAE (Gourd Family)</b>			
<i>Curcubita pepo</i> L.	pumpkin	non-native	rare
<i>Lagenaria siceraria</i> (Molina) Standl.	long gourd	non-native	rare
<i>Momordica charantia</i> L.	balsam pear	non-native	uncommon
<b>EUPHORBIACEAE (Spurge Family)</b>			
<i>Chamaecyce hirta</i> (L.) Millsp.	hairy spurge	non-native	common
<i>Chamaecyce hyssopifolia</i> (L.) Small	-----	non-native	uncommon

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATUS</u>	<u>ABUNDANCE</u>
<i>Ricinus communis</i> L.	castor bean	non-native	uncommon
FABACEAE (Pea Family)			
<i>Crotalaria pallida</i> Aiton	smooth rattlepod	non-native	uncommon
<i>Desmanthus pernambucanus</i> (L.) Thellung	slender mimosa	non-native	rare
<i>Indigofera hendecaphylla</i> Jacq.	creeping indigo	non-native	uncommon
<i>Lablab purpureus</i> (L.) Sweet	-----	non-native	rare
<i>Leucaena leucocephala</i> (Lam.) deWit	<i>koa haole</i>	non-native	common
<i>Macroptilium atropurpureum</i> (DC) Urb.	-----	non-native	rare
<i>Macroptilium lathyroides</i> (L.) Urb.	wild bean	non-native	uncommon
<i>Pithecellobium dulce</i> (Roxb.) Benth.	'opiuma	non-native	common
<i>Prosopis pallida</i> (Humb.&Bonpl.Ex. Willd.) Kunth	<i>kiawe</i>	non-native	rare
<i>Samanea saman</i> (Jacq.) Merr.	monkeypod	non-native	uncommon
MALVACEAE (Mallow Family)			
<i>Abutilon grandifolium</i> (Willd.)Sweet	hairy abutilon	non-native	rare
<i>Hibiscus acetosella</i> Welw.	red-leaf hibiscus	non-native	rare
<i>Hibiscus tiliaceus</i> L.	hau	polynesian	uncommon
<i>Malvastrum cormandelianum</i> (L.) Garcke	false mallow	non-native	rare
<i>Sida rhombifolia</i>	-----	non-native	common
MYRTACEAE (Myrtle Family)			
<i>Syzygium cumini</i> (L.) Skeels	Java plum	non-native	uncommon
NYCTAGINACEAE (Four-o'clock Family)			
<i>Boerhavia coccinea</i> Mill.	-----	non-native	common
PORTULACACEAE (Purslane Family)			
<i>Portulaca grandiflora</i> Hook.	rose moss	non-native	rare

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATUS</u>	<u>ABUNDANCE</u>
<i>Portulaca oleracea</i> L.	pigweed	non-native	uncommon
<i>Portulaca pilosa</i> L.	-----	non-native	rare
STERCULIACEAE (Cacao Family)			
<i>Waltheria indica</i> L.	'uhaloa	indigenous	common
VERBENACEAE (Verbena Family)			
<i>Lantana camara</i> L.	Lantana	non-native	rare

# FAUNA SURVEY REPORT

## SURVEY METHODS

A walk-through survey method was conducted in conjunction with the botanical survey. All parts of the project area were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species abundance, activities and location as well as observations of trails, tracks, scat and signs of feeding. In addition an evening visit was made to the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) in the area.

## RESULTS

### MAMMALS

Only one species of mammal was observed in the project area during two site visits. Taxonomy and nomenclature follow Tomich (1986).

Roof rat (*Rattus rattus*) – One rat was seen in the coastal vegetation near the beach.

Deep, dense grass cover on the margins of the open central area prevented good visibility of other ground dwelling animals, but a significant population of cats, mice and mongoose would also be expected. Cats and mongoose feed on rats and mice. Cats and mice were not seen but their presence is virtually guaranteed by the abundant food supply in the form of grass seed and herbaceous vegetation. No sign of axis deer or other large herbivores was observed.

A special effort was made to look for the native Hawaiian hoary bat by making an evening survey of the area. When present in an area these bats can be easily identified as they forage for insects, their distinctive flight patterns clearly visible in the glow of twilight. No evidence of such activity was observed though visibility was excellent and many flying insects were seen.



## BIRDS

There was moderate birdlife diversity in this normally dry area. An ample supply of grass and herbaceous plant seeds were available. Nine species of non-native birds were seen, most taking advantage of this seasonal food supply. Taxonomy and nomenclature follow American Ornithologist's Union (1988), Berger (1981), Pratt et al. (1987) and Hawaii Audubon Society (1989).

Barred dove (*Geopelia striata*) – Many barred doves were seen and heard throughout the central open area. Their smaller size and striated body distinguish this species from the spotted dove.

Common mynah (*Acridotheres tristis*) - Many of these easily recognizable and assertive birds were seen feeding in the open area during the late afternoon.

Gray francolin (*Francolinus pondicerianus*) – A few gray francolins were seen in ground openings and in kiawe trees, but their loud and distinctive calls were heard frequently throughout the area indicating a larger population than seen.

Spotted dove (*Streptopelia chinensis*) – This large dove was seen frequently in the trees and transiting overhead. Their smooth flight and evenly modulated cooing are distinctive.

Japanese white-eye (*Zosterops japonica*) – a few white-eyes were seen feeding in the trees and their high pitched calls were occasionally heard.

Pacific Golden Plover (*Pluvialis fulva*) A few kōlea were seen wheeling over the area, especially in the evening hours. Plovers are annual migrants to Hawaii.

Red-crested cardinal (*Paroaria coronata*) A few individuals and pairs were seen in the trees.

\* Nene (*Nesochen sandvicensis*) A pair of nene flew into the open area to feed and rest during the late afternoon. The nene is an endangered species.

\* Auku'u (*Nycticorax nycticorax hawaiiensis*) One Auku'u was flushed from the trees along the Olowalu Stream corridor. The Auku'u is an indigenous species.



## INSECTS

While insects in general were not tallied, they were abundant throughout the area and fueled the bird activity observed. Only one native insect Blackburn's sphinx moth (*Manduca blackburni*) has been put on the Federal Endangered Species List (USFWS 2003) and this designation requires special focus to ascertain if it is present. None were found.

Blackburn's sphinx moth occurs on Maui although it has not been found in this area. Its native host plants are species of 'Aiea (*Nothocestrum*). A non-native alternative host plant is tree tobacco (*Nicotiana glauca*). There are no 'aiea on or near the project area nor were any tree tobacco plants found anywhere on the property. No Blackburn's sphinx moths or their larvae were observed.

## DISCUSSION

Fauna surveys are seldom comprehensive due to the short window of observation, the seasonal nature of animal activities and the unpredictable nature of their daily movements. This survey should be considered fairly representative, although a few common non-native species such as house finch, sparrow and American cardinal would be expected here.

The appearance of the two nene geese was an interesting occurrence, although not unusual. These endangered geese are being reintroduced to West Maui and their numbers are increasing. These large birds range far and wide in their search for food and have shown a preference for irrigated fields, reservoirs and golf courses where they feed on lush grasses, seeds and small fruits. Their occurrence on the subject property is due to the open mowed conditions of the property and the presence of small puddles of water from drip irrigation under the palm plantings. Their use of the area appears to be incidental and sporadic. No nests were found nor did they exhibit any nesting behavior. This property should not be considered as important habitat for nene (however see recommendations).

The Pacific Golden Plover likewise is a wide ranging bird that feeds in open fields. These migrant birds spend the winter months in Hawaii before returning to the arctic in the spring to breed. Their use of the property is also incidental. These plovers are widespread and abundant in Hawaii.

The single auku'u seen is typical as these normally solitary birds often frequent forested stream courses when they hunt for aquatic life. They are fairly common in Hawaii in their preferred habitat.

For these reasons there is little of wildlife concern and the proposed project is not expected to have a significant negative impact on fauna resources.

## RECOMMENDATIONS

It would appear from the landscape plans that an extensive irrigated lawn open space will front the developed area. This will further enhance the attractiveness of the property for use by nene and plover. No other recommendations were deemed necessary regarding the wildlife or their habitat on this site.

## ANIMAL SPECIES LIST

Following is a checklist of the animal species inventoried during the field work. Animal species are arranged in descending abundance within two groups: Mammals and Birds. For each species the following information is provided:

1. Common name
2. Scientific name
3. Bio-geographical status. The following symbols are used:

endemic = native only to Hawaii; not naturally occurring anywhere else in the world.

indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).

non-native = all those animals brought to Hawaii intentionally or accidentally after western contact.

migratory = spending a portion of the year in Hawaii and a portion elsewhere. In Hawaii the migratory birds are usually in the overwintering/non-breeding phase of their life cycle.

4. Abundance of each species within the project area:

abundant = many flocks or individuals seen throughout the area at all times of day.

common = a few flocks or well scattered individuals throughout the area.

uncommon = only one flock or several individuals seen within the project area.

rare = only one or two seen within the project area.

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>STATUS</u>	<u>ABUNDANCE</u>
<u>MAMMALS</u>			
Roof rat	<i>Rattus rattus</i>	non-native	rare
<u>BIRDS</u>			
Barred dove	<i>Geopelia striata</i>	non-native	abundant
Common mynah	<i>Acridotheres tristis</i>	non-native	common
Gray francolin	<i>Francolinus pondicerianus</i>	non-native	common
Spotted dove	<i>Streptopelia chinensis</i>	non-native	uncommon
Japanese white-eye	<i>Zosterops japonica</i>	non-native	uncommon
Pacific Golden Plover	<i>Pluvialis fulva</i>	migratory	uncommon
Red crested cardinal	<i>Paroaria coronata</i>	non-native endemic & endangered	uncommon
Nene	<i>Nesochen sanvicensis</i>	non-native endemic & endangered	uncommon
Auku'u	<i>Nycticorax nycticorax hoactli</i>	indigenous	rare

## Literature Cited

- American Ornithologist's Union 1983. Check-list of North American Birds. 6<sup>th</sup> edition. American Ornithologist's Union. Washington D.C.
- Armstrong, R. W. (ed.) 1983. Atlas of Hawaii. (2<sup>nd</sup>. ed.) University of Hawaii Press.
- Berger, A.J. 1981. Hawaiian Birdlife. (2<sup>nd</sup> ed.) University Press. Hon. Ha.
- Foote, D.E. , E.L. Hill, S. Nakamura, and F. Stephens. 1972. Soil survey of the islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii. U.S. Dept. of Agriculture, Soil Conservation Service. Washington, D.C.
- Hawaii Audubon Society. 1989. Hawaii's Birds. (4<sup>th</sup> ed.) Hawaii Audubon Society, Honolulu.
- Pratt, H.D., P.L. Brunner and D.G. Berrett. 1987. A Field Guide to the Birds of Hawaii and the Tropical Pacific, Princeton University Press.
- Tomich, P.Q. 1986. Mammals in Hawaii. Bishop Museum Press, Honolulu.
- U.S. Fish and Wildlife Service. 1999. Endangered and threatened wildlife and Plants. 50 CFR 17.11 & 17.12
- U.S. Fish and Wildlife Service. 2003. Endangered and threatened wildlife and plants: determination of endangered status for Blackburn's sphinx moth from Hawaii. Federal Register 65(21): 4770-4779.
- Wagner, W. L., D.R. Herbst, and S. H. Sohmer. 1999. Manual of the flowering plants of Hawai'i. Univ. of Hawai'i Press and Bishop Museum Press. Honolulu.