

**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

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LIST OF FIGURES

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

LIST OF TABLES

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

LIST OF APPENDICES

Appendix A.	Biological Resources Survey
Appendix B.	Olowalu Talk Story
Appendix C.	A Baseline Study on Sediment Loading, Water Quality and Selected Marine Life in Nearshore Waters of Olowalu, Maui
Appendix D.	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

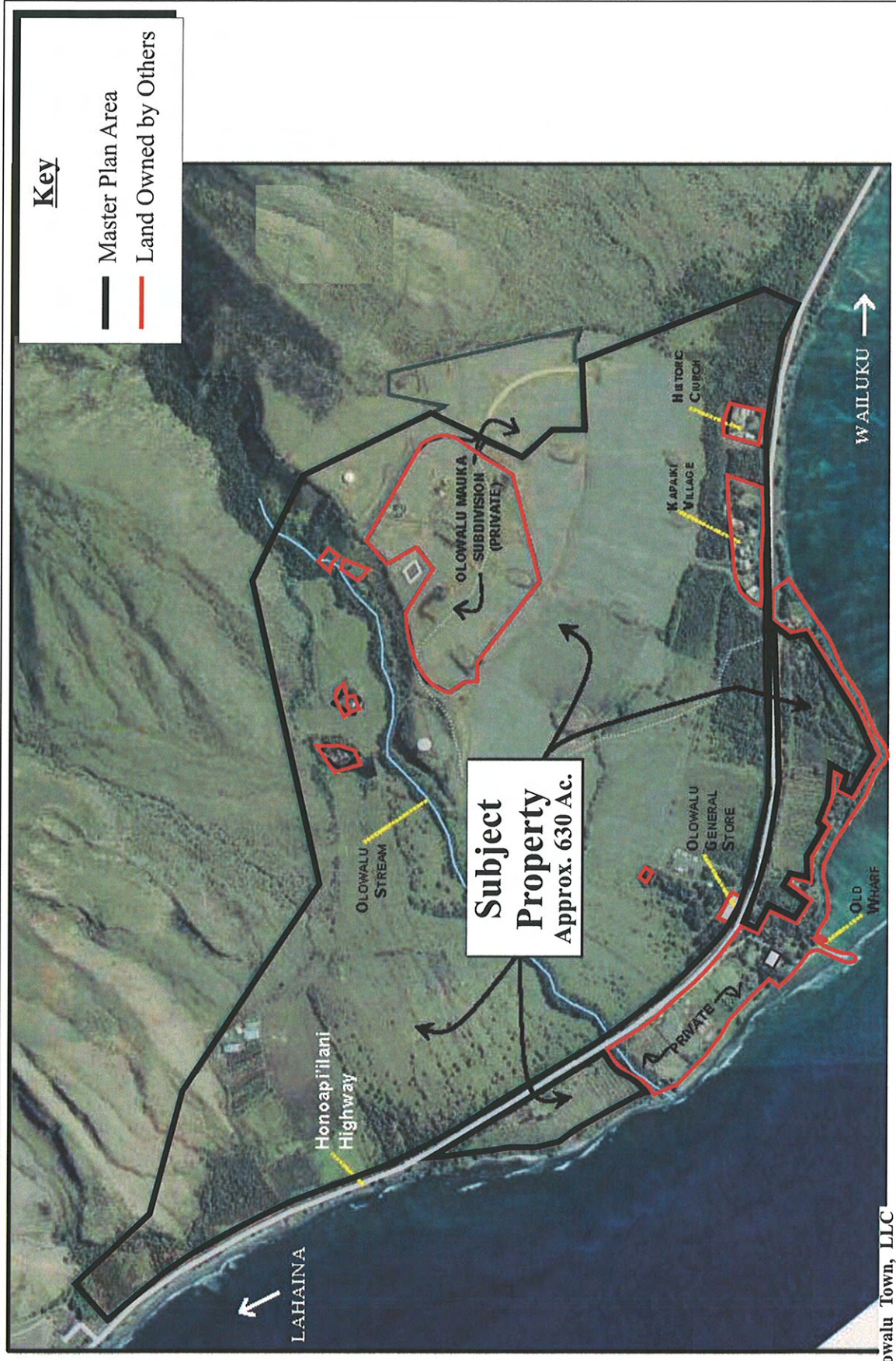
I. PROJECT OVERVIEW

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: Olowalu Town, LLC

Figure 2



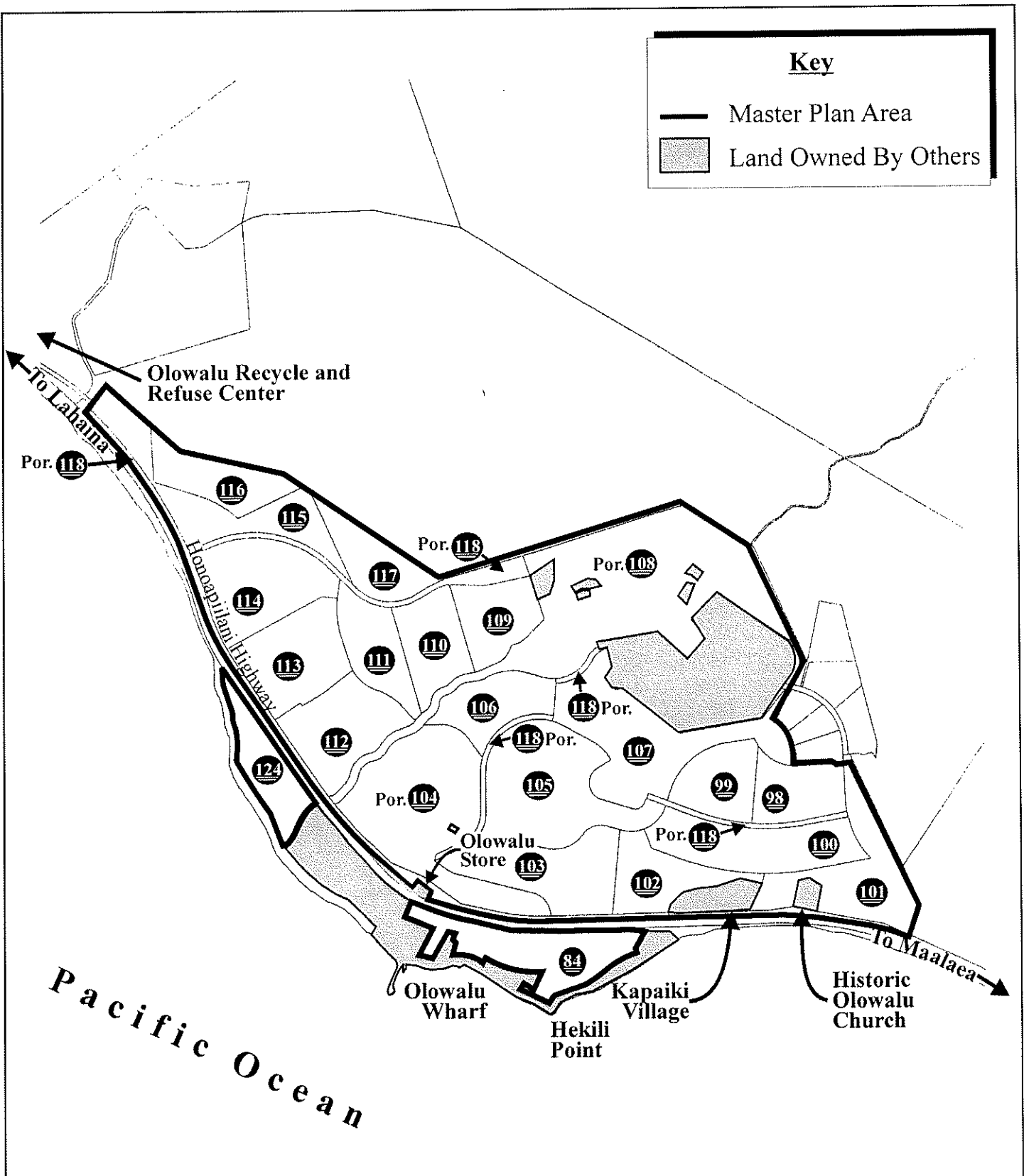
Proposed Olowalu Town Master Plan
Aerial Photograph of Project Site

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

Tax Map Key	Acres	Tax Map Key	Acres
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	Total	636.48

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	
TOTAL	635			Approximately 1,500 units

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

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.

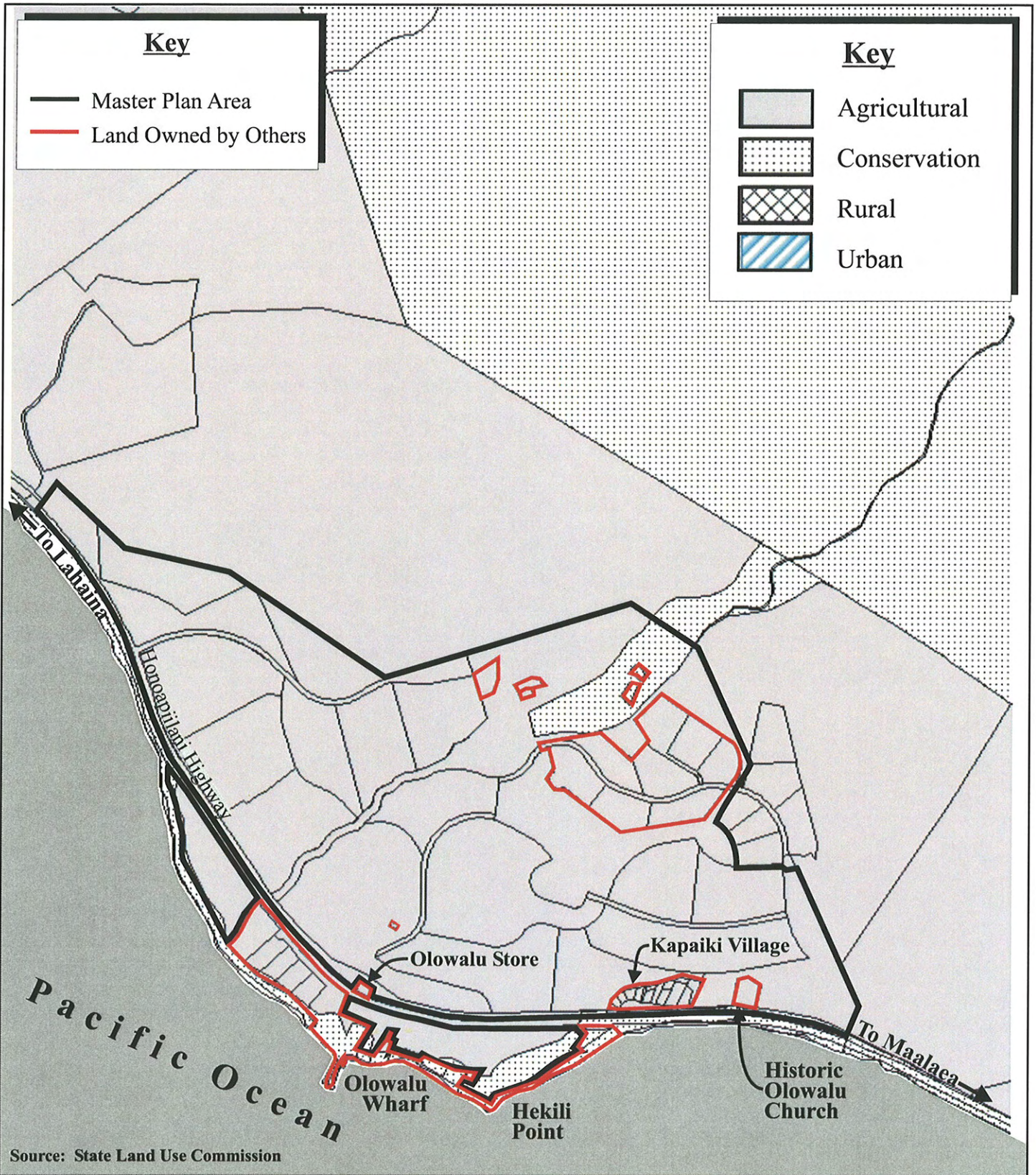


Figure 5

Proposed Olowalu Town
Master Plan
State Land Use Designations

NOT TO SCALE



2. West Maui Community Plan Amendment

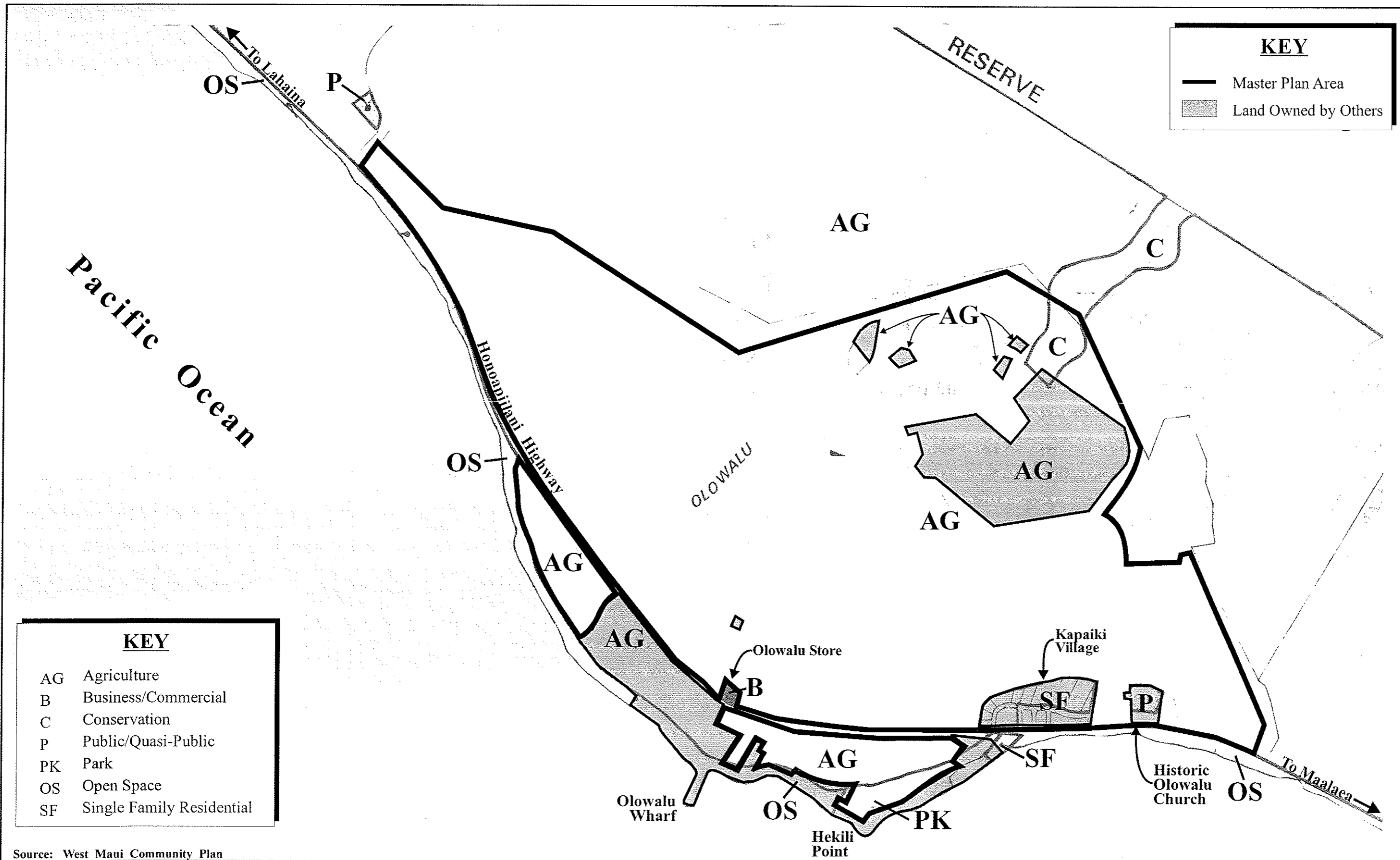
The majority of the Master Plan area is currently designated as “Agriculture” by the West Maui Community Plan with portions designated “Conservation”, “Park”, and “Open Space”. See **Figure 6**. A West Maui Community Plan Amendment (CPA) will be required to establish the land use categories delineated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

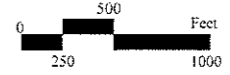


KEY	
AG	Agriculture
B	Business/Commercial
C	Conservation
P	Public/Quasi-Public
PK	Park
OS	Open Space
SF	Single Family Residential

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

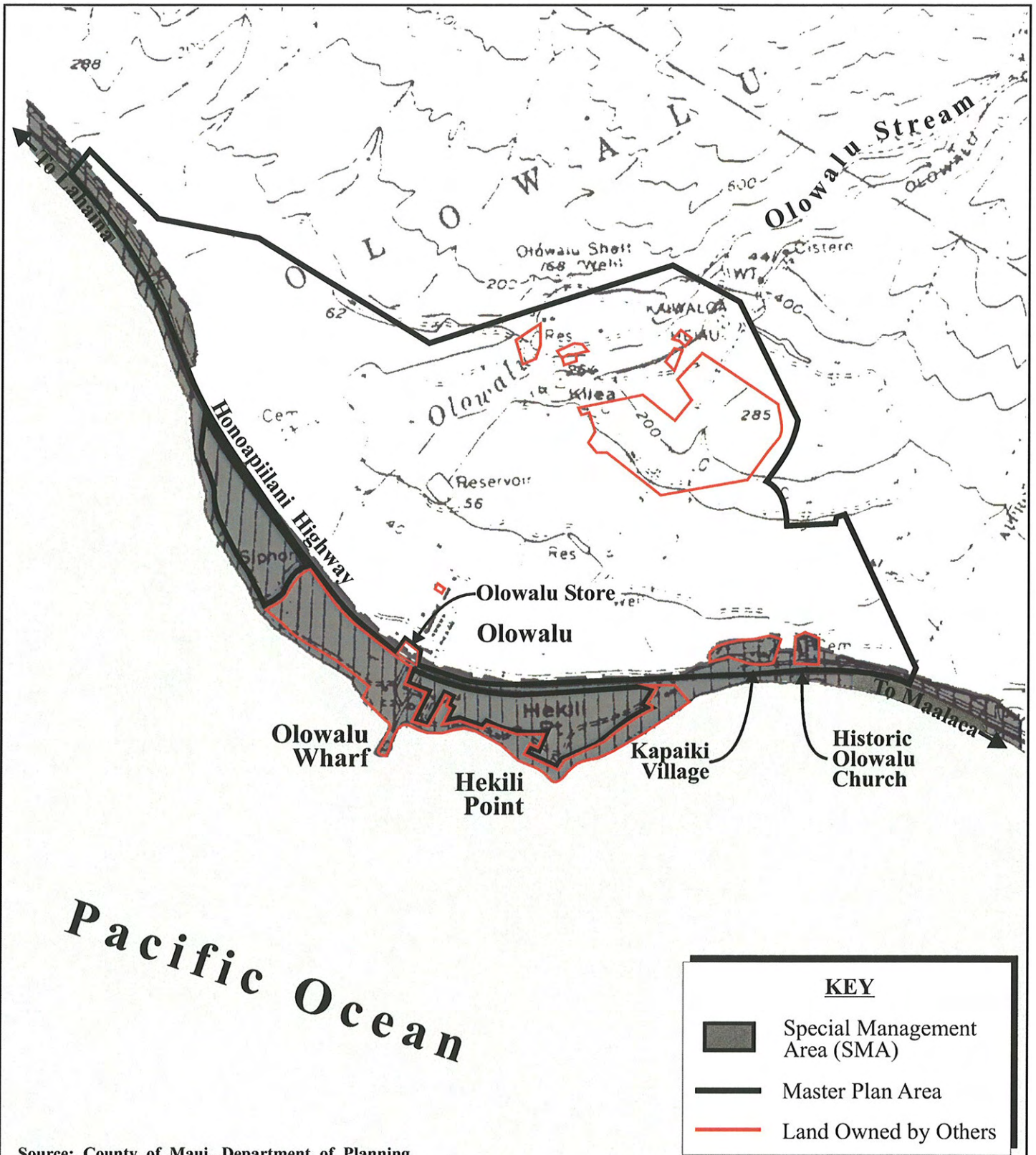
As noted above, the Master Plan will require an amendment to the West Maui Community Plan. In addition, utility system work and roadway improvements will affect the Honoapiilani Highway right-of-way, a State of Hawaii transportation facility. Wastewater treatment facilities are also proposed as part 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 | |

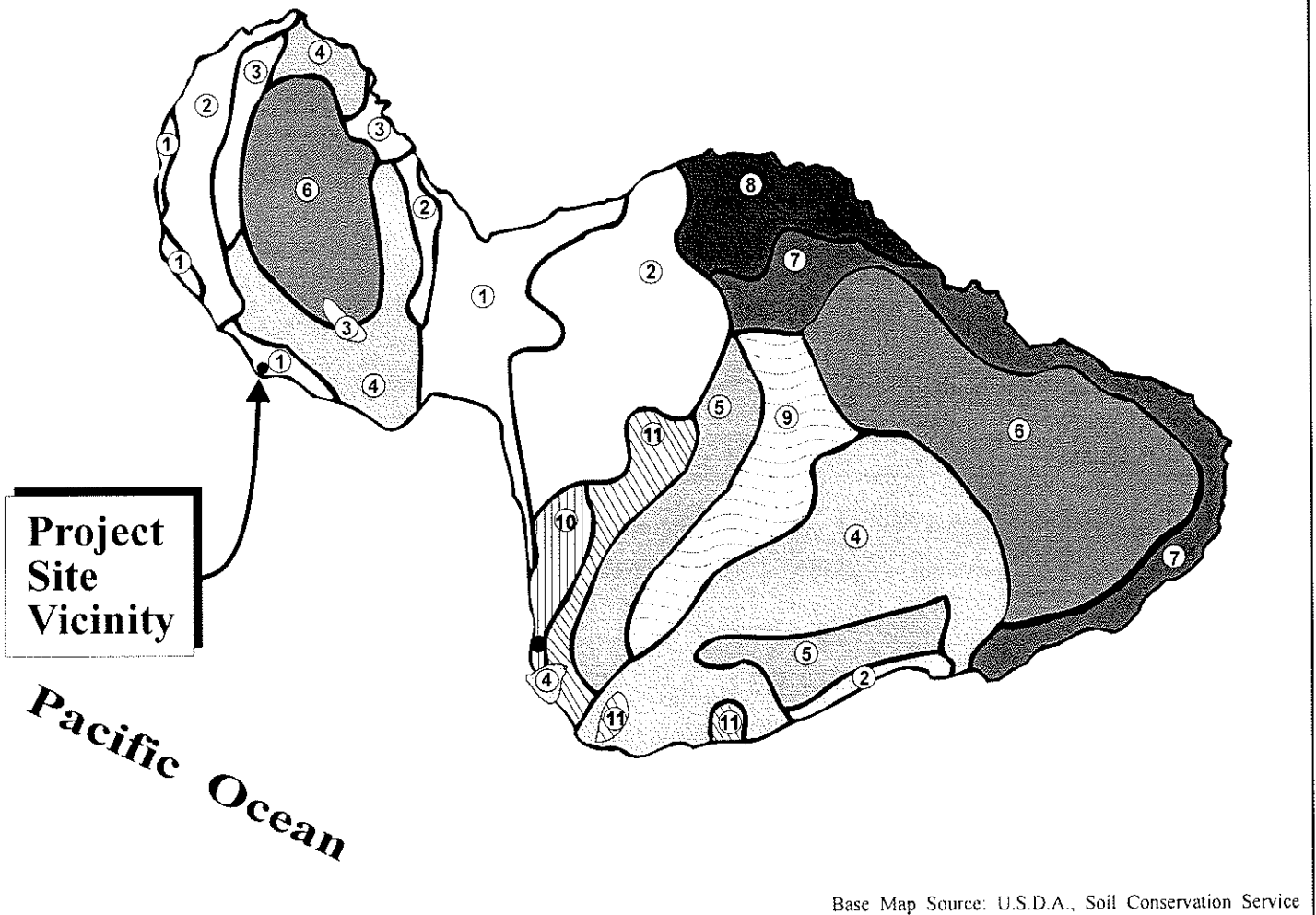


Figure 8

Proposed Olowalu Town Master Plan Soil Association Map

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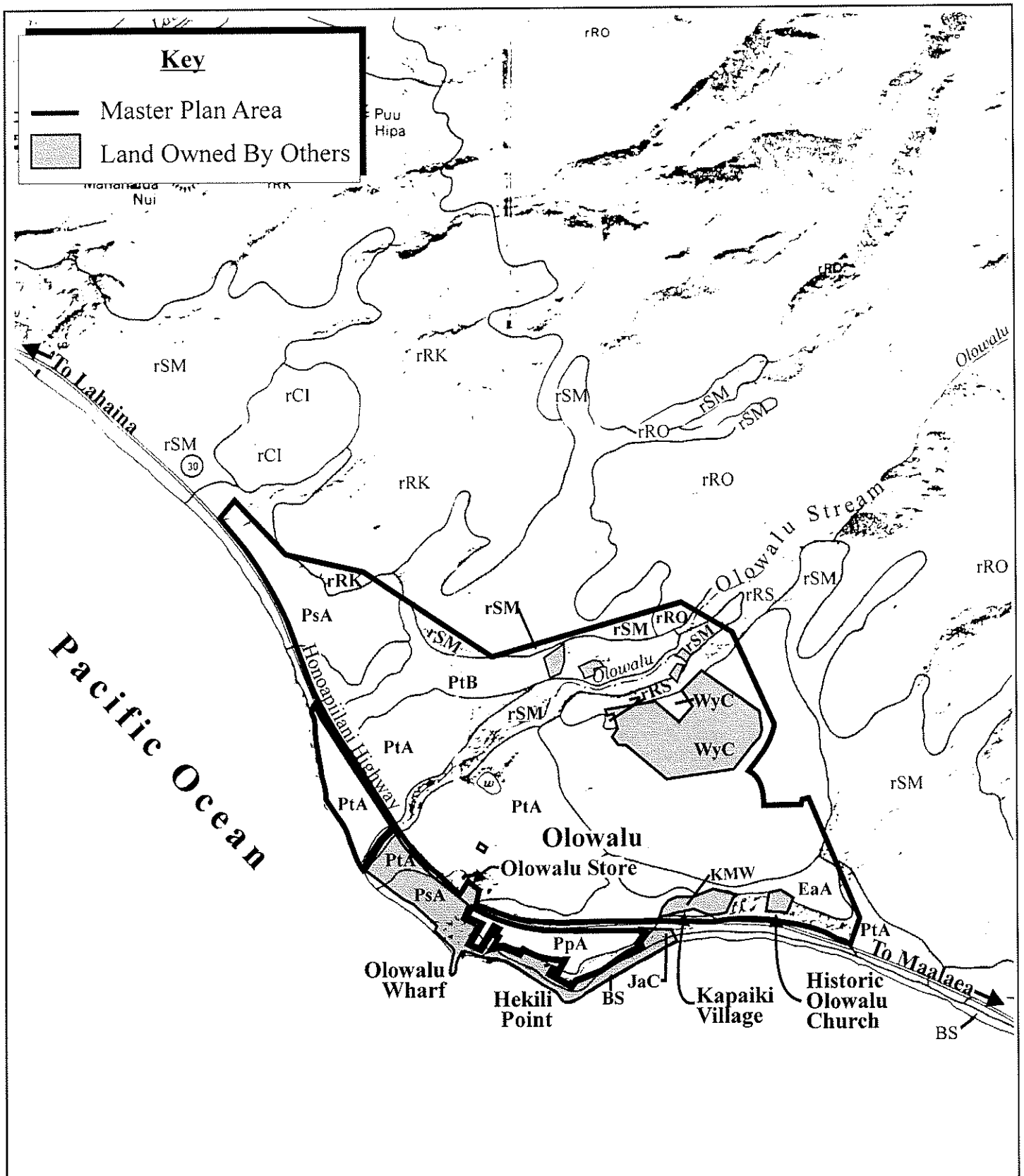


Figure 9

Proposed Olowalu Town
Master Plan
Soil Classifications Map

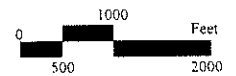


Table 6. Olowalu Town Master Plan Soil Series Summary

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	

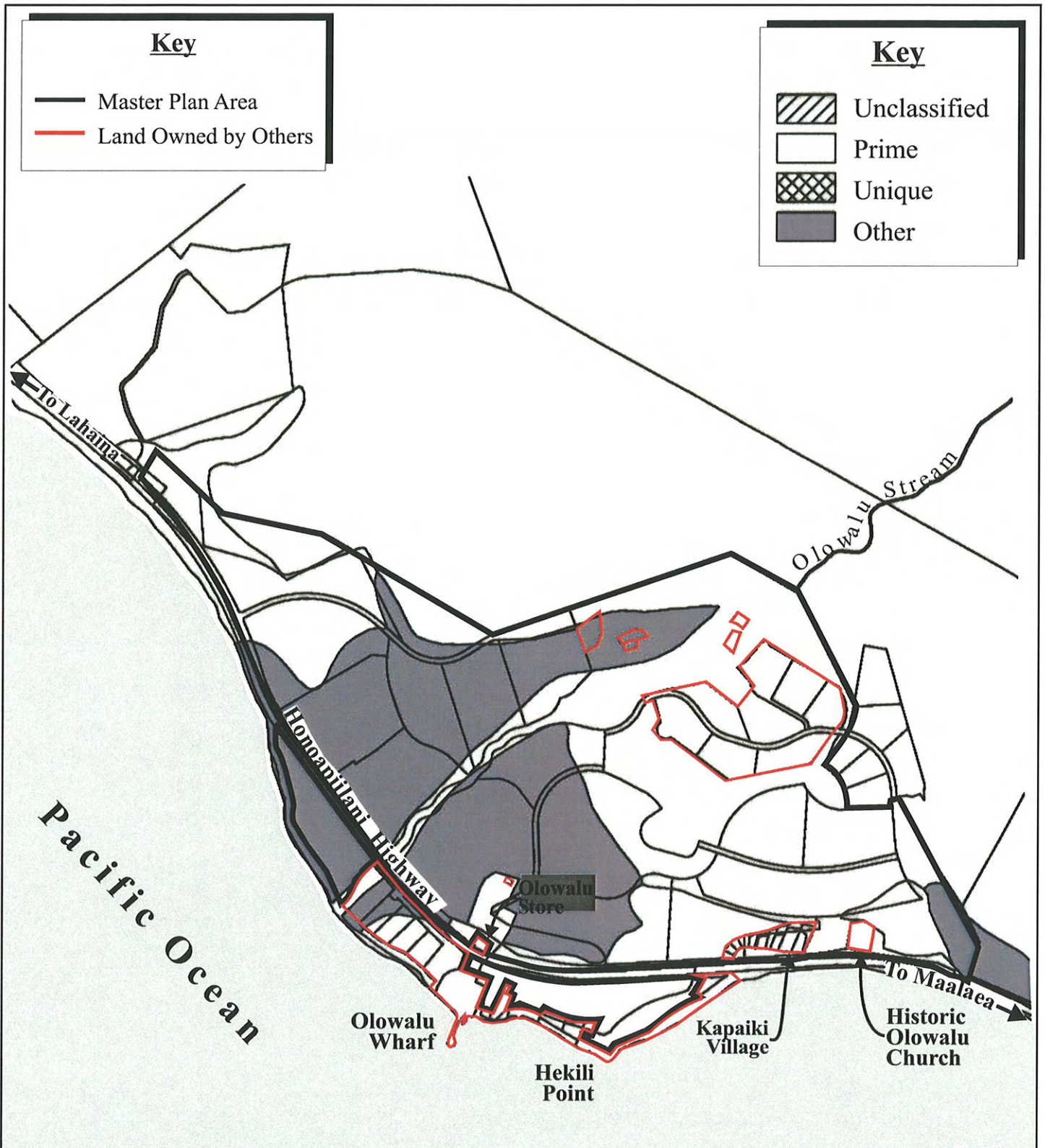
The majority of the Master Plan area is designated for agricultural use by both the State Land Use Commission and County of Maui zoning. Lands in the Olowalu area were formerly used to support the growing of sugar cane during much of the 19th and 20th centuries. At present, however, the vast majority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

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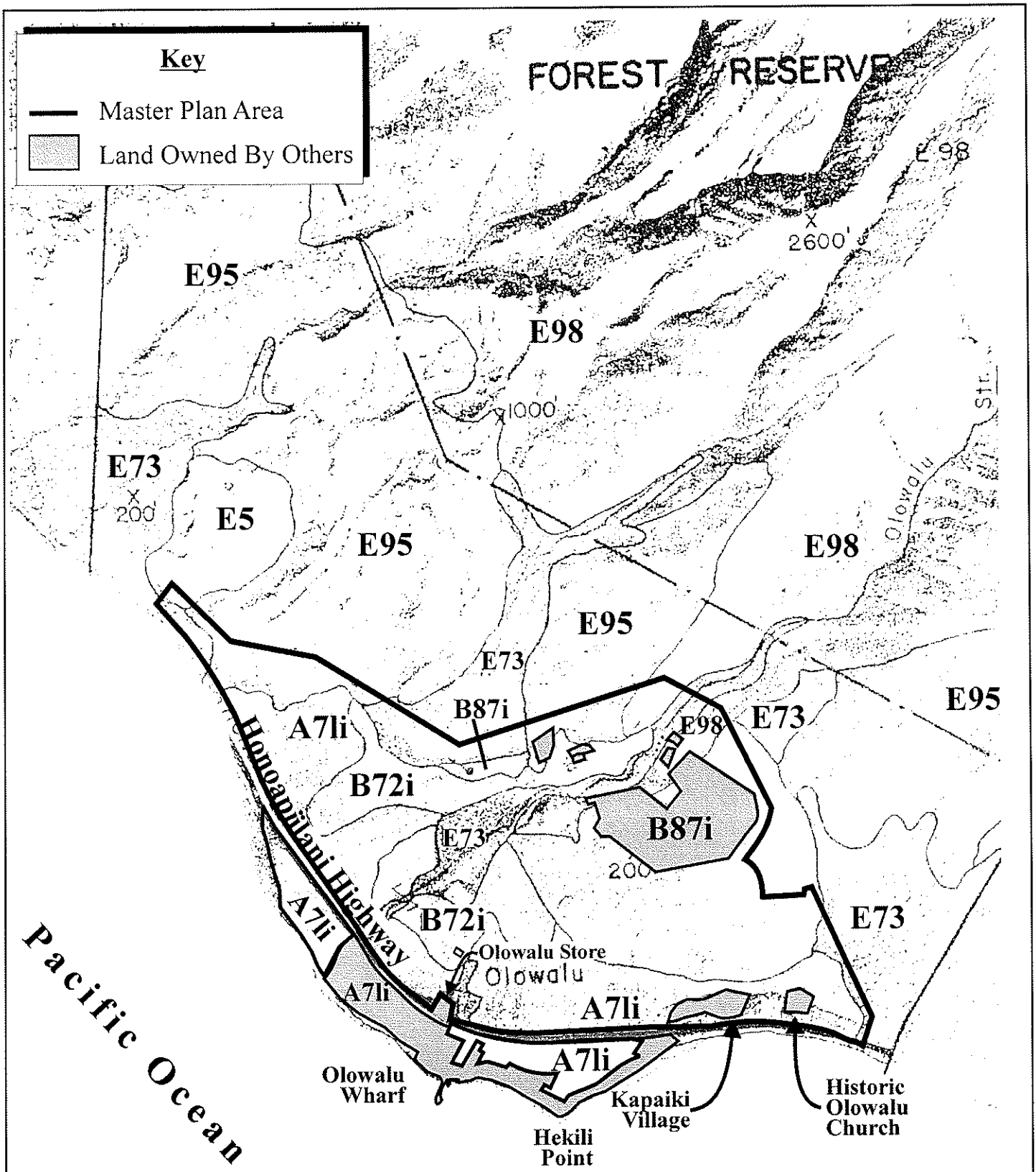


Agricultural Lands of Importance to the State of Hawaii (ALISH) Map



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

Olowalu Town/MasterPI/ALISH



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.

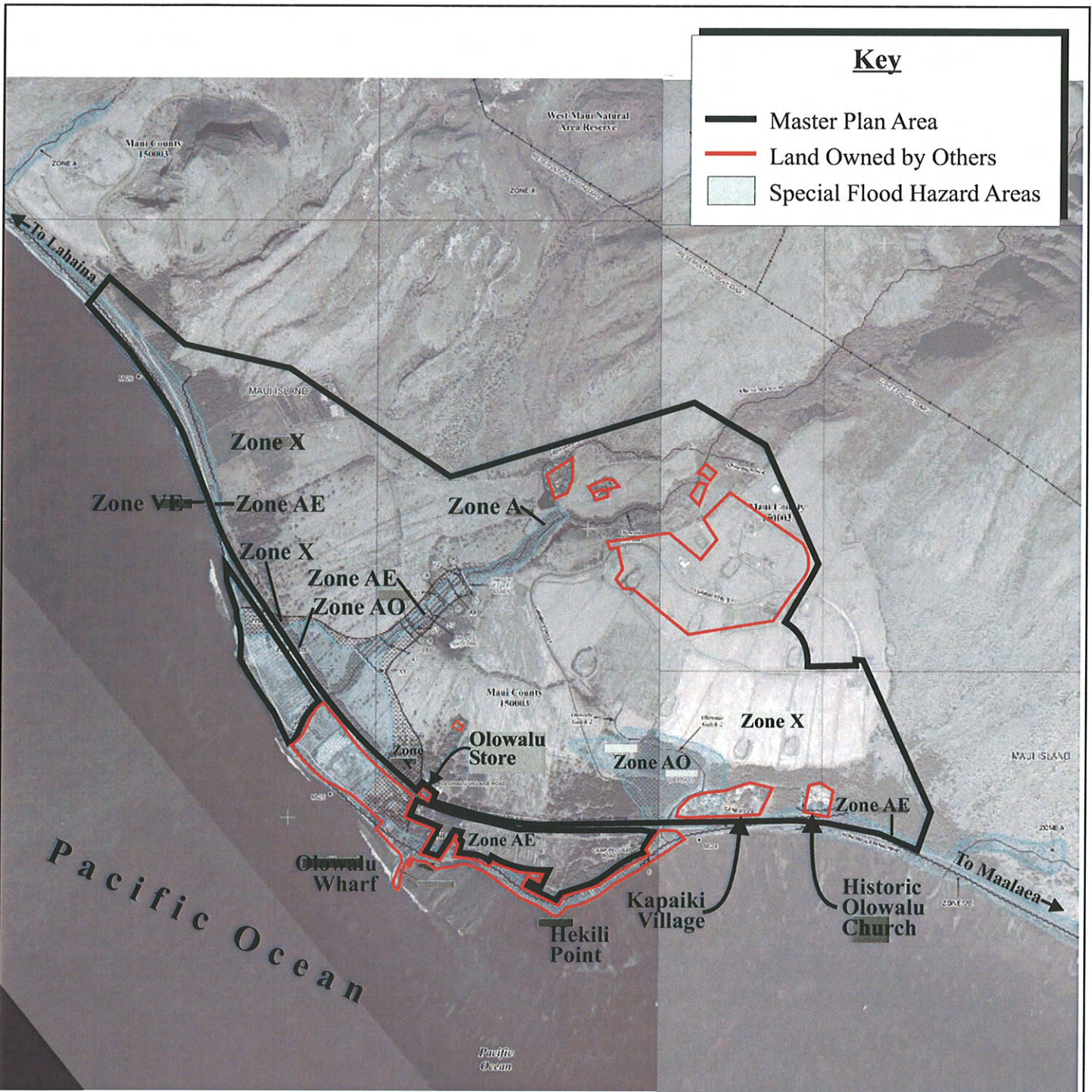
b. **Potential Impacts and Mitigation Measures**

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



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 Kekuiapoiwa 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.

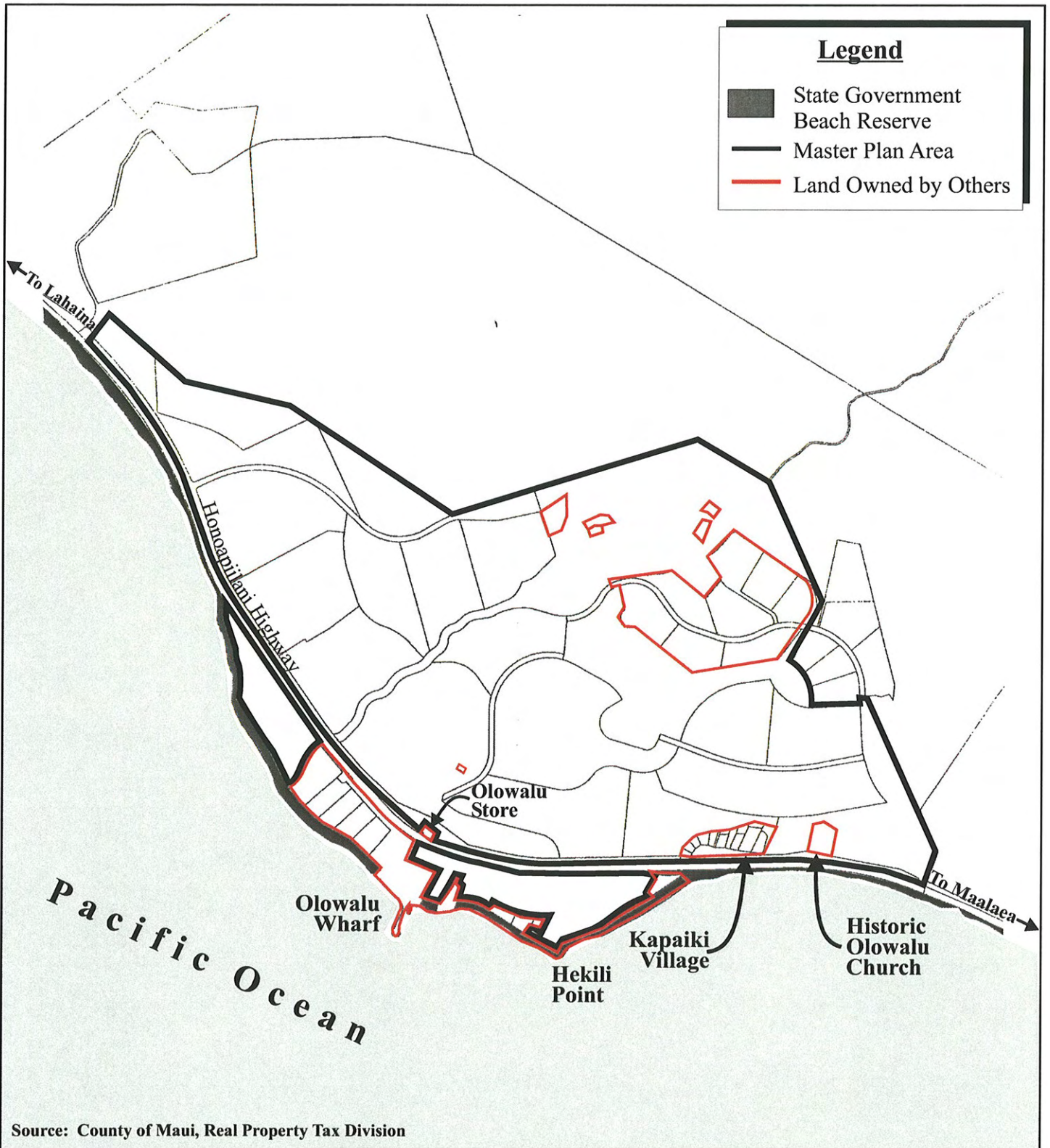


Figure 13

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:

DATE	GROUP/ENTITY	LOCATION
▪ 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 nd meeting)	Honolulu, Oahu
September 2006	same as above (3 rd 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 nd 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 nd meeting)	Wailuku, Maui
April 2007	same as above (3 rd meeting)	Wailuku, Maui
February 2008	same as above (4 th 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 nd meeting) same as above (3 rd 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 nd 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 nd 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 nd 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 nd meeting) same as above (3 rd 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 (2nd 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 (2nd 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 (2nd 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 Maui Nui Marine Resource Council, Representatives Olowalu, Maui
January 2009 same as above (2nd meeting) 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

INDIVIDUALS

- 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
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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
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Honolulu, Hawaii 96813

STATE AGENCIES

6. Brennon Morioka, Director
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7. Major General Robert G.S. Lee, Director
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8. Russ Saito, State Comptroller
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9. Sandra Lee Kunimoto
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10. Theodore Liu, Director
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11. Karen Seddon
Executive Director
Hawaii Housing Finance and Development Corporation
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12. **DBEDT Energy Resources & Technology Division**
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13. Kathryn Matayoshi, Acting Superintendent
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14. Katherine Kealoha, Director
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15. Clyde Namuo
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16. Kaulana Park, Chairman
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17. Lillian B. Koller, Director
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18. Laura H. Thielen, Chairperson
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P.O. Box 621
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19. Abbey Seth Mayer, Director
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20. Heidi Meeker
Planning Section
Office of Business Services
Department of Education
809 Eighth Avenue
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21. Lindsay Ball
Complex Area Superintendent
(Lanai/Molokai/Hana/Lahaina)
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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
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919 Ala Moana Blvd., Room 300
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24. **Department of Health**
Environmental Planning Office
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25. Alec Wong, P.E., Chief
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26. Darwin Ching, Director
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830 Punchbowl Street
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27. Dr. Puaalaokalani Aiu, Administrator
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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
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30. **U.H. Environmental Center**
2500 Dole Street, Krauss Annex 19
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31. Rosalyn H. Baker, Senator
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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
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- COUNTY AGENCIES**
33. Charmaine Tavares, Mayor
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34. Deidre Tegarden, Director
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35. Gen Inuma, Administrator
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36. Jeff Murray, Fire Chief
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37. Lori Tshako, Director
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39. Danny Mateo, Council Chair
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40. Michael Molina, Council Vice-Chair
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41. Councilmember Gladys Baisa
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42. Councilmember JoAnne Johnson
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43. Councilmember Sol Kahoohalahala
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44. Councilmember Bill Medeiros
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45. Councilmember Wayne Nishiki
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46. Councilmember Joseph Pontanilla
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47. Councilmember Michael Victorino
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48. Jeff Hunt, Director
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49. **Maui Planning Commission**
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51. Milton Arakawa, Director
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52. Cheryl Okuma, Director
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54. Jeffrey Eng, Director
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Department of Water Supply
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57. Theo Morrison, Executive Director
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648 Wharf Street, Suite 102
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58. Joan McKelvey, President
Lahaina Town Action Committee
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59. **Maui Memorial Medical Center**
221 Mahalani Street
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60. Ken Hansen
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61. Bill East
**Olowalu Makai-Komohana
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62. Randy A. Ragon, President
**Olowalu Mauka Homeowners
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63. Joe Pluta, President
West Maui Improvement Foundation
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Lahaina, Hawaii 96761
64. Zeke Kalua, Executive Director
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Lahaina, Hawaii 96761

OTHER CONSULTED PARTIES

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Customer Operations
Maui Electric Company, Ltd.
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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.

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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>
MONOCOTS			
ARECACEAE (Palm Family)			
<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
CYPERACEAE (Sedge Family)			
<i>Cyperus rotundus</i> L.	nut grass	non-native	common
POACEAE (Grass Family)			
<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
DICOTS			
AIZOACEAE (Fig-marigold Family)			
<i>Trianthema portulacastrum</i> L.	-----	non-native	rare
AMARANTHACEAE (Amaranth Family)			
<i>Amaranthus spinosus</i> L.	spiny amaranth	non-native	uncommon

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATUS</u>	<u>ABUNDANCE</u>
ASTERACEAE (Sunflower Family)			
<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
BORAGINACEAE (Borage Family)			
<i>Cordia subcordata</i> Lam.	kou	polynesian	rare
<i>Tournefortia argentea</i> L. fil.	tree heliotrope	non-native	rare
BUDDLEIACEAE (Butterfly Bush Family)			
<i>Buddleia asiatica</i> Lour.	dog tail	non-native	rare
CHENOPODIACEAE (Goosefoot Family)			
<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
CONVOLVULACEAE (Morning Glory Family)			
<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
CUCURBITACEAE (Gourd Family)			
<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
EUPHORBIACEAE (Spurge Family)			
<i>Chamaecyce hirta</i> (L.) Millsp.	hairy spurge	non-native	common
<i>Chamaecyce hysopifolia</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 kolea 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 hoactli*) 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>Francoelinus 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

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APPENDIX B.

Olowalu Talk Story



OLOWALU TALK STORY



Vol. 1 No. 1

November 2005

Olowalu.net

“We honestly believe there is a better way - a way to balance the need for homes and jobs with a respect for the natural environment and our irreplaceable culture.”



Olowalu is one of the larger valleys in West Maui. Photo circa 1998

A COMMUNITY-BASED PLANNING WORKSHOP

By Bill Frampton



Bill Frampton

ALOHA

Thank you for taking the time to read this message that has been mailed to your home by our newly formed company, Olowalu Town, LLC.

The purpose of this newspaper is to respectfully request that you join us for “Olowalu Talk Story: Community Based Planning Workshop” to provide your thoughts on re-establishing a sustainable community at Olowalu.

WE GREW UP IN SMALL TOWNS

First, we would like to introduce ourselves. We are Bill Frampton and Dave Ward. Both of us come from small towns. Dave was raised in New Bern, North Carolina and I was raised here on Maui in Kula. The two of us met many years ago during our days of canoe

racing together at the Hawaiian Canoe Club and have since become great friends, as well as, business partners.

Historically, Maui has been an island of separate and distinct communities. However, many of us have watched over the years as distinct small towns and communities have become blurred together, traffic has become more and



Dave Ward

more congested, and questions have been raised about a future where we do not know our neighbors, affordable housing is scarce and there are no stores or parks that we can walk to.

We honestly believe there is a better way - a way to balance the need for homes and jobs with a respect for the natural environment and our irreplaceable culture. Subdivisions should not sprawl between

communities; instead separate and distinct communities should be established that have multiple types of housing (affordable, senior, market), schools, civic centers, fire and police stations, medical facilities, childcare, parks, recreational opportunities, walkways, bike paths, and neighborhood businesses.

COMMUNITY DRIVEN PROCESS

This opportunity to work together to create a livable community is right now before us; however, this needs to be done right. It needs to involve a sincere public outreach process from the start, it requires that both private and public professionals work together. Also, the update of the County’s General Plan needs to be recognized and taken into account. A proposed community-based planning process could produce an informative plan which, along with various land use studies, can be used to compliment the General Plan update process. Informed decisions can then be made with a plan that is driven by sincere community input.

We believe that now is the time to work together with the County for the establishment of a sustainable and livable community.

This new company, Olowalu Town, LLC, is committed to creating a community at Olowalu based on the above ideas. Dave and I have formed Olowalu Town, LLC with the existing owners of Olowalu. In this new company, Dave and I are the “developers” or the decision makers in the company. Right away, we recognized that we needed to bring in a professional with specific expertise in planning and design of sustainable communities. As such, we hired a distinguished planner: Mr. Andres Duany of Duany Plater-Zyberk & Company (DPZ).

DPZ will be leading our week long community based planning workshop. DPZ is a world-class firm that has designed and planned over 300 communities nationally and internationally. DPZ is very much looking forward to being our lead design team and they are hopeful to have significant participation from the community. As such, we are requesting your assistance to provide our design team with valuable information regarding what is important to all of us on Maui.

YOUR KOKUA IS MUCH APPRECIATED

We are respectfully requesting that you consider joining us for the planning workshops. The planning workshops will be held over several days beginning on Tuesday, November 15th, with our opening session from 5:30 PM to 7:30 PM, at the King Kamehameha Clubhouse on Hono’opiliiani Highway in Waikapu, and ending with the Closing Presentation on Monday, November 21st, from 5:30 PM to 7:30 PM, at the same location. Pupus and refreshments will be served at each event. A full schedule of all sessions and meetings is included on Page 8 in this paper (Back Page). All sessions and meetings are free and absolutely open to the public.

Again, Dave and I are pleased to invite you to attend our planning workshops to share and provide our design team with valuable information regarding what is important to you in creating a community at Olowalu. The future of Olowalu will come from the suggestions and ideas that arise as a result of your participation in this unique event.

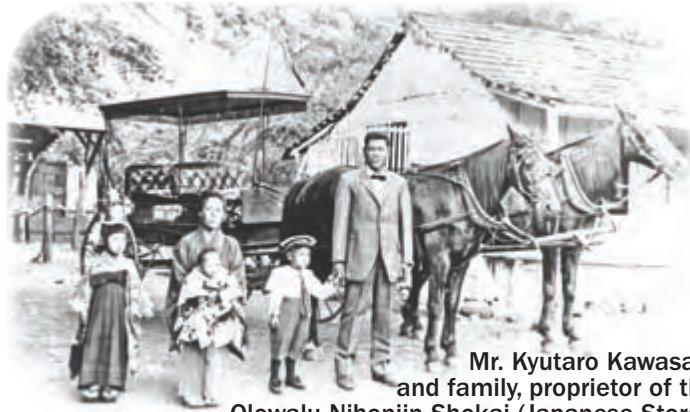
Thank you for your time and consideration. If you have any questions or would like additional information, please feel free to contact us at 249-2930. A hui hou.

MAHALO

FROM AHUPUA‘A TO PLANTATION: A HISTORY OF OLOWALU

For centuries, the ancient Hawaiians of Olowalu Valley flourished as a community based on the Hawaiian concept of Ahupua‘a, a land division extending from the mountains to the sea.

Learn more about Olowalu's history at: OLOWALU.net



Mr. Kyutaro Kawasaki and family, proprietor of the Olowalu Nihonjin Shokai (Japanese Store).

By Gail Ainsworth

The Ahupua‘a system allowed Hawaiians to thrive as they were able to grow breadfruit and taro in the higher areas and sweet potato and coconuts closer to shore. The sea provided fish and the forest supplied wood for canoes and housing. A Hawaiian born in the valley could learn a skill, raise a family, trade, play, work, and worship within the Olowalu Ahupua‘a.

An incident at Olowalu turned the tide of post-contact Hawaiian history. In 1790 Hawaiians stole a boat from the American ship *Eleanora* and killed a sailor, infuriating Captain Simon Metcalfe. To retaliate, Metcalfe sailed to Olowalu, assured the villagers of peaceful trading, and

then opened fire killing more than 100 Hawaiians. This tragedy, termed the Olowalu Massacre, set into motion a series of events which left two Western seamen and a ship in the hands of the ambitious Big Island chief Kamehameha. With these advantages, Kamehameha ultimately triumphed in the race to unite the Hawaiian Islands.

MISSIONARIES AND SUGAR

Both Protestant religion and education came to Olowalu in the 1820s when the Reverends William Richards and Charles Stewart traveled from Lahaina by canoe to preach and teach. In 1835 Reverend Ephraim Spaulding built the first church, a small adobe structure which was later replaced by one made of stone. A decade after



Students and teacher, Richard Ho‘opi‘i, of the Olowalu School, circa 1915. Ray Jerome Baker, Bishop Museum

the Protestants' arrival, Father Modest Favens baptized Catholic converts at Olowalu, although it would not be until 1916 that the permanent St. Joseph Church was built.

The sugar industry came early to Olowalu. In 1864 King Kamehameha V, then ruler of the Hawaiian Kingdom, invested in the newly-formed West Maui Sugar Company. He was only one of



King Kamehameha V

H.L. Chase, Bishop Museum

many subsequent owners of the plantation, later called the Olowalu Sugar Company. The company boomed, requiring the hiring of Chinese workers, followed by Portuguese, South Sea Islanders, Germans and Japanese.

CULTURAL MIX

The ethnic mix changed again in the 20th century with the

importation of Puerto Rican, Korean and Filipino workers.

The multi-cultural residents of Olowalu shopped at the Olowalu Nihonjin Shokai (Olowalu Japanese Store) and C. Sam Lung & Company, a general store and coffee saloon. Students attended the one-room Olowalu School, and the Olowalu Japanese Language School taught Japanese children the culture of their homeland.

The sea provided the primary contact with the outside world. For decades, the Inter-Island Steamship Company picked up and delivered mail, freight and passengers at Olowalu Landing. The world also entered the Olowalu community through regular showings at the Olowalu Theater.

The 1930s brought more change to Olowalu. In 1931 Pioneer Mill Company purchased Olowalu Sugar Company; Olowalu School closed, requiring children to travel to Kamehameha III School in Lahaina; and M. Ichiki Store replaced the C. Sam Lung Store.

FAMILY

Despite many changes over the years, the community remained close. Workers lived in small camps with names such as Filipino Camp, Beach Camp, and Makimoto Camp. Much of the community was sports-crazy, children and adults alike. Plantation families worked hard and lived a frugal life, many of them growing vegetables and fruit trees, raising chickens and fishing. Everyone knew each other; neighbors shared and took care of those in need.

Most of the community dispersed when company housing was phased out. Even though the plantation camps had disappeared, professional sports hero Wally Yonamine returned often to his hometown of Olowalu because, he said, "When I go there, it helps me look back over time. Olowalu still makes me feel humble."



Olowalu Sugar Mill and Oceanside Camp. Hawaii State Archives



Illustration from *The Hawaiian Thatched House* by Russell A. Apple.

SUSTAINABLE DEVELOPMENT IS NOT NEW TO HAWAI‘I, LEARNING FROM THE PAST CAN HELP US PLAN A BETTER MAUI

By Bill Frampton

The delicate balance of “Environment and Sustainable Development” is a key concept that provides an answer to the question of how humankind can coexist in harmony with nature. Not surprisingly, this concept is nothing new to the Islands; sustainability was a way of life for the ancient Hawaiian societies. One way this was exemplified was the Ahupua‘a, the genius organizational structure designed by the Hawaiian culture as self-supporting communities. Ahupua‘a were planned and managed with great care, sensitivity and wisdom to ensure the prolonged existence of natural and cultural resources.

John Kaimikaua, Kumu Hula and educator from O‘ahu, explains the guiding principles of managing the ancient Ahupua‘a¹ as follows:

Kai Moana

Preserve all life in the ocean, from the shoreline to the horizon.

Makai

Respect for the land and resources extending from the shoreline to the sand’s reach.

Mauka

Respect for the land and resources extending from the sand’s edge to the highest mountain peak.

Kamolewai

Respect for all water resources including rivers, streams, and springs and the life within.

Kanakahonua

Preserve and respect the laws of the land and each other to insure the community’s health, safety and welfare.

Kalewalani

Respect for the elements that float in the sky including the sky, moon, clouds, stars, wind and rain which guide the planting and fishing seasons, provide water and create the tides and directions for ocean navigation.

Kapahelolona

Preservation of the knowledge of practitioners.

Ke‘ihi

Preservation and respect for the sacred elements including deities, ancestors, the forces of nature and ceremonial activities.

Notes:

¹ John Kaimikaua’s principles can be found at: hawaii.gov/dbedt/czm/todays_challenges/principles.html.

For more information on the Ahupua‘a and Green development please visit: Olowalu.net

Planning for a Better Maui

The planning of a sustainable community at Olowalu presents an incredible opportunity to interpret the ancient principles of the Ahupua‘a within a contemporary context. Ironically, today’s principles of “Smart Growth” and/or “Traditional Neighborhood Design” are very similar or identical to the land stewardship principles of mālama ‘aina, or having great care and respect for the land. Sustainability is defined as: creating a healthy balance between the needs of our culture, our economy, and the environment so that the rights for a healthy future for all living things are protected and nourished. We are committed to creating and developing a community that is founded upon sustainable land use principles.

Why Green Development?

“Many developers fear that following a green agenda will delay project schedules and raise costs. ... The reality, however, is that well-executed green development projects... perform extremely well financially. In fact, even though many of the leading-edge developers... have strong environmental backgrounds and ideals, the financial rewards of green development are now bringing mainstream developers into the fold at an increasing pace. It is possible - indeed it is the norm - to do well financially by doing the right thing environmentally. For example, project costs can be reduced, buyers or renters will spend less to operate green buildings, and developers can differentiate themselves from the crowd - getting a big marketing boost”.

Source: Rocky Mountain Institute



By DPZ Staff

About DPZ

DUANY PLATER-ZYBERK & CO.



Mr. Andres Duany

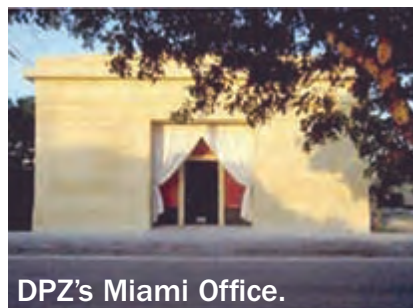
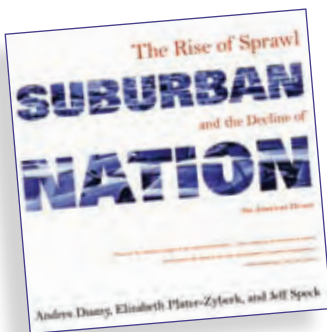
Celebrating its 25th year in 2005, Duany Plater-Zyberk & Company (DPZ) is a major leader in the practice and direction of urban planning, having designed over 300 new and existing communities in the United States and overseas.

DPZ's projects have received numerous awards, including 2 National AIA Awards and 2 Governor's Urban Design Awards for Excellence. The firm is led by its Principals, Andres Duany and Elizabeth Plater-Zyberk, who are co-founders of the Congress for the New Urbanism (CNU), recognized by the New York Times as "the most important collective architectural movement in the United States in the past fifty years." The movement, currently over 3,000 strong, marked a turning point from the segregated planning and architecture of post-war America; instead, they advocated and promoted the universal and time-tested principles of planning and design that created the best-loved and most-enduring places throughout the world.

Duany and Plater-Zyberk's recent book, *Suburban Nation*, written with Jeff Speck, was hailed as "an essential text for our time," and "a major literary event," in the national media. In 2004, *Builder Magazine* recognized Duany as the 5th most influential person in home building, the ranks of which included economists, bankers and developers, apart from architects, planners and builders. Duany was ranked after Alan Greenspan, Franklin Rainee, George W.

Bush and Jerry Howard, earning Duany the distinction of being the top ranking individual from the private sector. Duany sits on the board of the National Town Builders Association, and Plater-Zyberk shepherds the Knight Program in Community Building, a program that brings an interdisciplinary approach to the revitalization of inner cities. These and other efforts have earned Duany, Plater-Zyberk, and the firm at large international recognition and dozens of local and national awards, including the Thomas Jefferson Medal and the Vincent Scully Prize from the National Building Museum in recognition of their contributions to the American built environment.

Most recently, in response to the devastation of Hurricane Katrina and upon the request of Mississippi Governor Haley Barbour, DPZ is coordinating the rebuilding of eleven Gulf Coast towns for the CNU. Duany is heading the effort, and has organized a task force of over 100 New Urbanists, as well as local experts and officials. These professionals – including architects, planners, and transportation specialists – are currently completing a workshop dedicated to the renewal of the Mississippi coast. All are working at little or no cost. To find out more about DPZ please visit www.DPZ.com



DPZ's Miami Office.

"DPZ will set up a fully equipped design studio to draw up the concepts discussed by the community during the planning workshops. The illustrations are then presented back to the community for their immediate feedback and refinement. This 'real time' communal planning process is one of the reasons we are bringing DPZ to Maui."

Bill Frampton

THE WORKSHOP

Olowalu Talk Story Community-Based Planning Workshop

By Dave Ward and DPZ Staff

This Planning Workshop is an intensive one-week planning session where Maui citizens, public agencies, world-class town designers, and other interested groups collaborate to create a vision for re-establishing a sustainable community at Olowalu. Everyone on Maui is invited and encouraged to participate in the workshop. It provides a forum for ideas and offers the unique advantage of giving immediate feedback to both the designers and workshop participants. More importantly, it allows everyone who participates to be a mutual author in the plan to re-establish Olowalu.

Olowalu Talk Story will be held from November 15th-21st at the King Kamehameha Clubhouse (former Grand Waikapu Country Club) in Waikapu. The team of design experts and consultants will set up a full working office, complete with drafting equipment, supplies, computers, copy machines, fax machines, and telephones. Members of Duany Plater-Zyberk & Company will lead public meetings throughout the week focusing on important land use topics.

Additionally, everyone is invited to participate in informal "open design meetings" while plans are actively being developed.

Through brainstorming and design activity, many goals are accomplished during the Planning Workshop. First, each individual who participates cultivates a personal stake in the ultimate vision. Second, the world-class design team obtains critical information about "how we live on Maui" to produce a plan and accompanying documents that address our local culture and aspirations apart from the physical aspects of design. Finally, since the input of various groups is gathered at one event, it is possible to hear many concerns, swiftly resolve issues, forge a common way forward and create a balanced plan during the workshop.

Ultimately, the purpose of Olowalu Talk Story is to establish a plan for Olowalu that reflects the collaboration of Maui's community ideas with world-class design concepts. Such a plan may be utilized in making sound decisions for future planning processes.

We need your help to integrate community ideas into a plan to re-establish a sustainable community at Olowalu. Food and refreshments will be provided at the meetings so bring your stories, ideas, dreams, and concerns to participate in Olowalu Talk Story.



Olowalu Stream.

“FLOWERS THRIVE WHERE THERE IS WATER”

By Senen Antonio, Architect and Planner, DPZ

There is a Hawaiian saying that goes “Mohala i ka wai ka maka o ka pua”. Translated, it means “Flowers thrive where there is water”, or “Thriving people are found where living conditions are good.”¹ The pattern of human settlement in Maui and the other islands, as evidenced by early Ahupua’a, had historically been influenced by this tenet, which suggests not only environmental sustainability, but social and cultural sustainability as well.

Unfortunately, many of the more recently developed communities in the islands have not always been guided by this philosophy.

Maui, and Hawaii at large, is continually evolving, as social, economic, political and technological changes and advancements demand new or altered forms and functions for places. These random demands of modern life increasingly threaten the fabric, and eventually the livability, of our towns and cities. Population growth and migration, transportation and infrastructure demands and expectations for a higher standard of life bear upon the quality of the built environment, and, until recently, often with unsatisfactory results.

In response to these pressures, several concerned architects, urban designers and planners banded in the late 1980s with the goal of reforming the built envi-

ronment through a return to Traditional Neighborhood Development (TND). Their response brought attention to the crisis of ad hoc urban development, and in turn they proposed a less wasteful alternative to suburban sprawl. Some twenty years later, TNDs can now be seen on the ground in the United States, and indeed around the world in new communities, in the revitalization of older neighborhoods and downtown districts, in metropolitan and regional growth plans, and even in the retrofitting of suburban shopping centers.

The basic principles behind the movement are universal. They promote the creation of real communities with pedestrian-oriented neighborhoods, mixed uses and streets shaped by buildings and landscape. The movement has grown to broad application, its principles extending to a wide range of development contexts, densities and design. The principles project an ideal of a sustainable quality of life that competes with the American suburban dream.

At the regional level the movement promotes environmental and agricultural conservation, as well as the equitable distribution of public transportation and housing, so that important destinations such as employment, cultural and recreational centers are served by public transit. At the neighborhood level TNDs promote compact, mixed-use, mixed-income,

pedestrian-friendly increments of community building. Appropriate detailing of public space such as streets, and their interface with private buildings, is important to ensure the comfort and safety of the pedestrian. The varying degrees of density and their corresponding built forms are governed by the Transect — an organizational concept which proposes appropriate detailing (lot sizes, road widths, building form and function, etc.) according to each development’s classification within a continuum from a more rural to more urban context.

Traditional Neighborhood Development in the Hawaiian context, via a strong focus on traditional neighborhood development and the public engagement process, offers unique opportunities for capitalizing upon and reinforcing the innate sense and feeling of community. This is achieved by focusing on the unique story of each community towards developing and nurturing the special, appropriate balance of uses and activities in the area; leveraging investments in projects like civic/community facilities and spaces to complement and enhance private initiatives; strengthening the existing and emerging development context; and protecting culturally and environmentally significant sites and areas. Our towns and cities should present a mix of uses and activities for the neighborhood, where residents, workers and visitors can walk the streets, meet and engage each other and walk between destinations. They must offer places to live, work, shop and eat;

provide opportunities for cultural enrichment, learning and recreation; and present each community at large with an identifiable center, a gathering place and a common ground for celebrating and sharing stories.

Traditional Neighborhood Development in Hawaii brings the tremendous opportunity to mitigate the threat of continued sprawl on the islands and instead create and enhance compact communities that are great places to live, work, visit and recreate; that become important foci of community pride and are economically successful, as well as environmentally and culturally sustainable, developments.

Olowalu provides a dramatic setting for the proposed development like no other locale: set against the emerald lushness of West Maui Mountains, from which the Olowalu Stream emerges and meanders through the site, before finally reaching the blue expanse of the Au’au Channel on the site’s edge, all under a perfect azure canopy of sky. Olowalu presents the opportunity to create a new town guided by principles of sound development and growth, and by a strong sense of community life responsive to the land and local culture, all in the spirit of caring for Olowalu’s future.

¹ From ‘Olelo No’eau: Hawaiian Proverbs and Poetical Sayings, No 2178. Collected, translated and annotated by Mary Kawena Puku’i, 1983.



Hawaiian Hale, Iao Valley State Park.



Olowalu Petroglyphs. Maui Historical Society, Bailey House Museum

FOCUS MAUI NUI

By Bill Frampton — Focus Maui Nui (FMN) provided a unique opportunity for Maui County residents to define a common vision for the future of Maui. FMN was a successful grass-roots effort in which the community voiced their goals, desires, and needs regarding the future of Maui County. FMN was able to reach approximately 1,700 residents who represented a statistical, cultural, political and demographic cross section of the community. With this information, FMN produced “Recommended Strategies” and “Core Values” which can be utilized to help guide the future growth and direction of Maui. The vision and planning of a new livable and sustainable community in Olowalu will draw on FMN’s “Recommended Strategies” and “Core Values” listed below:

RECOMMENDED STRATEGIES: CORE VALUES:

- Improve Education;
 - Protect the Natural Environment;
 - Addressing Infrastructure Challenges, especially Transportation and Housing;
 - Strengthening the Economy; and
 - Preserving Local Culture and Traditions, Addressing Human Needs.
- Stewardship of Natural and Cultural Resources;
 - Compassion and Understanding;
 - Respect for Diversity;
 - Engagement and Empowerment of Local People;
 - Honoring Cultural Traditions and History;
 - Consideration of the Needs of Future Generations;
 - Commitment to Local Self-sufficiency;
 - Wisdom and Balance in Decision Making; and
 - Thoughtful, Island-appropriate Innovation.

Check out FMN at: FOCUSMAUINUI.com

DPZ'S MAUI HOLOHOLO

By Dave Ward — Duany Plater-Zyberk (DPZ) understands that Maui has a unique cultural, recreational, environmental, and architectural heritage to integrate into the Olowalu town design.

In late August, three members of DPZ’s design team made a week long trip to Maui. The team visited Lahaina, Pa’ia, Wailuku, Makawao and various other Maui communities, attended a class on the Hawaiian culture/language, met with various members of the community, and explored Olowalu.

Aside from these activities, the team gathered a bunch of books and even a Rap Reiplinger DVD to share with other designers in preparation for the November Community-based Planning Workshop.

When the DPZ team arrives in November, the entire 12-member team will holoholo to enlighten DPZ’s appreciation of Maui’s special sense of place. Planned activities for the team include:

- Participate in Blessing Ceremony for the Workshop
- Tour the Olowalu site to view existing uses and the physical characteristics of the land
- Guided hike thru Honokowai Valley to better understand the environment, history, and culture of Maui
- Meet with Olowalu Residents
- Attend a Cultural Class by local cultural/historical advisors
- Tour Wailuku, Pa’ia, Makawao, Lahaina, and Upcountry with local architects
- Attend a presentation on results of Focus Maui Nui

The DPZ team is looking forward to working with the Maui community to ensure that Maui’s special qualities are incorporated into a plan for Olowalu.



Boys playing at Kula Community Park.



East Maui from Olowalu beach.



Maui homes, circa 1902-1903. Kittie Gay Burkland (Hawaii State Archives)



Makawao's landmark store.

TRADITIONAL TOWN PLANNING CONCEPTS

By Tom Low, DPZ — Certain physical and organizational characteristics result in social and environmental benefits of Traditional Neighborhood Developments (TND). These characteristics include most of the following:

- 1** The Neighborhood has a discernible center. This is often a square or green, and sometimes a busy or memorable street intersection. A transit stop may be located at this center.
- 2** Most of the dwellings are within a five-minute walk of the center. This distance averages one-quarter of a mile.
- 3** There are a variety of dwelling types within the Neighborhood. These usually take the form of houses, rowhouses and apartments, such that younger and older people, singles and families, the poor and the wealthy, may find places to live.
- 4** There are shops and offices at the edge of the Neighborhood. The shops should be sufficiently varied to supply the weekly needs of a household. A convenience store is the most important among them.
- 5** A small ancillary building is permitted within the backyard of each house. It may be used as one rental unit, or as a place to work.
- 6** There may be an elementary school in the Neighborhood. The school should be close enough for most children to walk from their homes.
- 7** There are small playgrounds quite near every dwelling. This distance should not be more than one-eighth of a mile.
- 8** The streets within the Neighborhood are a connected network. This provides a variety of itineraries and disperses traffic congestion.
- 9** The streets are relatively narrow and shaded by rows of trees. This slows down the traffic, creating an environment for the pedestrian and the bicycle.
- 10** Buildings at the Neighborhood center are placed close to the street. This creates a strong sense of place.
- 11** Parking lots and garage doors rarely enfront the streets. Parking is relegated to the rear of buildings, sometimes accessed by alleys.
- 12** Certain prominent sites are reserved for civic buildings. Buildings for meeting, education, religion or culture are located at the termination of street vistas or at the Neighborhood center.
- 13** The Neighborhood is organized to be self-governing. A formal association debates and decides on matters of maintenance, security and physical change (but not on taxation which should be the responsibility of the larger community).

Learn more about Olowalu at: OLOWALU.net



Makawao; mixed use makes for a lively Town Center.



Keopuolani Regional Park. Linn Nishikawa

OLOWALU TALK STORY

Come help re-establish
a sustainable community
at Olowalu. www.olowalu.net

Olowalu Town, LLC
2073 Wells Street
Suite 101
Wailuku, HI 96793

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SEE PAGE 2



SEE PAGE 1



NOVEMBER

15 TUESDAY

OPENING PRESENTATION

5:30 p.m. - 7:30 p.m.

Public meeting. Opening ceremony, introduction of the consultant team, discussion of Traditional Neighborhood Design, and overview of the format of the planning workshops. Heavy pupus/snacks & refreshments.

All meetings will be held at the at the Kamehameha Country Club, (formerly the Grand Waikapu Country Club)

To talk story with Bill or Dave, please use the contact information below:

Olowalu Town, LLC
2073 Wells Street
Suite 101
Wailuku, HI 96793

Phone: 808-249-2930
E-mail: talkstory@olowalu.net
Web Site: www.olowalu.net

16 WEDNESDAY

Highway Traffic

9:30 a.m. - 11:30 a.m.

Public discussion of traffic issues, concerns, solutions, possible relocation of Honoapi'ilani Highway, Access Management Plan, Light food/snacks & refreshments.

Open Design

1:30 p.m. - 4:00 p.m.

Informal review period open to the community, Public encouraged to browse and observe physical drafting of plans/concepts, Team available for questions, Light food/snacks & refreshments.

Recreational Resources

4:30 p.m. - 6:30 p.m.

Public discussion of need for recreational resources, parks, shoreline access, fishing, surfing, camping, open-space, snorkeling. Light food/snacks & refreshments.

17 THURSDAY

Infrastructure Systems

9:30 a.m. - 11:30 a.m.

Public discussion of infrastructure needs, vehicular and pedestrian ways; street size/widths, water, wastewater, utilities, private and public systems, Light food/snacks & refreshments.

Open Design

1:30 p.m. - 4:00 p.m.

Informal review period open to the community, Public encouraged to browse and observe physical drafting of plans/concepts, Team available for questions, Light food/snacks & refreshments.

PROGRESS REPORT PRESENTATION

5:30 p.m. - 7:30 p.m.

Public presentation of current plans based on workshops held to date, Plans to be reviewed and discussed, Receive feedback from participants, Light food/snacks and refreshments.

18 FRIDAY

Public Facilities, Social & Civic Amenities

9:30 a.m. - 11:30 a.m.

Public discussion of need for public services, social & civic amenities, school, medical, fire/police, Public and Private services and amenities. Light food/snacks & refreshments.

Country-town

Business / Commercial

1:30 p.m. - 3:30 p.m.

Public discussion of business & commercial needs, location, types and size. Light food/snacks & refreshments.

Residential

4:30 p.m. - 6:30 p.m.

Public discussion of residential needs, affordable, senior, market, rental, multi-family and single-family. Light food/snacks & refreshments.

19 Saturday - Off

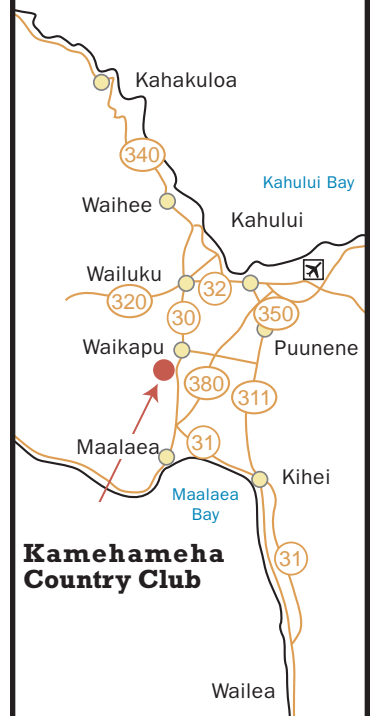
20 Sunday - Off

21 MONDAY

ALOHA PRESENTATION

5:30 p.m. - 7:30 p.m.

Public presentation of the Olowalu plan based on planning workshops, Discussion: Where Do We Go From Here? Heavy pupus/snacks & refreshments.





Olowalu Town

BY MAUI, FOR MAUI

SPRING/SUMMER 2007 | VOL. 2 NO. 1

OLOWALU TOWN, LLC

LEARN MORE AT OLOWALU.NET

A Community for Maui's Families

Aloha

In November 2005, we invited the residents of Maui to attend Olowalu Talk Story, a week-long community-based planning workshop. The purpose of the workshop was to provide the residents of Maui with an opportunity to come together to discuss the reestablishment of a community at Olowalu.

The workshop did not begin with a pre-determined town plan; rather it began with a blank slate. Our hope was to work with the community to create a plan for Olowalu that reflected both Maui's small town values and innovative design concepts. Over 1,350 participants came to Olowalu Talk Story and made our workshop a successful community-based planning effort.

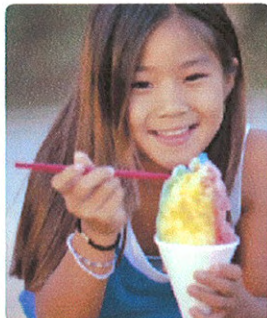
A Town for Maui Residents

At Olowalu Town, we have pledged to develop a community where Maui's residents can afford to live and raise families. A community where schools, stores, community centers, parks, ball fields, beaches/shoreline, and other civic resources will be within walking distance of residents' homes. A place designed to offer residents an opportunity to live and work in the same community, minimizing reliance upon cars.

Small Town Maui

Historically, Maui's small towns have been defined by distinct boundaries that helped maintain the size, scale, and unique character of each community. Each town and community had its own sense of place. People knew their neighbors and could walk to stores, parks, and schools. These towns helped bring us together and families looked out for each other.

However, over the past several decades, our towns have grown outward into the surrounding agricultural lands and open space. The distinct sense of place which characterized many of our



small towns has become blurred by this development trend, also known as suburban sprawl. If allowed to continue, suburban sprawl will have adverse effects on our cultural and social settings, traffic congestion, housing for local residents, economic conditions, and natural resources.

Stopping Sprawl

There is a solution to suburban sprawl. There is a better way to plan for the future of Maui. Our lead architect, Andrés Duany, has successfully utilized the design principles of Traditional Neighborhood Design (TND) to prevent or halt suburban sprawl in locations across the country. In doing so, he has preserved and created a number of unique communities. These design principles promote the development of communities that are pedestrian friendly, offer a wide range of housing opportunities, and allow residents to live within walking distance to corner stores, schools, parks, and community centers. Our hope is to adapt these successful design principles to guide the reestablishment of a community at Olowalu that will reflect our island



environment, native architectural traditions, and local building techniques.

What We Believe

We both grew up in small towns and we share small town values. Our families are here and this is where we are raising our children. We believe that our island should be focused on building communities for the residents of Maui, as opposed to only constructing new housing units. In the larger picture we are hopeful that our Olowalu Town project will help change how all of us manage growth and make decisions regarding the future of Maui.

We recognize and greatly respect that changing our ways is a bold proposal; however, we believe that it is necessary to step back and reconsider how we plan for growth and development on Maui. We need to be asking the hard questions: What are we doing to preserve the character of Maui? Are we building communities, or are we just continuing to encourage sprawl? Are we serious about creating a sustainable island? How do we manage and protect our natural resources, yet continue to sustain a healthy and viable economy for future generations to come?



E Komo Mai

We sincerely appreciate you taking the time to read our newspaper, and we hope that it informs you about our vision and conceptual plans for Olowalu Town. We are committed to continuing our community-based planning efforts to help further refine the conceptual plans. We welcome your comments and encourage discussion of our plans. Please contact us by email at: talkstory@Olowalu.net or call us at 249-2930. You can also visit our website at: www.Olowalu.net. Ahui Hou.

Mahalo,
Bill Frampton and Dave Ward



Island of Small Towns 2

Olowalu is based on the tradition of Maui's small towns that historically have helped shape our values and principles and define who we are.



Housing for Everyone 6

Olowalu Town will offer a wide range of housing for Maui residents, including affordable, gap-group, below market, senior, live-work, market, single-family, multi-family, and rentals.



Traffic Relief 8

Olowalu Town will help reduce traffic by being a community where residents can walk to stores, parks, schools, civic centers and even to work. Our plans include building a new mauka Honoapi'iiani Highway through Olowalu.



Parks and Open Space 9

Over 200 acres of parks, open space, beaches, greenways, trails, and bikeways will make Olowalu a healthy community. Public access to the shoreline for surfing, fishing and enjoyment will be preserved and enhanced.



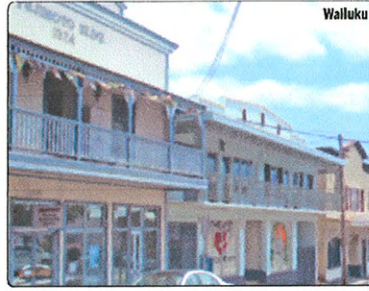
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BY MAUI, FOR MAUI

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Makawao



Wailuku



Paia

Makawao, Wailuku, and Paia are good examples of sustainable communities that provide residents with daily needs and services, while maintaining their small-town character.

Sustainable Communities

Maui is an island of small towns and communities, each separate and distinct.

Paia, Makawao, Wailuku, Lānaʻi City, and Lahaina Town are good examples of sustainable communities that provide residents with their daily needs and services while maintaining their small-town character. Until recently, these communities were surrounded by large tracts of agricultural land and open space.

Historically, our host Hawaiian culture demonstrated how to build sustainable communities that respect natural resources through the ahupuaʻa system. The Hawaiians developed the ahupuaʻa system in order to balance the needs of the environment, community, and economy.

Over the past few decades grass roots planning efforts in Maui County, such as Decisions Maui, Focus Maui Nui, and other events, have reiterated that our residents desire to balance stewardship of natural resources with community and economic needs.

are Not New to Maui

Preserving Maui's small towns and communities ensures that communities will be here for generations to come. By utilizing sustainable values and principles from the past and listening to Maui's residents, Olowalu Town hopes to balance the needs of Maui's growing families while maintaining our island's character and respecting the natural resources.



Sustainability: Balancing the needs of Community, Economy, and Nature. Olowalu Town proposes to reestablish a sustainable community by incorporating these design-related values and principles.

COMMUNITY

- Design small scale neighborhoods where you know your neighbors
- Provide wide range of housing types for all income levels and all stages of life
- Include community centers, meeting halls, and educational facilities close to homes
- Preserve historic and cultural resources to learn from the past
- Include social services, civic amenities, non-profits, and emergency services

ECONOMY

- Promote small shops, offices, and services that serve the daily needs of the community
- Include live/work units, office rentals, and office support systems
- Provide financial incentives for desired locally owned stores and emphasis on selling local goods
- Incorporate state of the art technology, communications, and high-speed connectivity

NATURE

- Provide recreational opportunities for good health and well being
- Include innovative green infrastructure systems to minimize impacts upon natural resources
- Utilize efficient land use that preserves open space and reduces the community's ecological footprint
- Exceed governmental storm water requirements to protect near-shore water quality and shoreline ecosystems
- Encourage landscaping with native plants that require less water
- Incorporate U.S. Green Building Standards (LEED) help conserve energy, fuel, and operation costs

"In the midst of today's intensity, refreshing effort is being made to capture by design the healthy attributes of the village."



In the days when villages dotted the hillsides and valleys and un-trampled meadows stretched for miles, human spirits were nourished

by their lush and inviting surroundings. Such tranquility could only lead to serene, peaceful, creative inhabitants.

In the midst of today's intensity, refreshing effort is being made to capture by design the healthy attributes of the village. Beginning with the involvement of Maui's people, the conceptual process encouraged cooperation and emotional ownership of a new attitude for future development on this island of limited space and abundant beauty."

Maui is ready for such a place. Let us anticipate with pleasure and hope the reawakening of community in the wholeness of a village.

Olowalu Village, we welcome you.

— ELIZABETH AYSON
Retired Principal; Iao Intermediate School

Olowalu Talk Story Values

The Olowalu Talk Story Planning Workshop attracted 1,350 participants. The workshops asked the community to help design a small town at Olowalu. Through surveys and general discussions, the Talk Story participants confirmed that the following values and principles should help guide the Olowalu Town planning process:

- Protect the environment
- Preserve culture
- Improve infrastructure
- Address water needs
- Build affordable housing
- Improve public facilities
- Strengthen island economy
- Preserve and enhance shoreline access



Grass Roots Planning

The Olowalu Talk Story values are very similar to other resident responses from successful community-wide grass roots efforts over the past several decades on Maui including:

Focus Maui Nui (2004): A public planning effort that produced the community's goals, desires, and needs regarding the future of Maui County. The "Recommended Strategies" and "Core Values" are being utilized to help guide the update of the County's General Plan.

Decisions Maui (1990): A grass-roots planning effort, which arrived at core community values and priorities, ultimately helped to guide the update of Maui County's 1990 General Plan.

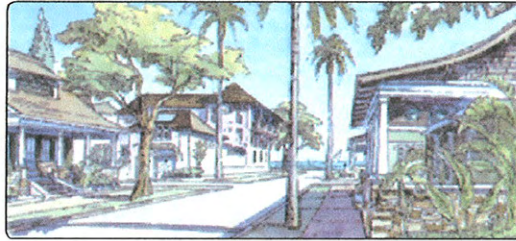
County of Maui Benchmark Study (2002): A household survey of residents countywide which arrived at seven top concerns for the county and local families.

Maui County Vision for Smart Growth (2001): Conducted by the Smart Growth Advisory Committee; arrived at twelve guiding principles to help achieve the smart growth vision.

Many overlapping themes and values identified in the above noted efforts included stewardship of natural and cultural resources, local self-sufficiency, respect for cultural traditions and history, and compassion and wisdom in decision-making.

Olowalu Town Community Benefits

Our goal for Olowalu Town is to reestablish a small town community that reflects the vision, values and goals of Maui's citizens and families.



1. A community where Maui's families can afford to live
2. A mixed-use community with homes close to parks, schools, corner stores, beaches, community centers, town centers, etc.
3. A wide range of housing types for all ages and all income levels
4. Plans include the construction of bypass highway through Olowalu, in conjunction with first phase
5. Over 200 acres of parks and open space (1/3 of the project) including preservation and enhancement of public shoreline access
6. Infrastructure systems at no cost to the County
7. Neighborhood town centers to provide community with economic sustainability, employment opportunities, and local business opportunities
8. Innovative infrastructure systems designed to have minimal adverse impacts upon the environmental resources
9. Exceed government regulations for drainage and storm water runoff to protect shoreline ecosystems
10. Innovative "O-Turn" on bypass highway allows cars to flow without stopping with no street lights or over/under passes

11. New bypass highway designed to accommodate light rail or mass transit
12. Existing Olowalu Cultural Reserve along stream expanded and enhanced to include mauka and makai trail system with educational/interpretive program
13. Walkable town reduces the number and length of automobile trips, reduces traffic congestion, conserves fuel/energy, and lowers emissions
14. Design team and architects certified by U.S. Green Building Council for Leadership in Energy Efficiency Design (LEED)

This project is planned to be a LEED-certified Neighborhood Development. The LEED for Neighborhood Development Rating System integrates the principles of smart growth, new urbanism, and green building. Certification provides independent, third party verification that the development's location and design meet accepted high standards for environmental responsibility and sustainable development. You can learn more at www.usgbc.org

Continued Suggestions Improve Town Plan

We would like to thank the following groups, associations, and community leaders listed below for helping to improve our plans for Olowalu Town.

Over the past 18 months they have provided us with opportunities to share our plans with them.

Please note that those listed below have not provided us with official endorsements or approvals; rather, they have kindly provided us with valuable feedback and suggestions on how to improve our plans.

- American Institute of Architects
- County Department of Transportation
- County Mayor and Administration
- County Planning Department
- County Public Works Department and Environmental Management
- Filipino Centennial Chair
- Governor's Office
- Hawai'i Carpenter's Union Reps.
- Island Of the Worlds Conference on Sustainability
- Kahului Rotary
- Kihel-Wailea Rotary
- Lahaina Rotary
- Maui Chamber of Commerce - West Side
- Maui Coastal Land Trust
- Maui Contractor's Association
- Maui County Council Members
- Maui Economic Development Board
- Maui Economic Opportunity
- Maui Tomorrow Board of Directors
- Maui Young Business Round Table Leaders
- Maui Nui Housing Task Force First Time Home Buyers Conference
- Na Kupuna O Maui
- Office of Hawaiian Affairs
- Sierra Club Executive Committee
- State Association of Professional Engineers
- State Department of Transportation - Highways Division
- State Senators and House Members
- Tri-Isle Main Street Resource Center
- Wailuku Rotary
- Lahaina-Honolua Seniors Citizen Club
- West Maui Taxpayers Association
- West Maui Mountains Watershed Partnership

Planning and Construction Timeline



2005-2007

Community-Based Planning

Early Consultation with Key Groups/People
Olowalu Talk Story
Community Outreach
In-House Conceptual Review
General Plan Advisory Committee Recommendation for Urban Boundaries



2008-2012

Permitting and Entitlement Process

Early Consultation and Notice of Environmental Impact Statement
Development of Technical Studies for Environmental Impact Statement
Public Review of EIS
Government Approval Process for Land Use Entitlements
Final Approval of Governmental Land Use Entitlements and Permits



2013-2018

Infrastructure Design And Construction

Final Design of Infrastructure
Construction of Initial Infrastructure Improvements including: Phase 1 Water Improvements, Decentralized Wastewater Treatment, Drainage Systems
Construction of relocated Honoapi'iiani Highway at Olowalu
Occupancy of First New Residents at Olowalu



2019-2028

First Neighborhood Construction Phase

Residents live and work in Olowalu's first neighborhood center
Neighborhood stores, parks, educational facilities within walking distance
Affordable, rental, senior, single-family, multi-family, apartment housing options



2029-2038

Second Neighborhood Construction Phase

Residents live and work around Olowalu's second neighborhood center
Additional infrastructure improvements
Expansion of civic, social and community services

The First Steps of a Long Journey

We are currently completing the first steps of a long journey. The Olowalu Town project will be entitled and constructed over the next 25 to 30 years.

Community-based Planning phase.

Highlights of this phase include:

- Olowalu Talk Story: 1,350 participants openly exchanged ideas with our design team during a weeklong event to help create the Conceptual Master Plan for Olowalu Town.
- Feedback: Presentations of plans have been made over past 18 months to various groups, associations, and community leaders. The purpose of these meetings was not to seek any endorsements or approvals, rather, the purpose was to seek suggestions on how to improve the plan.
- GPAC Process: We have committed not to begin our Entitlement and Permitting Phase until the General Plan Advisory

Committee (GPAC) has reviewed and approved a Maui Island Plan.

Permitting and Entitlement:

The next phase of the project is the Permitting and Entitlement Process which will include a request to change the existing land use designations from Agriculture to Project District (includes Urban and Rural Designations). Accordingly, this phase will involve a thorough public review and approval process, including:

- Preparation and Acceptance of an Environmental Impact Statement (EIS) Detailed and comprehensive review of project, technical studies, public meetings, and full disclosure of project's impacts upon natural and human environment.
- Land Use Entitlements Review and approval by the State Land Use Commission, the County Council, and Maui Planning Commission, with many public hearings and meetings.

Infrastructure Design and Construction:

Once entitled, the project will begin infrastructure design and construction

including the new mauka Honoapi'iiani Highway at Olowalu, internal roadways, parks/greenways, and water and wastewater systems. Ultimately, this phase will include families moving into a range of affordable, below market, and market homes.

Future Neighborhood Construction:

With initial infrastructure in place, neighborhoods will begin to be established. Future construction of the project will include additional homes, business/commercial establishments, neighborhood town centers, additional infrastructure systems, space for civic/social services, and educational facilities.

Mahalo for taking time to read our paper. We hope that this report will provide you with helpful information that you can use as we continue our planning process for Olowalu Town.

Feedback: Your comments and feedback regarding Olowalu Town are welcome at our website at: www.Olowalu.net or by writing us at: Olowalu Town, 2073 Wells Street, Suite 101, Wailuku, Hawai'i 96793.

"It's a community where you can afford to live and raise a family."



I grew up in a small town where we knew our neighbors, we looked out for each other, and we could safely walk or ride our

bikes to the store, school, or church. Our pace of life was not so hectic; the quality of life on Maui was good. I know that Bill and Dave are concerned about the changes to our island, especially about the changes to our small towns and communities. Olowalu Town is designed to be a small town like the one I grew up in, a community where you can afford to live and raise a family.

— JON SANTOS
Raised in Haiku

The Land Guides Olowalu's Design



Olowalu Talk Story was a community-based Planning Process. It began with a blank slate, there was no predetermined plan.



As planning for the proposed community began, the design team learned about existing land conditions, natural resources, archaeological and historic sites, drainage patterns, climate, scenic resources, and other critical components. This information was then used as a framework for town planning.

Long-time families of Olowalu and some of Maui's most respected cultural and professional experts provided our Lead Architect and Planner, Andrés Duany, and his design team with invaluable information related to Maui's small town communities, natural environment, and

cultural history. This information helped the design team appreciate and recognize the significance of Olowalu.

Geographic Boundaries

The steep valleys and slopes surrounding Olowalu serve as natural boundaries and help establish the size and scale of the community. The project site is situated at the foothills of the West Maui Mountains. The 620-acre project site is approximately 12% of the over 5,000 acre Olowalu Ahupua'a.

Natural Resources

The design of Olowalu Town requires careful consideration of existing natural resources: the Olowalu Stream, a healthy shoreline ecosystem, abundant ocean resources, and recreational sites for surfing, fishing, diving, and snorkeling.

Historical and Cultural Resources

Olowalu area contains many significant archaeological sites and historical features including Ka'iwaloa (Kawailoa) heiau, Awalua Cemetery, historic burials, Pu'u Kilea, petroglyphs, Kapaiki Village, the historic Olowalu Church, the Olowalu General Store, Olowalu Wharf, and the old Olowalu Sugar Mill. The preservation, enhancement, and protection of these sites and features shall be incorporated into the community design.

Cultural Reserve

The current Olowalu Cultural Reserve is approximately 75 acres. Plans include expanding the Cultural Reserve to increase mauka to makai access and enhance educational opportunities.

1,350 Residents Participate in "Olowalu Talk Story"

"Olowalu Talk Story," a week-long series of workshops and general sessions attracted 1,350 participants.

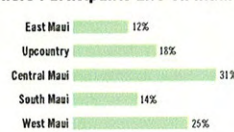
The workshops asked the community to help design a Small Town at Olowalu.

This was a significant first step in the continuing effort to maintain a dialogue between Maui residents, town planners, public officials and others.

WORKSHOP ATTENDANCE

SESSION	ATTENDANCE
Opening Session	420
Highway Traffic	105
Recreational Resources	60
Infrastructure Systems	100
Mid-Point Presentation	100
Public Facilities	35
Business / Commercial	40
Residential	110
Aloha Closing Session	380
Total Attendance	1,350

Where Participants Live on Maui



Participant Residency on Maui





Hokulani Holt-Padilla provided the design team with valuable knowledge of Hawaiian history, language, and culture.



Local Architects provided the design team with tours of Lahaina, Paia, Wailuku, and Makawao.



Reverend Earl Kukahiko conducted a Blessing prior to the planning workshop with the design team and the Olowalu residents.



Ed Lindsey led a tour of Honokowai Valley describing the natural environment, cultural history, and native plants.

The People Guide The Town Plan

During the Olowalu Talk Story workshop, participants and town planners exchanged valuable knowledge and experiences.

A town for Maui should be designed with insights from the people of Maui. Town planners learned essential information about Maui's culture and lifestyle, including the need to preserve our quality of life, provide affordable housing for Maui's residents, and preserve our natural resources.



The original Olowalu Talk Story newsletter informed and invited participants to the week-long community-based planning workshop. It was mailed to everyone on Maui.

An Evolving Design Process

Important Design Components:

Throughout the planning workshop, a number of alternative designs were presented to participants for review, comment, and feedback. The site plans were continuously evaluated, assessed, and updated to incorporate the following design components:

Streets/Circulation

Pedestrian-friendly, tree-lined roadways and connective street network.

Residential

A wide variety of housing types, including affordable, senior, market, single-family, multi-family, and rental.

Recreational Resources

Easy access to open spaces, parks, beaches, greenways, trails, and bike ways.

Infrastructure Systems

Environmentally sensitive infrastructure systems, at no cost to public, to include roadways, water, wastewater, and utility systems

Public/Civic Facilities

Sites for community centers, social services, schools, police, fire, and medical facilities.

Business/Commercial

Neighborhood town centers for local businesses with economic opportunities for residents, including live/work units and access to daily services.



Plans were created based on various neighborhood locations. Each neighborhood is defined by the 5-minute walk.



Traditional Neighborhoods for People, Not Cars

Mixed-Use Neighborhoods

The basic building block for Olowalu Town is the mixed-use neighborhood. Neighborhoods will have defined centers, shops and stores to satisfy daily household needs, and a variety of places to live and work.

Small Walkable Neighborhoods

The ideal size or scale of a walkable neighborhood is measured by a **5-Minute Walk*** with only a 1/4 mile from center to edge. The neighborhood center is a gathering place, such as a town square, a park, town center, or green space.

*Defined as a Pedestrian Shed

"The planning and growth of a small town community is just like that of a family."



"The planning and growth of a small town community is just like that of a family. What you nurture from the very beginning

of its conception and continue to nurture has a direct result on its presence to the world. People and things that are close to the family and hold it dear to their heart will inevitably look out for its best interests. So, too, with town planning. Success is achieved with knowing and respecting the environment, the needs of the people, and the purpose of preparing a healthy future."

GEORGE RIXEY

Past President of the American Institute of Architects Maui, Past President of the Kihei Community Association



Olowalu Talk Story started with a "blank slate." All design occurred in sessions open to the public where participants were encouraged to review and comment. The plans were continuously updated and modified based on participant's feedback.



Olowalu Town: A Traditional Maui Community



Conceptual plans for Olowalu Town reflect the reestablishment of a community at Olowalu where Maui's residents can afford to live.

Housing will be provided in many forms including affordable, senior, apartments, below market, single family, multi-family, and live/work opportunities.

Stores, schools, parks, beaches, and community services will be integrated within walking distance of homes. Town centers will provide business and commercial opportunities for residents to live and work in the same community.

These plans are being developed based on the information gathered in the Olowalu Talk Story Community-based Planning Event and community input over the past 18 months.

The conceptual drawings and charts provide more detail about living in this community. We look forward to finalizing these plans based upon continued dialogue with the public.

"Olowalu reminds me of the small towns that I knew as a youngster growing up on Maui."



"How Maui will grow to meet the housing needs of our working families is an important question facing us. Olowalu

town answers that question by proposing to build a true community with a mix of housing, beach access and with planning for local neighborhood businesses, schools, and community facilities. Olowalu reminds me of the small towns that I knew as a youngster growing up on Maui."

BILL KAMAI
Senior Service Representative,
Hawaii Carpenters Union, Maui Office

Financial Feasibility

The Olowalu Town Project will need to be financially feasible in order to become reality. Under current conceptual plans, Olowalu Town will provide roughly:

- 500 affordable housing units (less than 120% median income)
- 500 sub-market housing units (below existing average market prices)
- 500 market rate housing units (above average market prices)

As designed, this plan would meet or exceed Maui's existing Workforce Housing Ordinance. As proposed, the market rate housing units will help to finance the affordable housing units and the costly infrastructure improvements.

Large shoreline parks and coastal views for community enjoyment. Neighborhood town square. Relocate and construct a bypass highway with three innovative "O-turns."



Homes in Olowalu Town

Olowalu will offer a wide range of housing for all ages and income levels — young singles, families, service workers, working farmers, entrepreneurs, and retirees. From single-family lots to live/work units, Olowalu homes will be dignified and close to the town center, parks, and beaches.

A. Rural Residential

Single-family homes on minimum one-half acre lot with rural character.

B. Urban Residential

Single-family homes on smaller lots, closer to neighborhood town centers.

C. Urban Live/Work Units

Residential living space above, small family business or commercial use on street level.

D. Urban Town Houses

Multi-Family units create higher density located near neighborhood town centers.

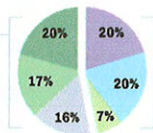




Olowalu Town Land Use Breakdown

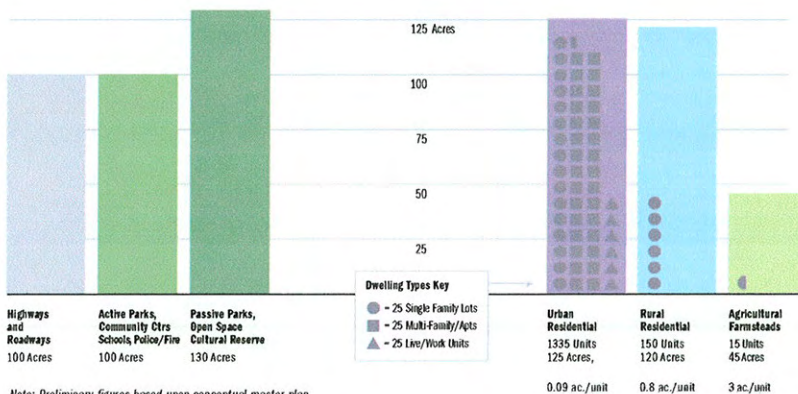
Parks, Open Space & Community Space: 53%

- Passive Parks, Open Space, Cultural Reserve: 20%
- Active Parks, Community Center, Schools, Police/Fire: 17%
- Highway and Roadway Corridors: 16%



Residential Land Use: 47%

- Urban Residential and Commercial Business: 20%
- Rural Residential: 20%
- Agricultural Farmsteads: 7%



Note: Preliminary figures based upon conceptual master plan.

Olowalu Acreage

Olowalu Town	620 acres
Parks, Open Space and Community Space	330 acres
Residential Use	290 acres

Passive Parks and Open Space

- Streamside Park
- Pocket Parks
- Cultural Preserve
- Archaeological Sites
- Neighborhood Parks

Active Parks/Community Services

- Coastal Parks
- Schools
- Community Centers
- Police / Fire Facilities

Roadway Corridors

- Tree-Lined Roadway
- Alleys
- Greenways
- Bikeways
- Relocated Highway
- Trails
- Streets

Number of Units by Type

Single Family Lots	565
Multi-Family / Apartments	785
Live/Work Units	150

Commercial Business Space

- 26,000 sf in the Town Centers for:
- Surf Shops
 - Doctors
 - Cafés
 - Restaurants
 - Dentists
 - Book Store
 - Markets
 - Video Stores
 - Hardware Store
 - Drug Stores
 - Bakeries
 - Bar



“Bill and Dave did a beautiful job working and talking with us. I’ve seen what the community came up with and it is a good project.”

– KATHERINE D. KING - Born and Raised In Olowalu

Sustainable Infrastructure



Learn from our natural resources, use the best available technologies, and build independent infrastructure.

Respect Our Natural Resources

Olowalu Town will build innovative infrastructure systems that are based upon sustainable technologies which minimize adverse impacts upon the natural environment. Efficient “green” technologies modeled from natural systems are planned at Olowalu Town with emphasis on conservation, cleaning, and recycling. Compact decentralized infrastructure systems are both economically and environmentally friendly. These systems create a smaller, less intensive “ecological footprint” than larger centralized systems.

Healthy Communities

Olowalu Town’s residents will utilize walking for many daily needs thus reducing the number of daily car trips. Not only will residents reduce their reliance on imported gasoline and cut down on vehicle emissions, Olowalu Town will provide residents access to beach parks, playgrounds, hiking, and biking from their homes. Walkable communities also increase interaction with neighbors and lead to physically and socially healthy communities.

Independent Infrastructure

Olowalu Town will be supported by privately funded, independent infrastructure. The water, wastewater, and drainage systems will be sized appropriately to support the town’s needs. In many cases, these infrastructure systems will be decentralized which allows for less impact on the environment. Olowalu Town has also reserved sites for community services including educational, police, and fire facilities. The relocation of Honoapi’ilani Highway at Olowalu will be constructed in conjunction with the first phase of reestablishing the Olowalu Community.

Water and Wastewater

Through the use of Integrated Resource Planning, Olowalu’s Natural Resource Engineers carefully assessed and examined innovative alternatives for water, wastewater, and drainage systems.

Drinking Water

The drinking water (potable water) requirement to support Olowalu Town is roughly 600,000 gallons per day. The Olowalu aquifer’s sustainable yield is estimated at 3 million gallons per day. The Olowalu Town Plan is designed to utilize only 20% of the aquifer’s sustainable yield.

Wastewater

State-of-the-art wastewater treatment plants are relatively small and have little odor or other effect on the environment. These plants efficiently produce clean recycled water for irrigation use.

Irrigation Water

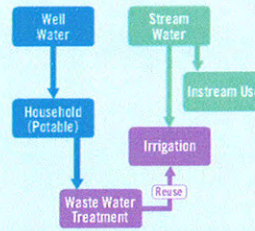
Irrigation water (non-potable water) will be provided by a combination of recycled wastewater, stream water and possibly captured storm water. Use of native plants will reduce overall irrigation water demands.

Stream Water Restoration

The integrated irrigation water system will provide opportunities to significantly reduce the amount of stream water currently being utilized for irrigation.

Drainage/Storm Water

Olowalu Town will use best management practices (BMPs) to design and build drainage systems that protect the health of residents and their homes, preserve and enhance the natural environment, and protect shoreline water quality. The BMP standards will protect the surrounding environment from soil erosion, sediment production, and other non-point source pollutants. Drainage systems will exceed government requirements to ensure protection of near-shore water quality.



Water Used Wisely The Olowalu water treatment plant will reclaim wastewater from households and make it reusable for irrigation keeping more stream water in Olowalu Stream.

Fewer Trips, Better Flow, Less Traffic

Instead of just planning streets for cars, Olowalu Town is designed to provide many modes of transportation for people including walking, biking, mass transit, and automobiles.

These different modes of transportation address movement within the neighborhood (circulation), between neighborhoods (connectivity), and to different parts of the island (regional transportation).

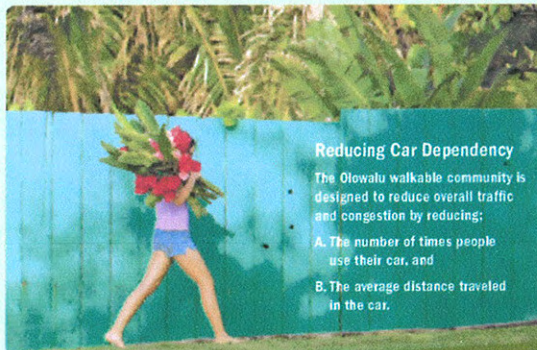
Connectivity

Olowalu Town is designed with interconnected streets that include trees and sidewalks that slow down automobiles and encourage walking and biking. This well-connected network of narrow streets provides better mobility and is safer and more efficient than poorly-connected network of wide streets. Olowalu Town’s neighborhood block system shortens travel routes and encourages alternatives to automobiles.

Planning for neighborhood stores, parks, community centers, and educational facilities within walking distance of neighborhoods will reduce the number of automobile vehicular trips and encourage the casual meeting of residents that form the bonds of a community.

Circulation

Internal roadway systems connecting Olowalu’s neighborhoods will provide additional ways to move people throughout



Reducing Car Dependency

The Olowalu walkable community is designed to reduce overall traffic and congestion by reducing:

- The number of times people use their car, and
- The average distance traveled in the car.

the community. The monkeypod-lined portion of the existing Honoapi’ilani Highway will be preserved and utilized as a lower volume connector road between the Olowalu neighborhoods. In the case of an emergency on Honoapi’ilani Highway, this thoroughfare could be used to route highway traffic through Olowalu. Bike and walking paths will also serve as another connection between neighborhoods and allow people easy access to beach parks, shops, and homes.

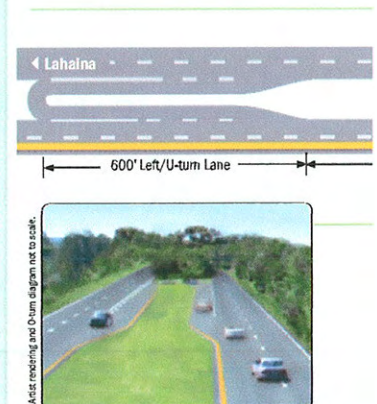
Regional Transportation

Olowalu Town will also greatly improve regional transportation. The construction

of the Olowalu portion of the relocated Honoapi’ilani Highway in conjunction with the first phase of Olowalu Town will greatly improve regional transportation to West Maui. Additionally, Olowalu Town residents will have safe and easy access to necessary regional transportation. The highway corridor is designed to conveniently accommodate mass transit alternatives when available. Olowalu transit stops have been designed to be within walking distance of the neighborhoods to increase personal travel choices and reduce reliance on the automobile.

Honoapi’ilani Highway

During the Olowalu Talk Story workshop, options to improve Honoapi’ilani Highway evolved from simply widening the existing road to considering various alternatives, including the ones shown at right. The alignment favored by workshop participants (far right) provided the best opportunity to serve a small town at Olowalu and to enhance the free flow of highway traffic.





Access to beaches, surfing, parks, and play areas.



Neighborhood parks provide "back yards" for children.



Series of interconnected greenways/bikeways for walking or biking.



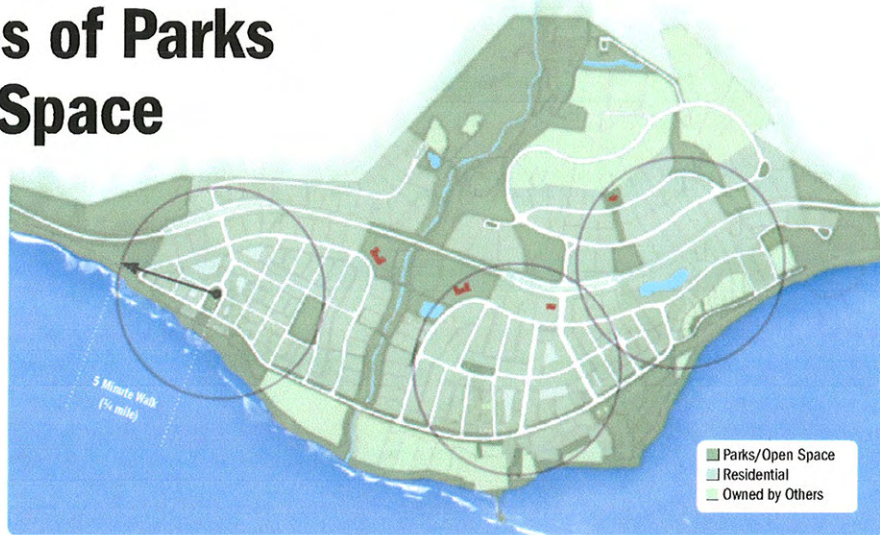
Places where residents can just hang out with friends, sit and relax.

200+ Acres of Parks and Open Space

The design of Olowalu Town includes over 200 acres of parks, beaches, greenways, ball fields, community gathering areas, and open space. Healthy and active communities help provide for the social, spiritual, and cultural needs of its residents, and enhance our quality of life.



Olowalu Cultural Reserve will be increased in size and enhanced with trail systems.



Homes are situated within easy walking distance to recreational facilities.



Easy access to civic, religious, and non-profit facilities.

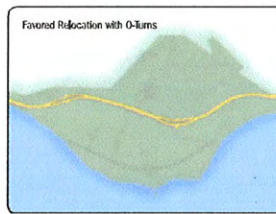
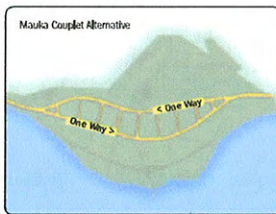
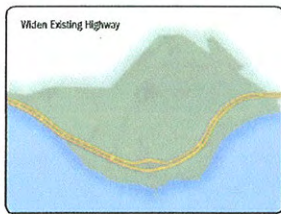


Preserve and enhance public access to shoreline resources.



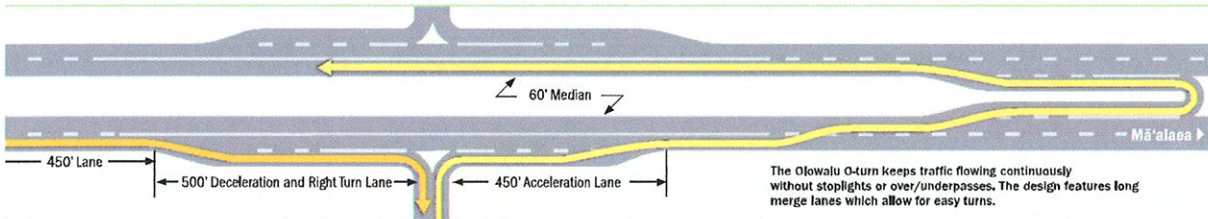
Camping facilities.

Relocation Process and The Innovative Olowalu O-Turn



Relocation Highlights

- Highway constructed in conjunction with first phase of development
- Three separate O-Turns provide access to town and disperse traffic and allow left turns without delays
- Medians designed to accommodate light rail or other mass transit system, as it becomes available
- Public access to larger beach parks between the relocated highway and the ocean



The Olowalu O-Turn keeps traffic flowing continuously without stoplights or over/underpasses. The design features long merge lanes which allow for easy turns.

How the O-Turn Works

The Olowalu Turn or O-Turn works by preventing drivers from making left turns across traffic. Drivers safely take a U-turn with the assist of merge lanes and enter into the flow of traffic going in the reverse direction. Then, by merging to the right lane, drivers may turn right and

reach their destination. Meetings with the Department of Transportation have been productive and they have been receptive to these innovative ideas.

No Stoplights, Continuous Flow

One of the problems with the existing flow of traffic through Olowalu is that cars making turns off the highway – especially

left-turns – invariably slow the overall flow of the traffic. Our mainland and local traffic engineers at the workshop introduced a new approach to Maui which we call the "O-Turn." It is an efficient solution that allows for easy and safe turns without interrupting the flow of traffic and is successfully being used in other states. Our traffic engineers

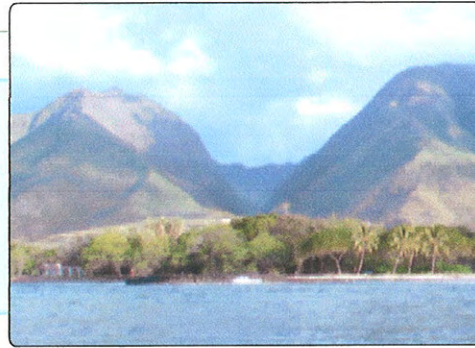
have designed it to accommodate the existing and future traffic volumes on Honoapiʻilani Highway.

O-Turn Benefits

- No stoplights
- No under/overpass
- Easy turns
- Long on/off lanes
- Continuous traffic flow

“One advantage that Maui has is the island still has a number of traditional towns. These small towns represent the model of sustainable communities that are compact, connected and complete.”

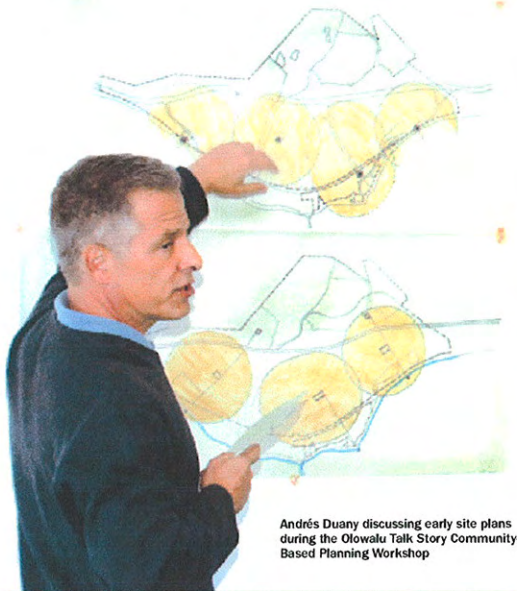
ANDRÉS DUANY *Lead Architect of Olowalu Town*



Olowalu's Urban Growth Boundaries combined with the natural land features create a combination of restrictions that will prevent Olowalu Town from sprawling into other communities.

A Message from Andrés Duany:

A Small Town for Maui



Andrés Duany discussing early site plans during the Olowalu Talk Story Community-Based Planning Workshop

Today, Maui has the opportunity to chart its own future and determine the manner and form of development that will occur on the island for many years to come.

The plan for Olowalu Town returns to the original Maui small town model of complete and compact communities, where most, if not all, daily needs can be met within a five-minute walk of one's home.

Until recently what has proliferated on Maui and in Hawai'i is the conventional suburban planning imported wholesale from the mainland. This development model comes with a number of disadvantages, penalties, and inconveniences, such as larger land consumption, segregated and isolated pockets of development, traffic congestion, pollution, and loss of open space, and public amenities.

Olowalu Town's layout, structures, density, and land use all contribute to create a compact, walkable environment. Olowalu will have a wide range of housing types, including townhouses,

apartments, bungalows, cottages and large houses on farmsteads, with a substantial portion given to much-needed affordable housing.

There will be live/work units to encourage people to start new businesses, which would help reduce the need to commute to work and create a wider, more diverse, economic base. Two town centers will feature facilities and amenities for the larger community, including retail and commercial spaces, civic buildings, and public open space.

The building of Olowalu Town will be guided and framed by a new design code. This new code marries traditional settlement patterns with sustainable ecological strategies, and is proposed to overlap and simplify the existing zoning code, with the creation of livable streets at a variety of densities, uses, and residential unit types.

Olowalu Town is the model for a new opportunity to re-build communities on the island of Maui.

Maui County's General Plan And The Future Of Maui

The Maui County General Plan is currently being updated. The 2030 General Plan will establish the overall vision that will guide the growth and development of Maui County for the next 20 years. One of the key components of the General Plan will include the establishment of Urban and Rural growth boundaries. Future growth and development within these identified Urban and Rural boundaries will be encouraged; growth in areas located outside of these boundaries will be discouraged. The 2030 General Plan will be comprehensive and address the social, economic, and physical environment through a community-driven process to collectively define values, goals, and objectives.

Long Range Effects

When ultimately adopted by the Maui County Council, the 2030 General Plan has the potential to

affect almost every decision we will make about where to live, work, send our children to school and prepare our families for a better life in the years ahead. We encourage you to stay informed and participate in this vital work.

Participate Now

You can send your ideas to the Long Range Planning Division online at www.generalplan2030@mauicounty.gov or by phone at 270-7333. All of the meetings relating to the development of the General Plan, including those of the current General Plan Advisory Committee (made up of 25 dedicated citizen-volunteers), the Planning Commission and the County Council are open to the public. The notice of meetings is published on the Maui County government website www.mauicounty.gov.

Talk To Maui's Long Range Planning Division
Phone: 270-7335 | Online: www.mauicounty.gov

Suburban Sprawl vs Traditional

Suburban Sprawl	General Characteristics	Traditional Neighborhood Design
<ul style="list-style-type: none"> Segregated land uses Congested roadways Continuous outward growth of communities Inefficient use of resources 	<ul style="list-style-type: none"> Mixed-use communities Pedestrian-friendly Wide range of housing for all income levels Environmentally sustainable 	
Traffic & Roadways		
<ul style="list-style-type: none"> Designed for cars and unsafe for pedestrians Congested connector roads High-speed streets, wide and open Dead end, cul-de-sacs 	<ul style="list-style-type: none"> Designed for people, not cars Multiple connected and parallel roadways Low-speed streets, lined with trees and sidewalks 	
Community		
<ul style="list-style-type: none"> Sprawling sub-urban developments Require car to get to services and schools Social and civic facilities an afterthought 	<ul style="list-style-type: none"> Multi-generational communities Walking distance to schools and parks Social and civic facilities planned within town 	
Land Use		
<ul style="list-style-type: none"> Sprawling suburbs and isolated land use No sense of community Reduced open-space and uncontrollable growth 	<ul style="list-style-type: none"> Smaller neighborhoods and efficient land use Distinct sense of place Open-space and urban boundaries 	
Infrastructure		
<ul style="list-style-type: none"> Large, expensive infrastructure systems Extensive transmission lines 	<ul style="list-style-type: none"> Efficient, small-scale infrastructure systems Fewer transmission lines 	
Environmental Resources		
<ul style="list-style-type: none"> Low-density developments pave over open-space Large development footprint Many car trips required per day 	<ul style="list-style-type: none"> Clustered, higher-density communities Small urban footprint on environment Designed to encourage walking, reduce car trips 	



Growth Boundaries

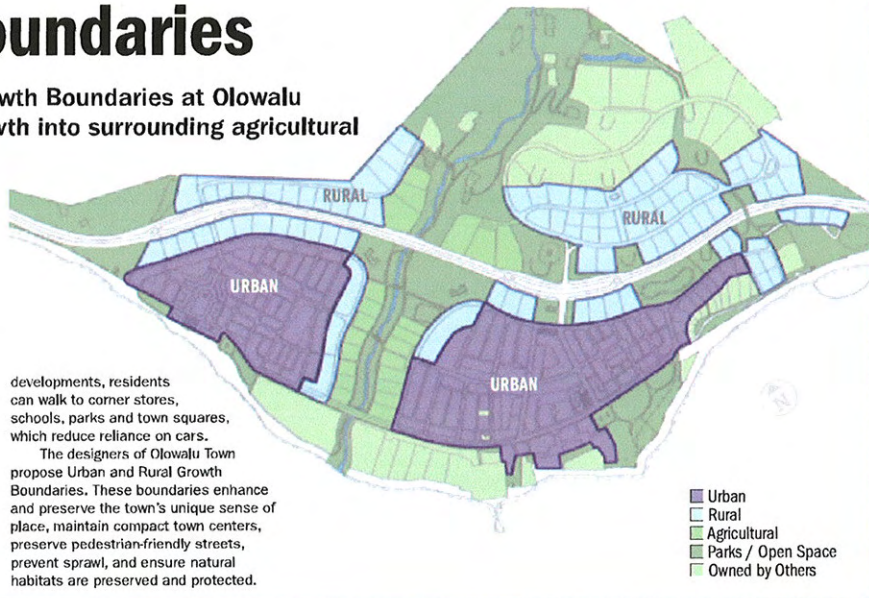
The Urban and Rural Growth Boundaries at Olowalu will prevent outward growth into surrounding agricultural and open space areas.

Once established, these growth boundaries will maintain Olowalu's small town scale, ensuring its continued sense of place.

Over the past 40 to 50 years our island's urban areas have grown and expanded outward, blending together and reducing farmland and open space.

In an effort to prevent this suburban sprawl, many communities across the country have begun to create Urban Growth Boundaries. An Urban Growth Boundary is a line drawn around an existing or proposed urban area beyond which urbanization cannot occur. Once established, growth must take place only within this area. Rural Growth Boundaries soften the transition from these urban areas to agricultural and natural areas.

Olowalu's Urban boundaries will encourage higher density mixed-use development resulting in increased land use efficiency. In mixed-use



Neighborhood Design (TND)

Suburban sprawl is the result of mainland "zoning" concepts that strictly separate uses and activities into single locations.

It is typically composed of subdivisions of homes without community services; local stores, parks and amenities.

As a result the automobile dominates the setting, thus requiring more and more roads that repeatedly fill up with traffic. This form of growth is a wasteful use of precious resources.

Principles of TND

The master plan for Olowalu Town is compatible with Maui's small town traditions and ensures that a meaningful and distinctive community is created.

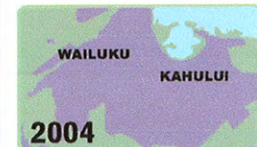
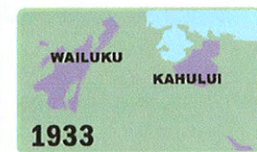
At Olowalu, we are committed to Traditional Neighborhood Design (TND). This innovative concept uses specific planning and design tools to guide the environment for existing and new communities, with the ultimate objective to build towns and communities that are pedestrian-friendly, comfortable, safe, and ecologically and economically sustainable.

Traditional Neighborhood Design Principles

- The basic increment or building block will be the mixed-use neighborhood ("pedestrian sheds"), and neighborhoods will be designed and sized to be walkable.
- Each mixed-use neighborhood shall have a discernible center to serve as a community gathering place. This center will also contain a transit stop.
- The neighborhood will be of small size and scale with a maximum standard of a 5-minute walk from the edge to the center. This distance averages one-quarter of a mile.
- Shops and stores within close proximity to neighborhoods will be sufficiently varied to satisfy ordinary daily household needs, such as a convenience store.
- The neighborhood shall incorporate a variety of places to work, including live-work units.
- Neighborhoods shall include a variety of dwelling types, such that younger and older persons, single households and families may be housed.
- Educational facilities shall be available, or a site reserved, within walking distance of most dwellings.
- Small playgrounds or neighborhood parks will be situated within one-eighth of a mile to all dwellings, not more than a 2- to 3-minute walk.
- Thoroughfares and roadways shall be designed as a network, with emphasis on connecting adjacent thoroughfares wherever possible to provide drivers with options to disperse traffic.
- Thoroughfares shall be designed to slow traffic, creating an environment appropriate for pedestrians, bicyclists, and automobiles.
- Building frontages shall collectively support pedestrian streetscapes, parking lots to be located behind buildings.
- Sensitive natural resources and cultural areas are preserved as permanent open-space.
- Exceptional sites or special locations to be reserved for community uses or civic buildings.
- Buildings for meetings, education, religion, or culture will be located at the termination of street vistas or within the Neighborhood centers.
- Youth and seniors benefit because walkable neighborhoods are not dependent on automobile transportation.

The Value of Boundaries as a Design Tool

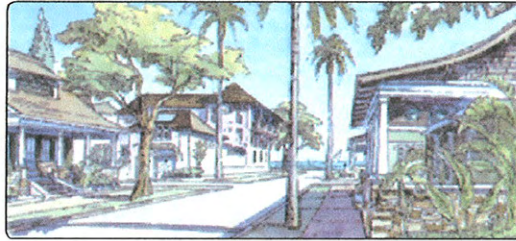
Kahului and Wailuku used to be compact and complete communities separated by agricultural and open space. With the establishment of zoning and subdivision laws in the 1950's, these communities began to merge together. At Olowalu, Urban and Rural Growth Boundaries are designed to maintain its small town scale.



Source: Maui County Planning Department

Olowalu Town Community Benefits

Our goal for Olowalu Town is to reestablish a small town community that reflects the vision, values and goals of Maui's citizens and families.



1. A community where Maui's families can afford to live
2. A mixed-use community with homes close to parks, schools, corner stores, beaches, community centers, town centers, etc.
3. A wide range of housing types for all ages and all income levels
4. Plans include the construction of bypass highway through Olowalu, in conjunction with first phase
5. Over 200 acres of parks and open space (1/3 of the project) including preservation and enhancement of public shoreline access
6. Infrastructure systems at no cost to the County
7. Neighborhood town centers to provide community with economic sustainability, employment opportunities, and local business opportunities
8. Innovative infrastructure systems designed to have minimal adverse impacts upon the environmental resources
9. Exceed government regulations for drainage and storm water runoff to protect shoreline ecosystems
10. Innovative "O-Turn" on bypass highway allows cars to flow without stopping with no street lights or over/under passes

11. New bypass highway designed to accommodate light rail or mass transit
12. Existing Olowalu Cultural Reserve along stream expanded and enhanced to include mauka and makai trail system with educational/interpretive program
13. Walkable town reduces the number and length of automobile trips, reduces traffic congestion, conserves fuel/energy, and lowers emissions
14. Design team and architects certified by U.S. Green Building Council for Leadership in Energy Efficiency Design (LEED)

This project is planned to be a LEED-certified Neighborhood Development. The LEED for Neighborhood Development Rating System integrates the principles of smart growth, new urbanism, and green building. Certification provides independent, third party verification that the development's location and design meet accepted high standards for environmental responsibility and sustainable development. You can learn more at www.usgbc.org

Continued Suggestions Improve Town Plan

We would like to thank the following groups, associations, and community leaders listed below for helping to improve our plans for Olowalu Town.

Over the past 18 months they have provided us with opportunities to share our plans with them.

Please note that those listed below have not provided us with official endorsements or approvals; rather, they have kindly provided us with valuable feedback and suggestions on how to improve our plans.

- American Institute of Architects
- County Department of Transportation
- County Mayor and Administration
- County Planning Department
- County Public Works Department and Environmental Management
- Filipino Centennial Chair
- Governor's Office
- Hawai'i Carpenter's Union Reps.
- Island Of the Worlds Conference on Sustainability
- Kahului Rotary
- Kihel-Wailea Rotary
- Lahaina Rotary
- Maui Chamber of Commerce - West Side
- Maui Coastal Land Trust
- Maui Contractor's Association
- Maui County Council Members
- Maui Economic Development Board
- Maui Economic Opportunity
- Maui Tomorrow Board of Directors
- Maui Young Business Round Table Leaders
- Maui Nui Housing Task Force First Time Home Buyers Conference
- Na Kupuna O Maui
- Office of Hawaiian Affairs
- Sierra Club Executive Committee
- State Association of Professional Engineers
- State Department of Transportation - Highways Division
- State Senators and House Members
- Tri-Isle Main Street Resource Center
- Wailuku Rotary
- Lahaina-Honolua Seniors Citizen Club
- West Maui Taxpayers Association
- West Maui Mountains Watershed Partnership

Planning and Construction Timeline



2005-2007

Community-Based Planning

Early Consultation with Key Groups/People
Olowalu Talk Story
Community Outreach
In-House Conceptual Review
General Plan Advisory Committee Recommendation for Urban Boundaries



2008-2012

Permitting and Entitlement Process

Early Consultation and Notice of Environmental Impact Statement
Development of Technical Studies for Environmental Impact Statement
Public Review of EIS
Government Approval Process for Land Use Entitlements
Final Approval of Governmental Land Use Entitlements and Permits



2013-2018

Infrastructure Design and Construction

Final Design of Infrastructure
Construction of Initial Infrastructure Improvements including: Phase 1 Water Improvements, Decentralized Wastewater Treatment, Drainage Systems
Construction of relocated Honoapiʻilani Highway at Olowalu
Occupancy of First New Residents at Olowalu



2019-2028

First Neighborhood Construction Phase

Residents live and work in Olowalu's first neighborhood center
Neighborhood stores, parks, educational facilities within walking distance
Affordable, rental, senior, single-family, multi-family, apartment housing options



2029-2038

Second Neighborhood Construction Phase

Residents live and work around Olowalu's second neighborhood center
Additional infrastructure improvements
Expansion of civic, social and community services

The First Steps of a Long Journey

We are currently completing the first steps of a long journey. The Olowalu Town project will be entitled and constructed over the next 25 to 30 years.

Community-based Planning phase.

Highlights of this phase include:

- Olowalu Talk Story: 1,350 participants openly exchanged ideas with our design team during a weeklong event to help create the Conceptual Master Plan for Olowalu Town.
- Feedback: Presentations of plans have been made over past 18 months to various groups, associations, and community leaders. The purpose of these meetings was not to seek any endorsements or approvals, rather, the purpose was to seek suggestions on how to improve the plan.
- GPAC Process: We have committed not to begin our Entitlement and Permitting Phase until the General Plan Advisory

Committee (GPAC) has reviewed and approved a Maui Island Plan.

Permitting and Entitlement: The next phase of the project is the Permitting and Entitlement Process which will include a request to change the existing land use designations from Agriculture to Project District (includes Urban and Rural Designations). Accordingly, this phase will involve a thorough public review and approval process, including:

- Preparation and Acceptance of an Environmental Impact Statement (EIS) Detailed and comprehensive review of project, technical studies, public meetings, and full disclosure of project's impacts upon natural and human environment.
- Land Use Entitlements Review and approval by the State Land Use Commission, the County Council, and Maui Planning Commission, with many public hearings and meetings.

Infrastructure Design and Construction: Once entitled, the project will begin infrastructure design and construction

including the new mauka Honoapiʻilani Highway at Olowalu, internal roadways, parks/greenways, and water and wastewater systems. Ultimately, this phase will include families moving into a range of affordable, below market, and market homes.

Future Neighborhood Construction: With initial infrastructure in place, neighborhoods will begin to be established. Future construction of the project will include additional homes, business/commercial establishments, neighborhood town centers, additional infrastructure systems, space for civic/social services, and educational facilities.

Mahalo for taking time to read our paper. We hope that this report will provide you with helpful information that you can use as we continue our planning process for Olowalu Town.

Feedback: Your comments and feedback regarding Olowalu Town are welcome at our website at: www.Olowalu.net or by writing us at: Olowalu Town, 2073 Wells Street, Suite 101, Wailuku, Hawai'i 96793.

"It's a community where you can afford to live and raise a family."



I grew up in a small town where we knew our neighbors, we looked out for each other, and we could safely walk or ride our

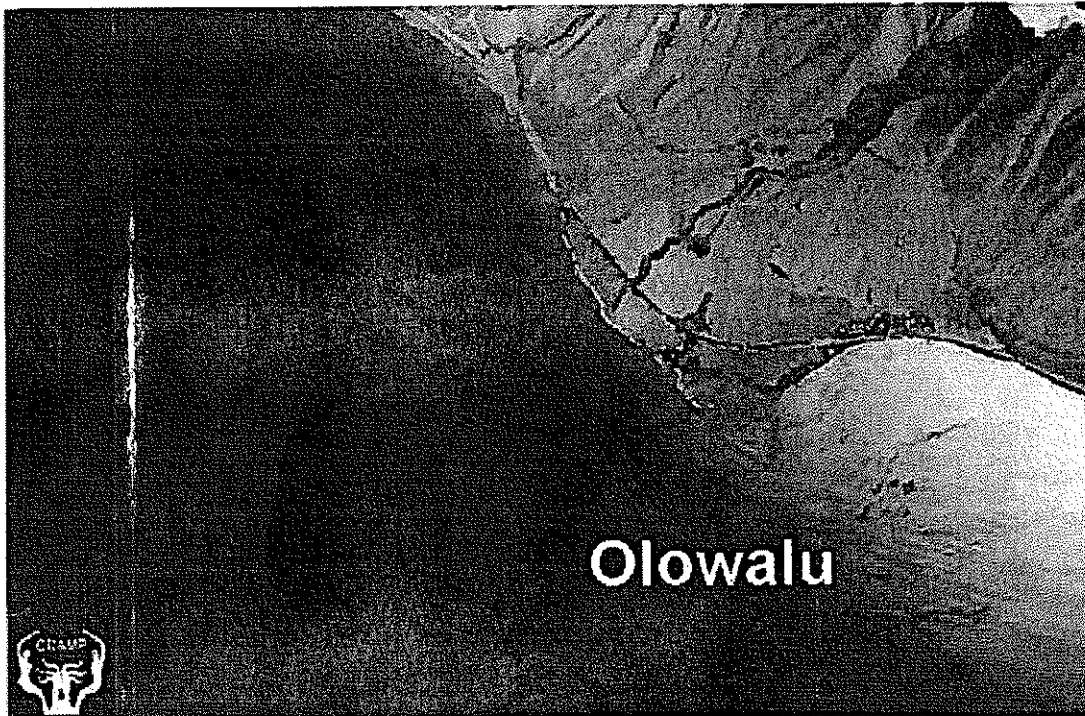
bikes to the store, school, or church. Our pace of life was not so hectic; the quality of life on Maui was good. I know that Bill and Dave are concerned about the changes to our island, especially about the changes to our small towns and communities. Olowalu Town is designed to be a small town like the one I grew up in, a community where you can afford to live and raise a family.

— JON SANTOS
Raised in Haiku

APPENDIX C.

A Baseline Study on Sediment Loading, Water Quality, and Selected Marine Life in Nearshore Waters of Olowalu, Maui

A baseline study on sediment loading, water quality, and selected
marine life in nearshore waters of Olowalu, Maui



Prepared for:
Ed Lindsey
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Prepared by:
Hawaii Wildlife Fund
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February, 2003

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575-2046

A baseline study on sediment loading, water quality and selected
marine life in nearshore waters of Olowalu, Maui: January 2001 -
November 2002

February 5, 2003

Prepared for Ed Lindsey by:

Hawaii Wildlife Fund:

Hodges¹, A.H., Brown², E.K., Brown³, D., Bernard⁴, H., and Harris⁴, A.

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Abstract

Sediment Dynamics and Water Quality at Hekili Point, Maui

INTRODUCTION

Due to past agricultural practices and coastal development, West Maui has experienced coral reef degradation and nuisance algae blooms (Hawaii Wildlife Fund 1999). Increased sediment input along tropical coastlines is one major cause of anthropogenic damage to coral reefs worldwide (Brown and Howard 1985; McManus 1988; Rogers 1990). Sediments can smother corals and reduce light transmission through the water column, inhibiting photosynthesis in coral tissue (Rogers 1990). It has been suggested that chronic sediment loading rates exceeding $10 \text{ mg cm}^{-2} \text{ day}^{-1}$ are detrimental to reefs (Pastorok and Bilyard 1985; Rogers 1977, 1990).

There is a natural balance between algal and coral growth in healthy coral reef environments (Brown et al. 2002). Terrestrial run-off can contain high levels of nutrients, such as nitrogen and phosphorus, which can promote algal growth. Algae can grow faster than corals, allowing it to overgrow surrounding corals and eventually kill them. This shift in the benthic community can also affect the amount and type of fish inhabiting the reef.

Such changes can adversely affect the continued value of reefs for recreation, fishing, scientific research, conservation, and educational activities (Brown et al. 2002). It is therefore important to establish the existing reef health of our nearshore waters, so future changes can be documented and quantified. The analysis in this study will help give researchers, developers, and the West Maui community a baseline view of reef health at Olowalu, West Maui, Hawaii.

METHODS

Study Site

Sediments

Sediment traps were placed on the reef to estimate the quantity and type of sediment that corals were exposed to on a daily and seasonal basis. These traps were critically validated in both laboratory and field studies (Gardner, 1980a, 1980b). Each sediment trap was constructed from a plastic garden tray (46cm X 46cm) and 3 PVC pipes (5.1cm diameter X 15.2cm height) with endcaps on the bottom. The pipes were oriented vertically through the inverted tray bottom and spaced 15cm from each other in a linear array to sample independently of each other (Gardner, 1980). The tray was weighted with 2 bricks on each corner and attached to the bottom using 2-3 cable ties in order to restrict movement and reduce vandalism. Two trays were deployed at the study site.

Total Sediment Loading

Samples from the traps were retrieved, filtered, dried and weighed to determine quantity of sediment collected in $\text{mg cm}^{-2} \text{ day}^{-1}$. Samples were collected and analyzed every month from December 2001 to July 2002.

Grain Size Analysis

Trap samples and Grab samples – additional sediment samples obtained by scooping sediment adjacent to the trap into Ziploc containers – were analyzed to determine the size of particles corals were exposed to. This grain size analysis was conducted using the following categories (sieve size); gravel (4mm), fine gravel (2mm), extra coarse sand (500 μm), coarse sand (250 μm), sand (125 μm),

fine sand (63 μ m), and silt (<63 μ m). Values in each category are represented as a percentage of the total sample.

Carbonate Fraction

Carbonate fraction analysis was also performed on the sediment samples to quantify the percentage of marine vs. terrestrial sediments present. Subsamples of whole sediment samples were placed in a large hard plastic container and digested with muriatic acid. After all of the calcium carbonate had disintegrated (approximately 4 hours), the solution was poured gently through a pre-weighed, pre-labeled filter paper. Once the sample dried, it was weighed and the percentage of the total sediment sample was calculated.

Water quality

Water quality parameters were measured at 8 stations during dry and storm periods. Dissolved oxygen (ppm), salinity (ppt), temperature ($^{\circ}$ C), and conductivity (ms) were measured using an YSI Meter. Measurements were obtained by dangling the probe in the water approximately 1-2 feet below the surface. Turbidity (NTU) was measured using a LaMotte turbidity meter Model 2008. Samples for turbidity were taken approximately 1-2 feet below the surface using a plastic bottle and transferred to the glass bottle used for measurements in the LaMotte meter. Nutrient levels for total nitrogen (TN), nitrate+nitrite (NO₃+NO₂), ammonia (NH₄), and total phosphorus (TP) were collected and analyzed by Aecos, Inc. Surface samples were also analyzed for Total Petroleum Hydrocarbons (TPH) by Aecos, Inc. These samples were collected 1-2 feet below the surface using bottles sent by Aecos, Inc. and shipped in a chilled container to Honolulu for analysis.

RESULTS

General Characteristics

Sediments

Total Sediment Loading

Grain Size Analysis

Carbonate Fraction

Water quality

DISCUSSION

Sediments

Total Sediment Loading

Grain Size Analysis

Carbonate Fraction

Water quality

-currents

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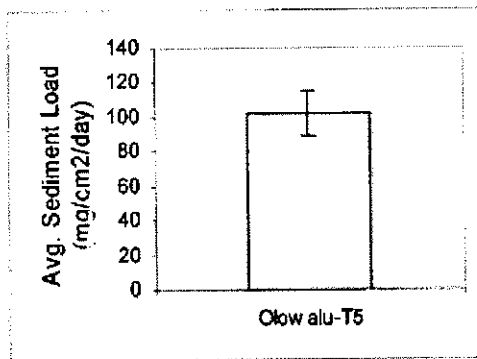


Figure 1. Average Sediment Load at Olowalu. Sediment load calculated from 6 traps on 8 separate collection dates. Error bar represent one standard error.

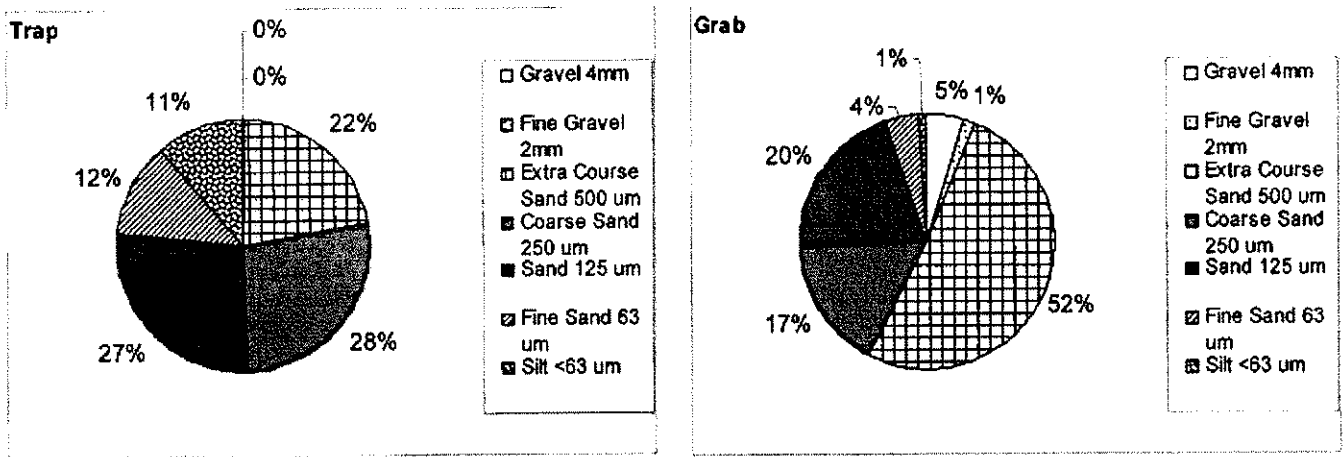
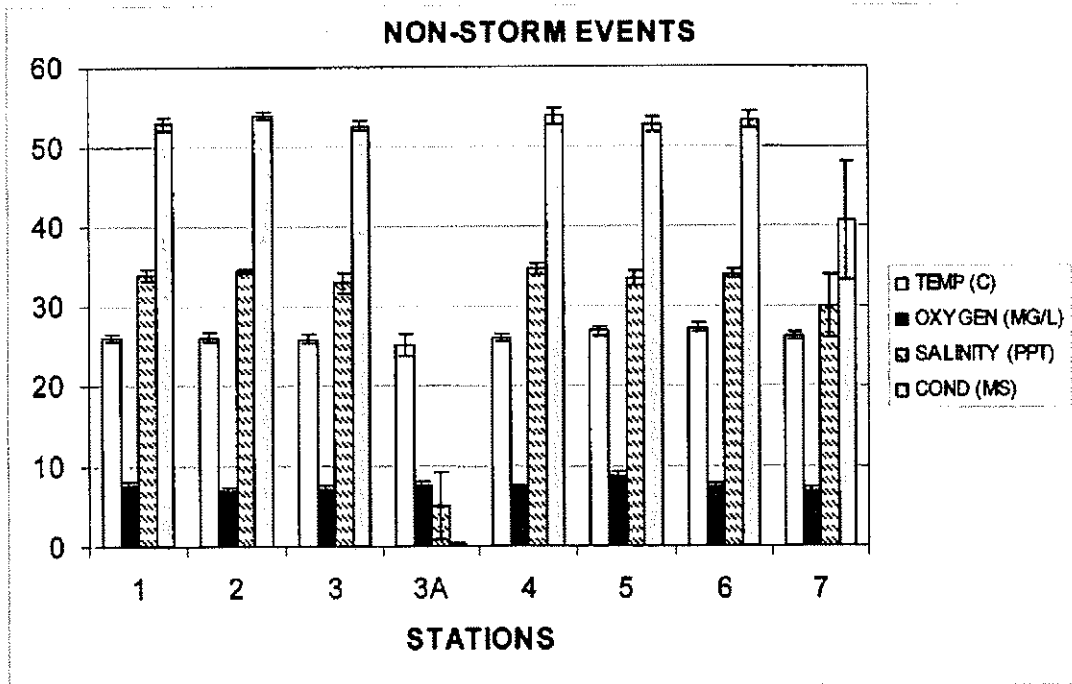


Figure 2. Percent grain size of sediments found at Olowalu. The graphs represent 4 separate collection dates for the trap samples and 1 for the grab samples.



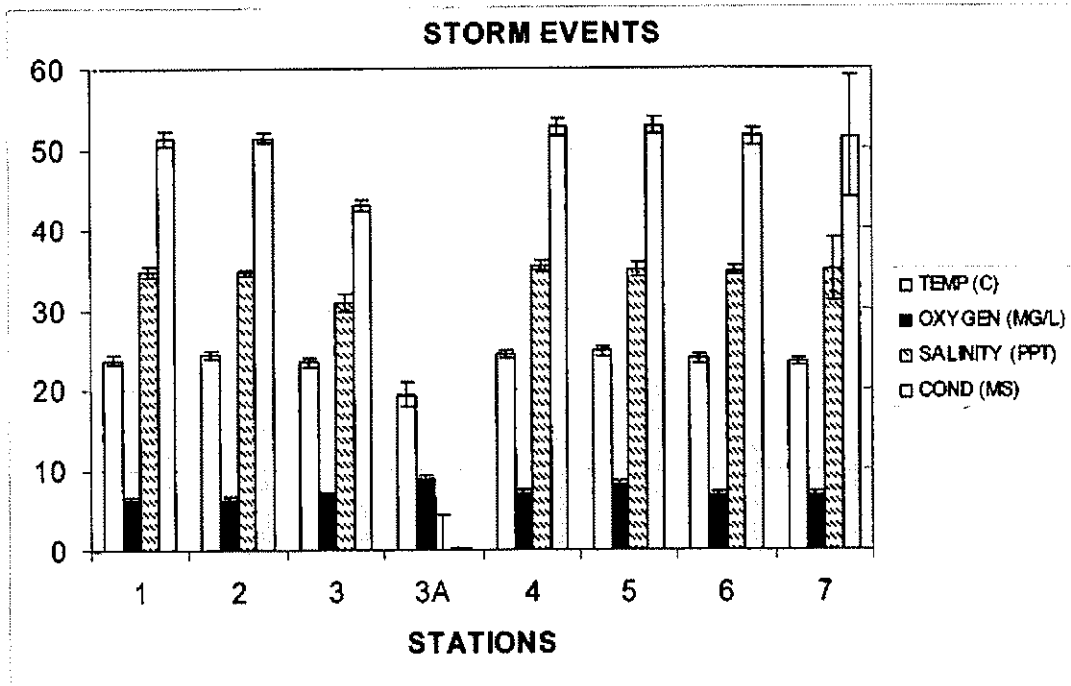


Figure 3. Water Quality Parameters for Oluwalu During Ambient and Storm Conditions. Parameters were measured during 8 sampling events for non-storm events and during 2 sampling events for storm events. Error bars represent one standard error.

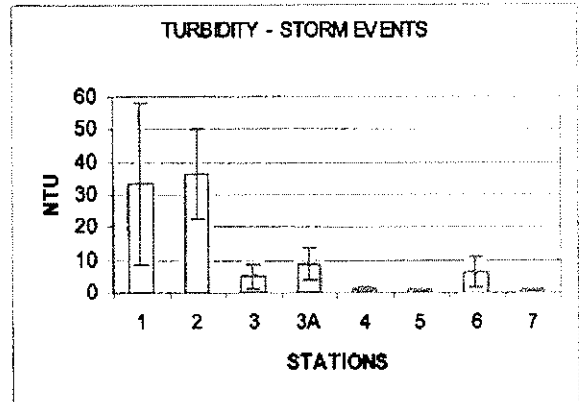
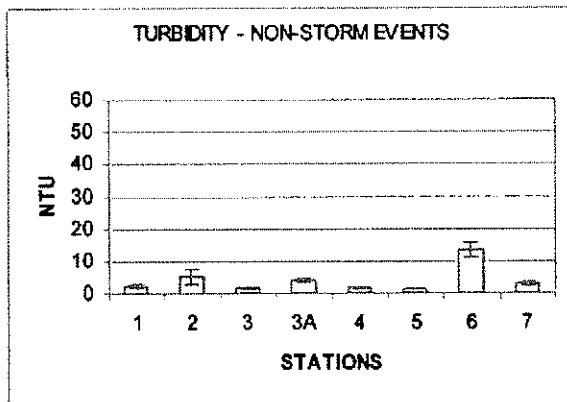


Figure 4. Turbidity during Normal and Storm Conditions. Turbidity was measured during 9 sampling events for non-storm conditions and during 2 events for storm conditions. Error bars represent one standard error.

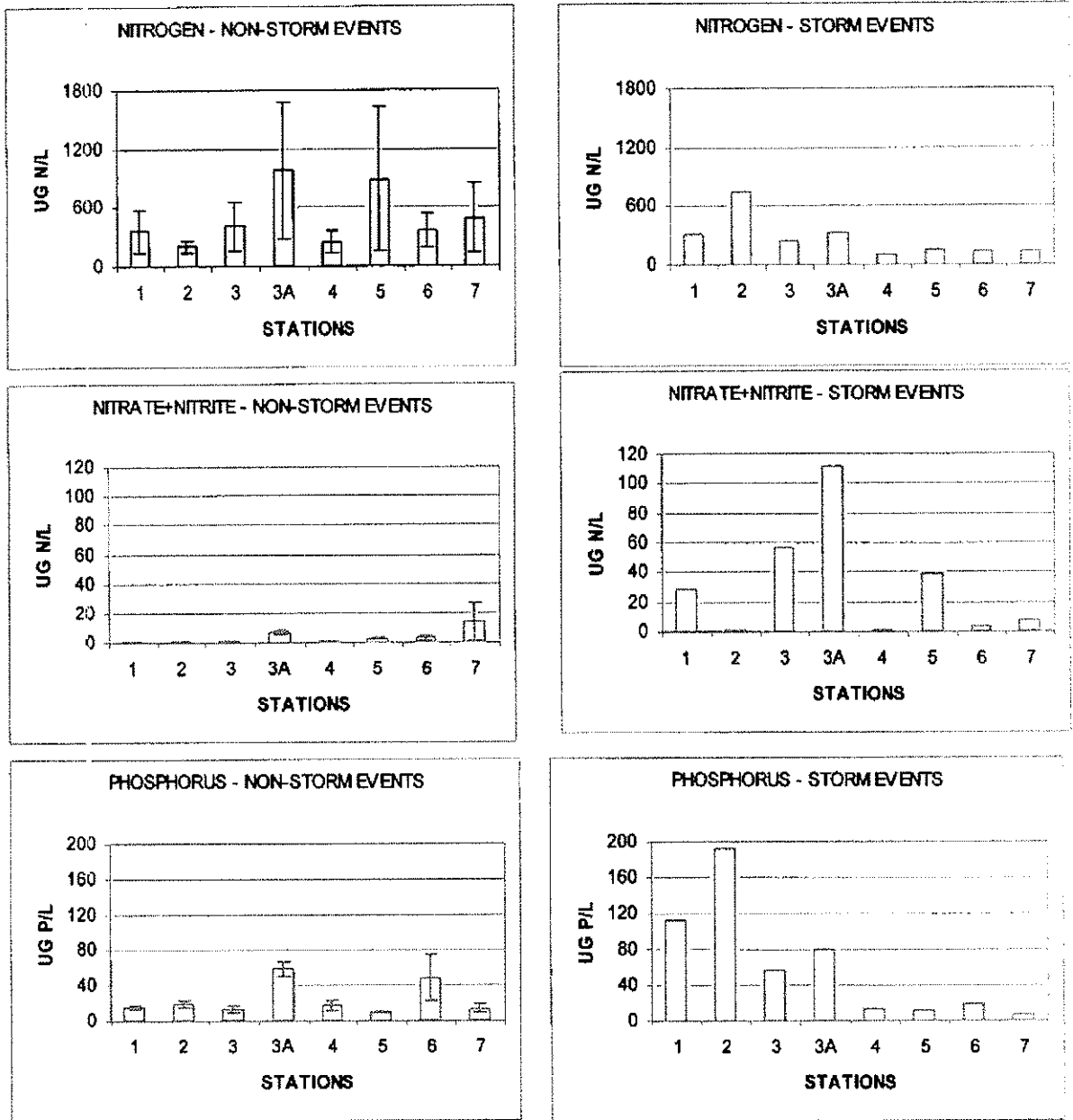


Figure 5. Total Nitrogen, Nitrate+Nitrite, and Total Phosphorus Levels during Ambient and Storm Conditions. Levels were measured during 3 sampling events for non-storm conditions and during 1 event for storm conditions. Error bars represent one standard error.

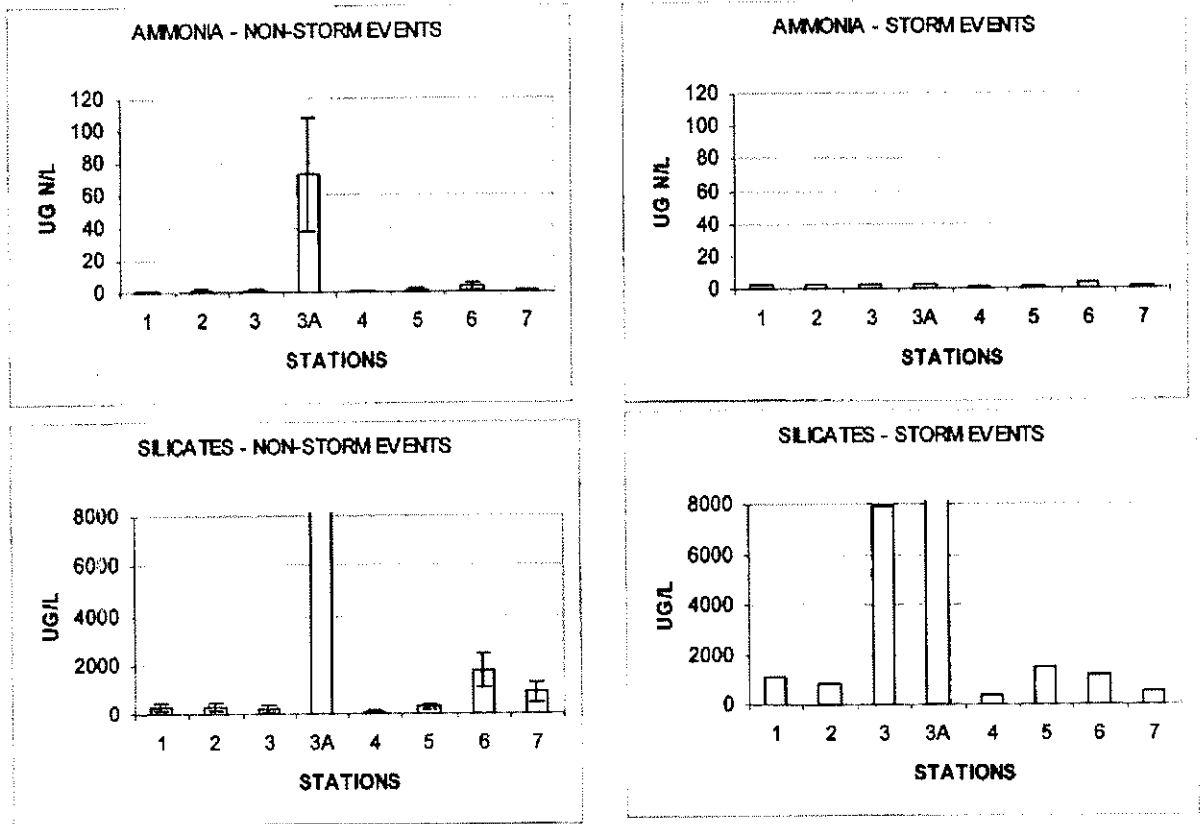


Figure 6. Ammonia and Silicate Levels during Ambient and Storm Conditions Levels were measured during 3 sampling events for non-storm conditions and during 1 event for storm conditions. Error bars represent one standard error.

Coral Communities at Hekili Point, Maui

INTRODUCTION

In Hawai'i, coral reefs are subjected to a variety of natural and anthropogenic stresses at several spatial and temporal scales (Grigg and Dollar 1990). The intensity and duration of these factors can both directly and indirectly alter the physical and biological structure of the reef (Connell et al. 1997). Natural factors, such as acute wave disturbances (Dollar and Tribble 1993), freshwater inputs (Jokiel et al. 1993), and predator outbreaks (Done 1992) can affect the shallow water reef communities at small spatial and temporal scales. Chronic disturbances, such as nonpoint source pollution and nearshore development, are more difficult to detect because changes to the community landscape are subtle and occur over longer time periods (Pastorok and Bilyard 1985). Quantifying different types of disturbance and the processes that influence coral community structure is only beginning to be understood (Edmunds 2000).

Disturbances can lead to a deteriorating or "unhealthy" coral population if recovery of the community does not occur or the community is replaced by another perceived to be less desirable. DeVantier et al. (1998) defined a "high quality" or "healthy" reef as one with high diversity of corals and associated biota and a strong reef-building capacity. The reef-building capacity is usually represented by high species richness and high absolute percent cover of hard corals (DeVantier et al. 1998). Szmant (1996) has incorporated temporal changes in her definition by stating that shifts from reefs dominated by corals to areas dominated by macroalgae signal the decline of a reef from a healthy state to an unhealthy one. Unfortunately, these definitions tend to depict reefs as static, steady state systems without incorporating cyclical variations in coral cover, colony growth or recruitment. In addition, categorizing reefs as "healthy" based primarily on high coral cover ignores areas with low to moderate coral cover such as Hawaii that are perceived to be in good condition compared to other regions of the world (Wilkinson 2000). Long-term monitoring programs can clarify natural cycles present in the system over a few time scales and provide an overview of population trends in the reef community. In addition, long-term monitoring is necessary to understand the role of natural and anthropogenic processes on changes in assemblages (Hughes and Connell 1999).

The purpose of this report was to examine the reef communities adjacent to Olowalu stream and Hekili Point on Maui and establish baselines for the benthic assemblage structure. Changes in the reef community could then be evaluated within the context of the current reef community. Digital video transects were used to document percent cover of the various benthic components of the assemblage and provide an archive for future comparisons.

METHODS

Benthic cover data was collected at a back reef site neighboring Hekili Point on October 8, 2001 and at a fore reef site adjacent to Olowalu stream on November 6, 2002. The Hekili point site was set up in 1m of water. This site was approximately 750 meters from the Olowalu stream site which was established at a depth of 3m (Figure 1). The sites were surveyed using an abbreviated Hawaii Coral Reef Assessment and Monitoring Program (CRAMP) protocol, which utilized digital video to document coral cover by surveying five permanent (fixed)

transects (Brown et al. 2004). Each transect was 10m in length and videotaped from a perpendicular angle at a height of 0.5m above the substrate. The transects were initially selected at random from a pool of 50 possible starting points located in a 2m X 50m grid along the 3m depth contour. To assist in relocating the transect grid a central spine of 6 pins was installed at 10 meter intervals with GPS marks at the beginning and end. Total area sampled across the 5 transects was 17.5m².

Image analysis was conducted using Photogrid software on 15 randomly selected non-overlapping video frames per transect with 50 randomly selected points per frame. Percent cover was tabulated for coral (by species), macroinvertebrates, and other benthic substrate types (coralline algae, turf algae, macroalgae/ *Halimeda* spp., and sand). Total mean percent coral cover, mean percent coral cover by species, and species richness (number of species per transect) were used as dependent variables in this study. Average error (average observer error 1.9%, measurement error 2.7%) for estimating total coral cover using the digital video transects was estimated to be approximately 5% (Brown, 2004).

DATA ANALYSIS

Mean percent cover for benthic components at each site was calculated using transects as replicates (N=5) and the randomly selected frames as subsamples. The rationale for using the transect as the sampling unit rather than the multiple quadrats was that the quadrats were dependent on the placement of the transect line and therefore not independent of each other. Thus, individual quadrats did not have an equal probability of sampling any given sector of the site but instead were constrained by the transect.

Comparison with other benthic assemblages from the 64 CRAMP sites across the state was conducted using a Bray-Curtis similarity dendrogram in Primer 5.0 (Clarke and Gorley 2001, Clarke and Warwick 2001). Percent cover of coral species was arcsin-square root transformed and aggregated by site which was then plotted to reveal similarities/dissimilarities of faunal assemblages among all sites. Cluster analysis used group average to construct the dendrogram. Only coral species were used in the analysis because the CRAMP data set did not differentiate algal substrate types due to high observer variability (Brown 2004).

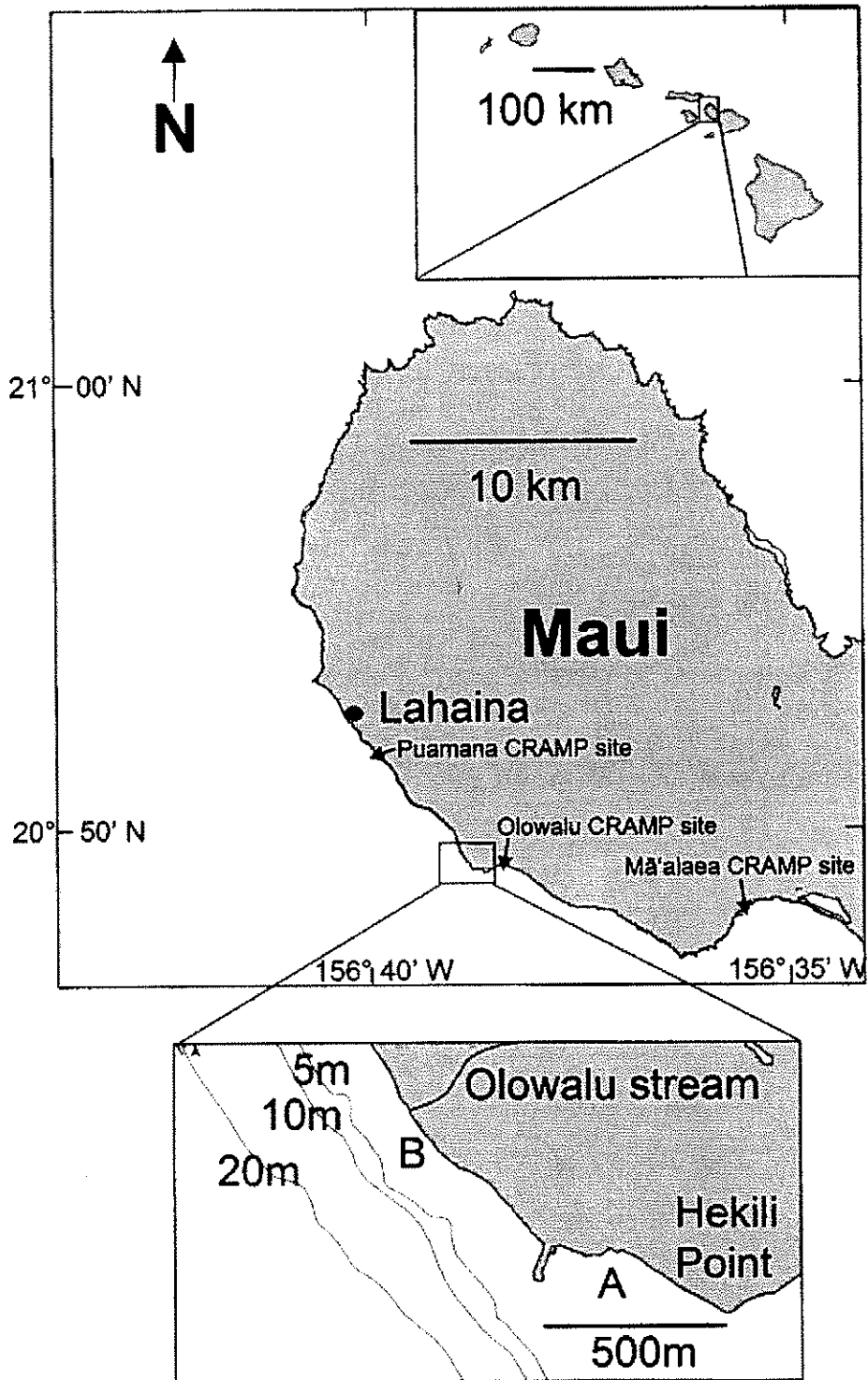


Figure 1. Map of West Maui showing the Hekili Point site (A) and the Olowalu stream site (B).

RESULTS

At the 1m Hekili Point site, turf algae was the most abundant substrate covering $67.0\% \pm 5.4\%$ SE of the benthos. Percent live coral was $16.8\% \pm 5.0\%$ SE followed by sand ($10.7\% \pm 0.9\%$ SE), macroalgae ($2.9\% \pm 0.9\%$ SE), coralline algae ($2.3\% \pm 0.9\%$ SE), and macro invertebrates ($<1\%$) (Figure 2). Six coral species were observed and *Porites lobata* was the most abundant with percent cover at $10.3\% \pm 4.0\%$ SE. Percent *Porites compressa* cover was $3.2\% \pm 0.8\%$ SE followed by *Montipora capitata* ($2.2\% \pm 0.6\%$ SE), *Porites evermanni* ($0.8\% \pm 0.8\%$ SE), *M. patula* ($0.3\% \pm 0.2\%$ SE), and *Pocillopora meandrina* ($0.03\% \pm 0.01\%$ SE).

Turf algae ($67.3\% \pm 2.9\%$ SE) was also the most abundant substrate at the 3m Olowalu stream site followed by live coral ($20.8\% \pm 2.8\%$ SE), coralline algae ($9.1\% \pm 0.7\%$ SE), sand ($1.4\% \pm 0.6\%$ SE), macroalgae ($1.0\% \pm 0.3\%$ SE), and macro invertebrates ($<1\%$) (Figure 3). A total of 9 coral species were documented on the transects with *Porites lobata* being the most abundant ($14.5\% \pm 3.4\%$ SE). *Pocillopora meandrina* was the next most abundant ($4.3\% \pm 0.8\%$ SE) followed by *Montipora patula* ($1.2\% \pm 0.2\%$ SE). The remaining 7 species covered an average of only 0.8% of the benthos.

In comparison to the other 64 CRAMP sites, the 1m Hekili Point site is most similar to the 1m Kanahena Bay site on Maui (Figure 4). Both sites are south facing and protected from wave exposure by either a reef crest (Hekili Point) or a sheltered embayment (Kanahena Bay). Total coral cover was lower at Kanahena Bay (11.5% vs. 16.8% at Hekili Point) but the ranking and relative proportions of the coral species generated a high similarity coefficient of 78% (Table 1). *Porites lobata* was the most abundant coral at both sites followed by *Montipora capitata*. *Pocillopora meandrina*, however, was more prevalent at Kanahena Bay compared to Hekili Point. Sites in close proximity such as the 3m Olowalu stream site and the two Olowalu CRAMP sites were quite different with lower similarity coefficients less than 60 (Table 1). This was primarily due to the lower percent coral cover, low species richness, and the lack of *P. meandrina* at Hekili Point.

The 3m Olowalu stream site is most similar to 3m sites on Hawaii (La'aloa-HaLaa03, Ka'apuna-HaKpn04, Laupāhoehoe-HaLau03), Maui (Puamana-MaPua03), and Oahu (Kahe Point-OaKpo03) (Figure 4). All of these sites except Laupāhoehoe on Hawaii are characterized by a southern wave exposure (Figure 4). The coral community at these other sites is also dominated by *Porites lobata* and *Pocillopora meandrina*, but the percentage of cover varies by species at each site (Table 2). La'aloa is the most similar site to Olowalu stream with 27% total coral cover and a similarity coefficient of 81%. La'aloa, however, has a higher percentage of *P. meandrina* relative to *P. lobata* than the Olowalu stream site. Of the sites grouped in close proximity on the plot, the Ka'apuna 3m site is the most dissimilar (64) with lower total coral cover (10.7%) and higher *P. meandrina* cover (6.8%) relative to *P. lobata* cover (3.2%).

Several sites in close proximity are intriguing due to their dissimilarity. The 3m Olowalu stream site which is the closest CRAMP site (1.6km) to the study reef is not very similar in terms of the coral assemblage (Table 1). The low similarity (54) is due primarily to the high percent cover of *Montipora capitata* (8.1%) and *Porites compressa* (3.5%). The Olowalu 7m site has higher total coral cover (50.9%) than the stream site which is attributed to the abundance of *Montipora patula* (14.1%) and *M. capitata* (19.5%) (Table 1). In contrast, the Mā'alaea 3m site is 12.4 km away but more similar (80.4) to the Olowalu stream

site than the Olowalu sites in terms of total coral cover (19.9%) and species coverage patterns (Table 1). The dendrogram plot, however, did not group the Mā'alaea 3m site near the Olowalu stream site (Figure 3). Reasons for this pattern are unclear, but might be attributed the low species richness at Mā'alaea.

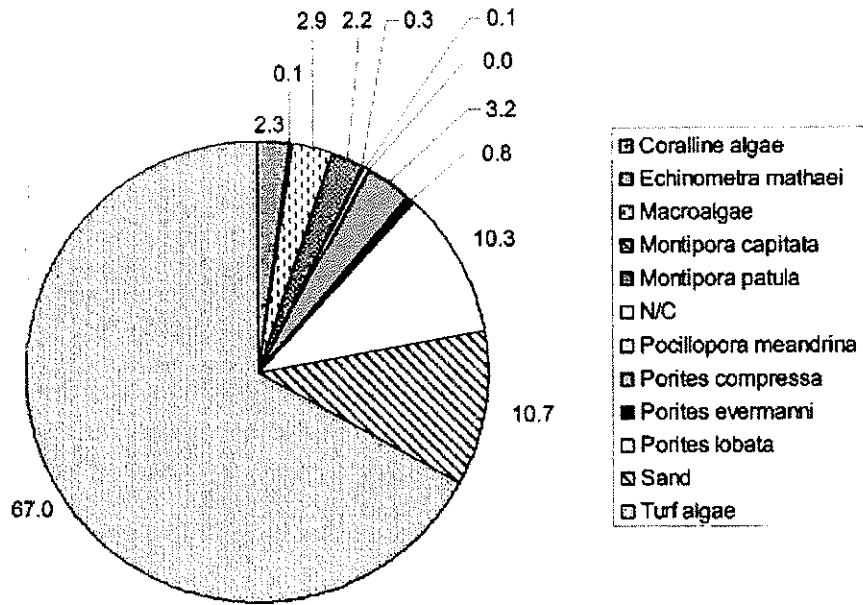


Figure 2. Mean percent coral cover at the 1m Hekili Point site surveyed on October 8th, 2001. N=5 transects.

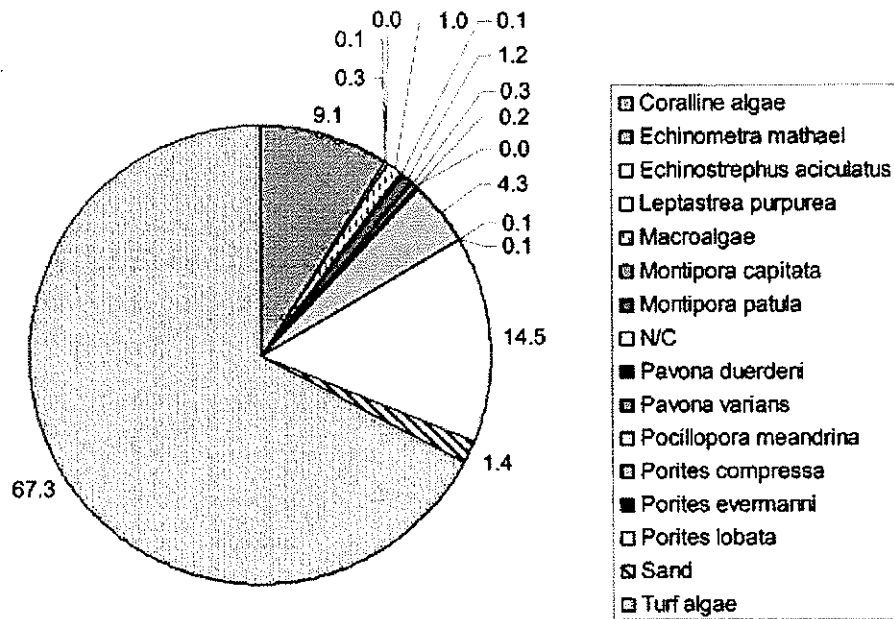


Figure 3. Mean percent coral cover at the 3m Olowalu stream site surveyed on November 6, 2002. N=5 transects.

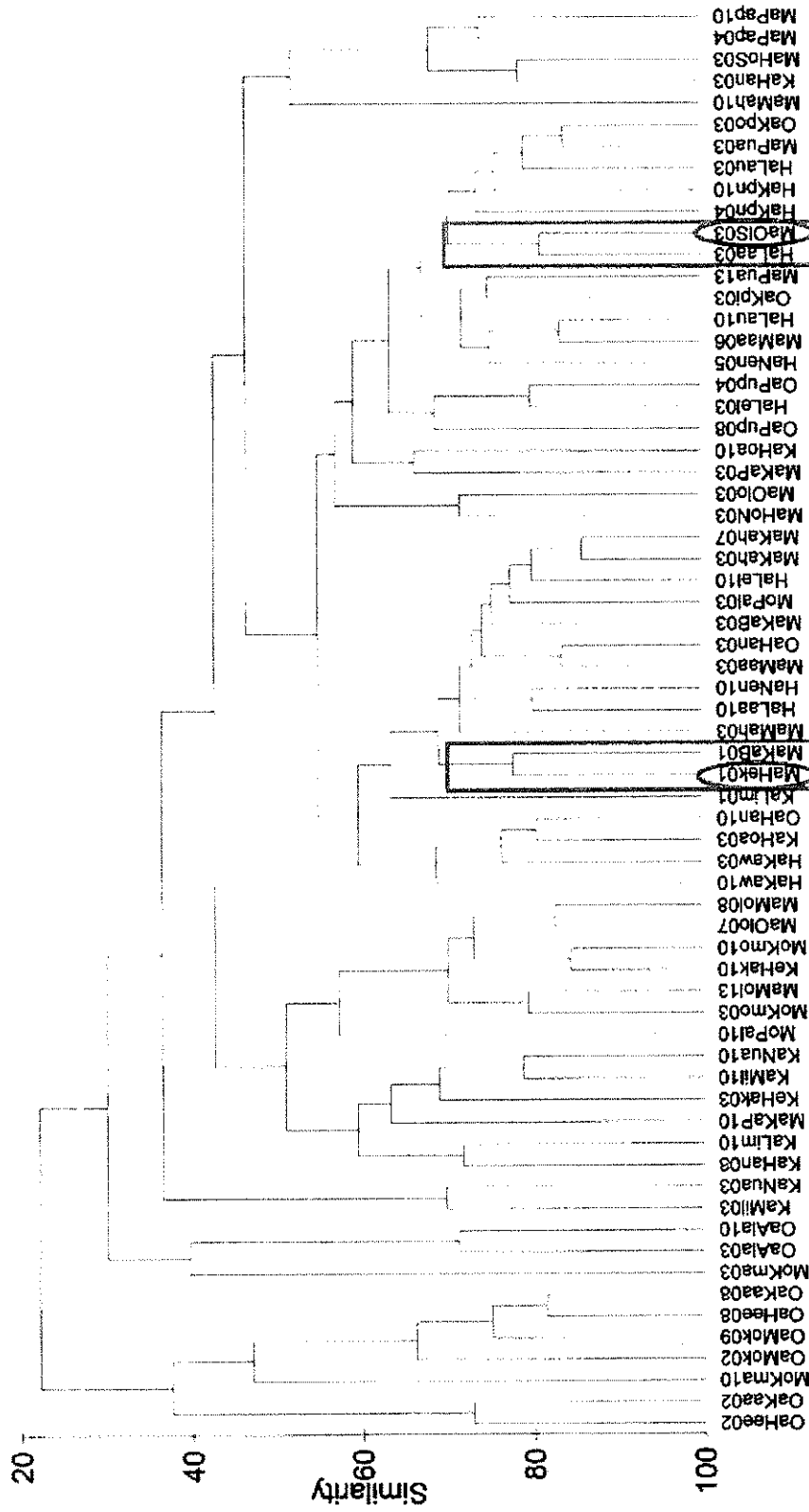


Figure 4: Bray-Curtis similarity dendrogram for coral assemblages at 66 sites around Hawaii. The 3m Olowalu stream site (MaOIS03) and the 1m Hekili Point site (MaHek01) are circled in red with similar sites outlined by the red rectangle. Sites are coded as follows (ISSSSDD) where II = island (Ka=Kauai, Oa=Oahu, Mo=Moloka'i, Ma=Maui, Ke=Kaho'olawe, Ha=Hawaii), SSS = site abbreviation (e.g. Hek= Hekili), and DD = depth in meters.

Table 1: Percent coral cover by species at the 1 m Hekili Point site compared to CRAMP sites with similar community assemblages (>75 similarity branch in dendrogram) or in close proximity (5km) to the study site. Species codes as follows; Coce=Cyphastrea ocellina, Lpur=Leptastrea purpurea, Mcap=Montipora capitata, Mpat=Montipora patula, Pbr1=Porites brighami, Pcom=Porites compressa, Pdam=Porites damicornis, Pdue=Pavona duerdeni, Pve=Porites evermanni, Plic=Porites lichen, Plob=Porites lobata, Pmal=Pavona maldivensis, Pmea=Pocillopora meandrina, Pnie=Psammocora nierstraszi, Prus=Porites rus, and Pvar=Pavona varians.

Island Site	Maui Hekili Point	Maui Kanahena Bay	Maui Olowalu Stream	Maui Olowalu	Maui Olowalu
Depth (m)	1.0	1.0	3.0	3.0	7.0
Coce	0.0	0.0	0.0	0.0	0.0
Lpur	0.0	0.0	0.3	0.2	0.0
Mcap	2.2	1.5	0.1	8.1	19.5
Mpat	0.3	0.2	1.2	1.9	14.1
Pbr1	0.0	0.0	0.0	0.1	0.0
Pcom	3.2	0.1	0.1	3.5	1.2
Pdam	0.0	0.1	0.0	0.0	0.0
Pdue	0.0	0.0	0.0	1.7	0.1
Pve	0.8	0.2	0.1	0.0	0.0
Plic	0.0	0.0	0.0	0.2	0.1
Plob	10.3	9.0	14.5	4.8	14.1
Pmal	0.0	0.0	0.0	0.0	0.0
Pmea	0.0	0.4	4.3	1.8	1.5
Pnie	0.0	0.0	0.0	0.2	0.0
Prus	0.0	0.0	0.0	0.1	0.0
Pvar	0.0	0.0	0.2	0.5	0.2
Total Coral	16.8	11.5	20.8	23.1	50.9
Richness ¹	5	6	9	14	10
Similarity ²		77.8	56.1	56.5	54.6

¹ Species richness is the total number of coral species documented at a site.

² Similarity is the Bray-Curtis similarity coefficient. Higher numbers represent a greater similarity among coral assemblages.

Table 2: Percent coral cover by species at the 3m Olowalu stream site compared to CRAMP sites with similar community assemblages (>75 similarity branch in dendrogram) or in close proximity (<5km) to the study site. Species codes as follows; Coce=*Cyathostrea coccinea*, Lpur=*Leptastrea purpurea*, Mcap=*Montipora capitata*, Mfla=*Montipora flabellata*, Mpat=*Montipora patula*, Pbr1=*Porites brighami*, Pcom=*Porites compressa*, Pdue=*Pavona duerdeni*, Pedy=*Pocillopora edjouxi*, Peve=*Porites evermanni*, Plic=*Porites lichen*, Plob=*Porites lobata*, Pmal=*Pavona maldivensis*, Pmea=*Pocillopora meandrina*, Pnie=*Psammodora nierstraszii*, Prus=*Porites rus*, and Pvar=*Pavona varians*.

Island Site Depth (m)	Maui		Hawaii		O'ahu		Maui		Maui		Maui	
	Olowalu Stream	Lā'aloa	Laupāhoehoe	Ka'apuna	Kahe Point	Puamana	Olowalu	Olowalu	Olowalu	Mā'ālaea	Mā'ālaea	Mā'ālaea
	3	3	3	4	3	3	3	3	3	7	3	6
Coce	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lpur	0.3	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0
Mcap	0.1	0.1	0.3	0.4	0.5	0.9	8.1	19.5	0.4	1.0	0.4	1.0
Mfla	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mpat	1.2	0.2	0.9	0.1	1.2	1.1	1.9	14.1	1.2	0.6	1.2	0.6
Pbr1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Pcom	0.1	0.0	0.4	0.0	0.1	0.1	3.5	1.2	0.1	0.1	0.1	0.1
Pdue	0.0	0.0	0.0	0.0	0.0	0.1	1.7	0.1	0.0	0.0	0.0	0.0
Peyd	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Peve	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Plic	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
Plob	14.5	15.7	5.7	3.2	5.3	5.8	4.8	14.1	17.0	4.1	4.1	4.1
Pmal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pmea	4.3	10.8	3.2	6.8	7.6	5.0	1.8	1.5	1.2	0.7	1.2	0.7
Pnie	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Prus	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Pvar	0.2	0.2	0.6	0.0	0.0	0.1	0.5	0.2	0.0	0.0	0.0	0.0
Total Coral	20.8	27.1	11.1	10.7	14.9	13.4	23.1	50.9	19.9	6.4	19.9	6.4
Richness ¹	9	6	8	6	8	11	14	10	5	5	5	5
Similarity ²		81.1	74.1	64.3	75.8	80.0	53.8	58.1	80.4	59.6	80.4	59.6

¹ Species richness is the total number of coral species documented at a site.

² Similarity is the Bray-Curtis similarity coefficient. Higher numbers represent a greater similarity among coral assemblages.

DISCUSSION

Coral community assemblage and comparison to other sites

The sheltered 1m Hekili Point site is similar to another sheltered site on Maui at Kanahena Bay in the 'Āhihi - Kīna'u Natural Area Reserve. Both sites have a southern exposure but the 1m Hekili Point site is in a back reef environment with species (e.g. *Montipora capitata* and *Porites compressa*) indicative of calmer waters (Jokiel et al. 2004). The Kanahena Bay site had a lower proportion of *P. compressa* cover and did not have the same reef geomorphology as the Hekili Point site. Instead the protection from wave exposure at this site was due to the orientation of the embayment which did not have a direct opening to typical swell patterns in the area. Consequently, the 1m Hekili Point site appears to be unique among the sites compared in this study. Perhaps evaluations of other back reef habitats in the Hawaiian archipelago with southern exposures (e.g. south shore Moloka'i) would yield similar coral assemblages. Limihuli on Kaua'i (Figure 5) was the one northern exposure CRAMP site in a back reef environment. As seen in Figure 4, however, the Limahuli site (KaLim01) was relatively unique compared to Hekili Point and had a low similarity coefficient (51.7). This low similarity was due to the presence of *Montipora flabellata* (3.2%) and overall higher percent coral cover (22.8% vs. 16.8%) at Limahuli.

In comparison, the 3m reef adjacent to the Olowalu stream is similar in the coral assemblage to other Hawaiian reefs with a southern exposure. The most abundant corals in terms of percent cover are *Porites lobata* and to a lesser degree by *Pocillopora meandrina*. Dollar (1975, 1982) reported similar coral community structure at reefs along the southeast coastline of Hawai'i. He described a zonation pattern oriented by depth and influenced by wave energy. *P. meandrina* colonies inhabited the shallowest depth (<10') with the highest wave action. As depth increased (10-40'), *P. lobata* colonies became the most abundant coral until they were replaced by *Porites compressa* colonies at depths (>40') with minimal water motion (Dollar 1975). Coral communities that exhibited this pattern would continue to grow until a large storm would reset community development (Dollar and Tribble 1993).

Surveys on other Hawaiian coral reef communities describe a wider gradient of assemblages depending on water motion (Storlazzi et al. 2001, Jokiel et al. 2004). Jokiel et al. (2004) reported that coral communities on the north shore with the most extreme water motion had predominantly encrusting *Montipora flabellata* and *M. patula*. In low water motion environments, such as Kāne'ohe Bay and the south shore of Moloka'i, coral communities included an abundance of *Porites compressa* and *Montipora capitata* (Jokiel et al. 2004). The 1m Hekili Point site did indicate a calmer environment at one end of the gradient, but the presence of *Porites lobata* colonies suggested that water motion could be higher during periods of south swells. Therefore, as mentioned earlier this site is relatively unique compared to the other CRAMP sites in the Jokiel et al. (2004) study.

In contrast, the 3m Olowalu stream site fell roughly in the middle of the gradient with more robust, high-energy corals (e.g. *P. meandrina* and *P. lobata*). These species have been shown to resist mechanical breakage in higher water motion (Rodgers et al. 2003) and occur in reef zones with moderate to high wave energy (Storlazzi et al. 2001). Consequently, the species present at the Olowalu stream site describe an area with moderate to high wave energy. The same wave energy regime appears to be influencing sites with similar assemblages on other islands. At present, these species patterns are consistent with areas primarily impacted by natural factors.

Examining the disturbance history at these sites can help differentiate natural versus anthropogenic impacts and the relative role in structuring the coral assemblage. The following discussion focuses on the CRAMP Puamana and Olowalu sites which are approximately 10km apart, contain long-term (10 years) information on the coral assemblages, and border the Hekili Point and Olowalu stream sites. Connell et al.

(1997) noted on the Great Barrier Reef, over a smaller spatial but longer temporal scale, that variation in the benthic community assemblage was due to the type, intensity, and spatial scale of the disturbances.

Disturbance history

Hurricane history of each site is an important factor influencing coral community assemblages. At present the known hurricanes to cross land in Hawai'i include Dot (August 1959) and Iniki (September 1992) (National Weather Service, Central Pacific Hurricane Center: <http://www.prh.noaa.gov/hnl/cphc/pages/hurrclimate.html>). Other notable storms that have approached Hawai'i include Hurricane Nina (November 1957), tropical storm Iwa (November 1982), and hurricane Estelle (July 1986). Each of these storms produced southerly waves that would have impacted the Puamana and Olowalu reefs to a greater or lesser degree. Only a handful of marine monitoring studies in Hawai'i, however, have been able to document the impact from these storms (e.g. Dollar and Tribble 1993). S.L. Coles and E.K. Brown (unpublished manuscript) noted the decline in coral cover at 4 stations around Kahe Point, O'ahu following Hurricane Iniki. The overall community development, however, varied at spatial scales of 200-300 meters with some sites already in decline prior to the hurricane. Other sites, however, continued to increase in coral cover despite the temporary setback from the hurricane.

Monitoring data at Puamana and Olowalu also showed spatial differences in the coral community response to Hurricane Iniki (Brown 1999). Puamana declined in coral cover to almost zero (From ~11-12% coral cover in 1992 to <1% at Puamana 13m, Brown 1999) while Olowalu remained relatively unaffected. Differences in bottom topography, colony sizes prior to the storm, and coastal geomorphology (e.g. presence of Hekili Point in Figure 1) may explain the differential impacts of the storm between the two sites and the resulting size frequency distributions. The Olowalu stations have a more extensive reef structure than the stations at Puamana (Coyne et al. 2003). This topography would have dissipated the wave energy over a broader expanse of reef thus possibly reducing destructive wave forces at the Olowalu CRAMP stations (e.g. Young 1989). The Olowalu stream site, however, has a narrow fringing reef that slopes down to a deeper depth of 20m within a short distance of shore (Figure 1). The reef structure (slope and width) at this site more closely resembles the Puamana site which helps explain the similarity between the sites compared to the CRAMP Olowalu site. In comparison, the 1m Hekili Point site was in a back reef habitat with a reef crest that would have shielded the site from the strong southerly waves. This would help explain the uniqueness of the assemblage (*Porites lobata* mixed in with *Montipora capitata* and *P. compressa*) at this site compared to the other sites in the CRAMP study. Modeling storm waves moving into shore at both sites would clarify this pattern but it is beyond the scope of this study.

The larger colony sizes of *Montipora capitata*, *M. patula*, *Porites compressa*, and *P. lobata* colonies at the Olowalu stations (Figures 4 and 5) (Brown 2004) suggest that colony sizes may have been large enough to survive the storm waves during Hurricane Iniki (e.g. Woodley et al. 1981). Another possibility is that storm waves produced higher mortality in small colonies at the Olowalu stations resulting in the left skewed distributions (Brown 2004). Woodley et al. (1981), however, found that large colonies that survived hurricane Allen off Jamaica provided shelter for smaller adjacent colonies in their lee. Therefore, it is possible that left skewed distributions with a few small colonies were present prior to hurricane Iniki. In addition, the presence of larger colonies at the Olowalu stations for all 5 abundant species suggest that the disturbance regime is lower than at Puamana otherwise large colonies would seldom appear in the size frequency distribution (Karlson 1999). Colony size was not measured at either the Hekili Point or Olowalu stream site but cursory analysis of the video suggests that the Olowalu stream site had similar sized colonies to the Puamana site. In addition, the

presence of *Pocillopora meandrina*, which tends to reach maximum diameters of 40-50cm, indicates that the Olowalu stream site has a different wave regime than the CRAMP Olowalu 3m and 7m sites. The Hekili Point site, however, had small to medium sized *P. lobata* colonies that would have protected the other species and would be more similar to the Olowalu CRAMP sites. The shallower depth of the Hekili Point site coupled with the dissimilar assemblage (Figure 4, Table 1) suggests that the Hekili Point site was intermediate or even unique in the wave energy regime.

Finally, coastal features such as Hekili Point (Figure 1) may have deflected the southwesterly hurricane waves providing more shelter for the Olowalu stations compared to the Puamana stations. Wave models from the Naval Oceanographic website have displayed lower wave heights at the Olowalu stations depending on the swell direction (e.g. May 4, 2003 nowcast). The Olowalu stream site is west of Hekili point and therefore more likely to experience the same wave energy regime as the Puamana site. In contrast, the Hekili Point site while still west of the actual point is located in a different reef environment which appears to change at the artificial jetty (Figure 1). Not only does the reef geomorphology broaden out going east but preliminary drogoue data indicates that current patterns differ depending on the location relative to the jetty (Figure 6). Thus, it appears that all three factors (bottom topography, large colony sizes prior to the storm, and the presence of Hekili Point) explain the differential impacts from hurricane Iniki between Olowalu and Puamana. In addition, these factors indicate that the Olowalu stream site is more closely linked to the Puamana site while the Hekili Point site appears to be unique due to the back reef habitat.

Since hurricane Iniki in 1992, the percent coral cover at both of the Puamana reefs showed a marked recovery compared to the reefs at Olowalu which have remained relatively stable (Brown 2004). Based on the similarity with the Puamana reef, one might infer that the Olowalu stream site has followed a similar pattern of decline during Iniki with subsequent recovery. At the Puamana 3m site there has been a slight downturn in recent years which has been attributed to a shift in the community assemblage from *Pocillopora meandrina* to a reef dominated by *Porites lobata*, *Montipora capitata*, and *M. patula* (Brown 2004). This same pattern may be occurring at the Hekili Point and Olowalu stream site but without temporal data it is difficult to confirm this.

The reefs at Puamana and Olowalu have also been subjected to land based human activities (sugar cane and coastal development) during the past century yet the temporal patterns in coral cover at these reefs within the last decade have been very different. Each of the sites had historical streams (Kaua'ula stream for Puamana and Olowalu stream for Olowalu) that were diverted for sugar cane production around 1860 when Pioneer Mill began operations (Wilcox 1996). Subsequent sugar cane production at both sites and housing developments at Puamana have continued for nearly 140 years. Sugar cane production ceased in 1999 (Honolulu Star Bulletin, September 3, 1999). Efforts are underway to develop the agricultural land into housing tracts which would again alter the watershed. Six, 2 acre lots adjacent to the Olowalu stream site are slated for development and may influence the nearshore waters. At the Hekili Point site, one house has already been built since the survey but additional homes are unlikely in the vicinity due to a state of Hawai'i conservation easement (Reference **). Documenting changes at both the Puamana and Olowalu reefs during the land use transition will help clarify human impacts compared to natural factors.

Anthropogenic disturbances, as defined by the proximity to urban centers and human activities, varied for the similar sites. Puamana (Maui) and La'aloa (Hawai'i) were both adjacent to towns with projected development in the watershed. In contrast, Ka'apuna (Hawai'i) was the most remote site located several kilometers from the nearest settlement. All four Olowalu sites and Laupāhoehoe (Hawai'i) had sugar cane fields in the neighboring watershed. Mā'alaea (Maui) continues to have agricultural impacts (sugar cane, pineapple, and cattle) but the primary anthropogenic factor is the harbor fronting the reef sites. Kahe Point is unique due to the intake and outfall pipes from the H3 power generating station. Thus, the similarity in coral assemblages among sites

despite the variation in anthropogenic activities would suggest that these factors do not play a large role in structuring these communities.

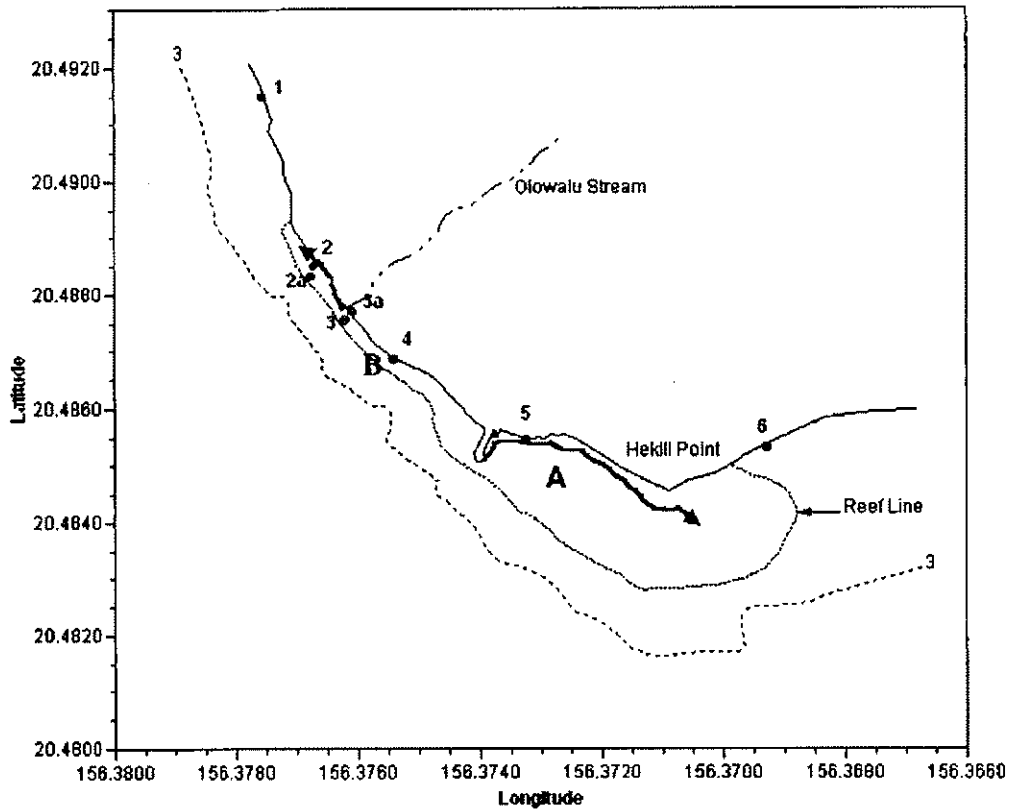


Figure 6. Generalized current patterns in proximity to the 1m Hekili Point site (A) and the 3m Olowalu stream site (B). **Data represent drogue tracks over 1 hour during an ebb tide.

Summary

- The 1m Hekili Point site is unique among the sites compared in this study but may be more typical of sheltered back reef areas along southern exposures.
- Turf algae was the most abundant substrate at the Hekili Point site covering 67.0% of the benthos followed by live coral (16.8%), sand (10.7%), macroalgae (2.9%), coralline algae (2.3%), and macro invertebrates (<1%).
- Six coral species were observed at Hekili Point in the following ranking of percent cover; *Porites lobata* (10.3%), *Porites compressa* (3.2%), *Montipora capitata* (2.2%), *Porites evermanni* (0.8%), *M. patula* (0.3%), and *Pocillopora meandrina* (0.03%).
- The 3m Olowalu stream site is characterized by a typical shallow water coral assemblage on the south shore of the Hawaiian Islands.
- At the 3m Olowalu stream site, turf algae covers the highest percentage of the benthos (67.3%) followed by live coral (20.8%), coralline algae (9.1%), sand (1.4%), macroalgae (1.0%), and macro invertebrates (<1%).
- A total of 9 coral species were documented at the Olowalu stream site. The most abundant species were *Porites lobata* (14.5%) followed by *Pocillopora meandrina* (4.3%) and *Montipora patula* (1.2%).
- The 1m Kanahena Bay site was most similar to the 1m Hekili Point site but varied in geomorphology and the presence of *Pocillopora meandrina*.
- Several sites on Oahu, Maui and Hawai'i have similar coral assemblages to the 3m Olowalu stream site and are characterized by a southern exposure. The one exception is Laupāhoehoe on Hawai'i which has a northern exposure.
- The lack of similarity of the Hekili Point site to sites in close proximity (e.g. Olowalu and Puamana) 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.
- 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 (e.g. water motion).

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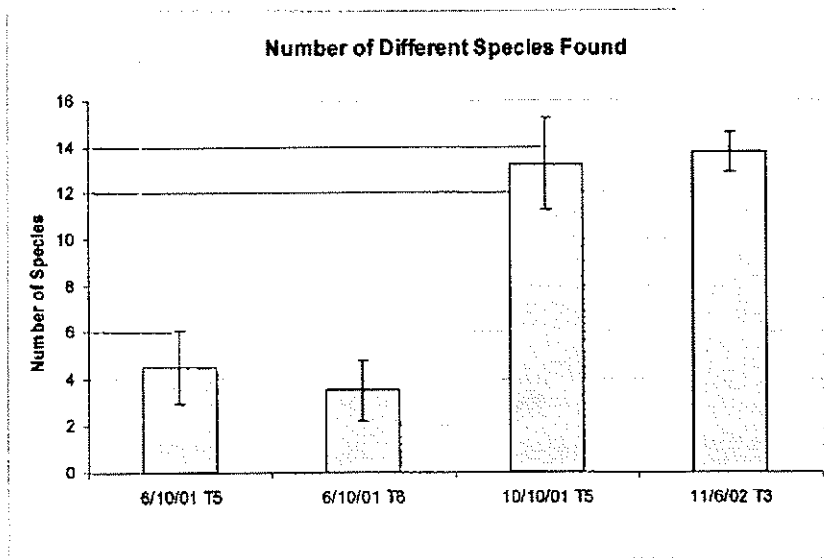
Fish Assemblage Structure at Hekili Point, Maui

METHODS

Fish Assemblage/Biomass

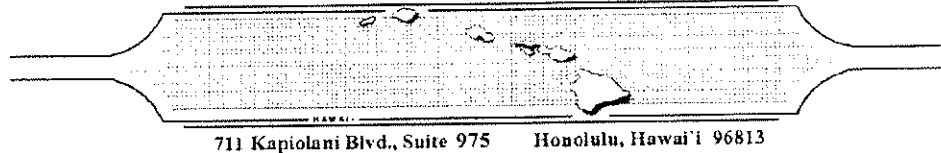
Fish assemblages at each location were assessed using standard underwater visual belt transect survey methods (Brock 1954; Brock 1982). A SCUBA diver swam each 25m x 5m transect at a constant speed (~ 15 min/transect) and identified to the lowest possible taxon, all fishes visible within 2.5 m to either side of the centerline (125 m² transect area). Transects were located along the centerline of the previously established CRAMP benthic survey grids. Four transects, separated by 5 m gaps, were conducted at each location. Total length (TL) of fish was estimated to the nearest centimeter. Length estimates of fishes from visual censuses were converted to weight using the following length-weight conversion: $W = aSL^b$ (the parameters a and b are constants for the allometric growth equation where SL is standard length in mm and W is weight in grams). Total length was converted to standard length (SL) by multiplying standard length to total length-fitting parameters obtained from FishBase (www.fishbase.org). Length-weight fitting parameters were available for 150 species commonly observed on visual fish transects in Hawaii (Hawaii Cooperative Fishery Research Unit unpublished data). This was supplemented by using information from other published and web-based sources. In the cases where length-weight information did not exist for a given species, the parameters from similar bodied congeners were used. This data was then used to estimate total biomass for the area. Finally, fish taxa were categorized into 6 trophic categories (herbivore, mobile invertebrate feeder, sessile invertebrate piscivore, zooplanktivore, and detritivore) according to Randall (1996) and Friedlander, *et al.*, (1997) for comparisons among sites.

RESULTS



APPENDIX D.

**Scientific Consultant Services,
Inc. Letter Dated January 22,
2007**



Bill Frampton-Manager
 Olowalu Town, LLC
 2073 Wells St., Suite 101
 Wailuku, HI 96793

January 22, 2007

RE: Letter Report: Field Inspection of Previously Identified Sites within a Burned Area (Approximately 500-acres of a Total 660 Acres) in Olowalu Ahupua`a, Lahaina District, Island of Maui [TMK: 4-8-3: 10 por.].

Scientific Consultant Services, Inc. (SCS) was contracted to conduct an Archaeological Field Inspection of a large land tract cleared by a recent brush fire. The land parcel is an undeveloped land tract composing some 660-acres, with 500-acres of the parcel having been cleared by the fire. The property is located in Olowalu Ahupua`a, Lahaina District, Island of Maui [TMK: 4-8-3:10 por.] (Figure 1). The landowners should be commended for funding this rare opportunity for project archaeologists (re-survey of a cleared landscape) and for the community, to firmly establish the quantity and types of sites present in Olowalu.

Background

The Field Inspection was requested by Olowalu Town, LLC (Bill Frampton-Manager) following a fire that burned approximately $\frac{3}{4}$ of the parcel, creating ideal circumstances for visibility of surface archaeological sites and component features. The purpose of this work was to determine the presence/absence of previously undocumented archaeological sites and/or component features within the burned environs, taking advantage of the advanced degree of visibility and ensuring some degree of certainty of the completeness of recordation of the archaeological record for this area.

It is well known in the Hawaiian Islands that under normal field conditions, site visibility is often hampered by vegetative overgrowth and sites are non-obtrusive. Such a large tract of land also offers uneven conditions with much variability in project area topography, vegetation, and soil regimes. In short, the completeness of archaeological documentation is never guaranteed. Environmental factors, such as vegetation density, terrain, weather, decomposition of features, and host of other factors, impact the visibility of archaeological sites in the field. Often, significant surface features can be totally obscured by layers of vegetative detritus or heavy feature collapse/damage. The ideal conditions for archaeological visibility would be a landscape that is devoid of vegetation (but not a demolished landscape *ala* Kahoolawe). Recent archaeological studies have shown that site identification increases concurrent with increased landscape visibility (Holm and Kirch 2007, case study from Kahikinui, Maui). The rare opportunity to take advantage of such a condition was provided during July 2007, when a natural brush fire removed all vegetative detritus and living vegetation from the eastern $\frac{3}{4}$ of the present study parcel.

Previous Archaeology

Previous Archaeological work in the project area was conducted in two phases by Xamanek Researches (Fredericksen and Fredericksen 2000). Using standard Inventory Survey methods (systematic pedestrian survey, recordation of sites and component features, mapping, photography and limited subsurface testing) Fredricksen and Fredericksen (200) documented a total of 30 sites with 78+ component features in the project area. Table 1 provides a description of these sites.

Table 1: Previously Identified Sites, Description, Comments, and GPS Points from the Present Field Inspection.

SIHP 50-50-08-	# Features	Description	Field Inspection Comments	GPS Point
4	1	<i>Heiau</i>	Some dozer push-piles noted near the northwest corner of the site. These were not documented in previous work.	e04748400, n2303972
1603	1+ (?)	Lanakila Hawaiian Protestant Church	not relocated during this work	-
3180	1	Rock wall	not relocated during this work	-
4699	9	8 rockshelters, 1 modified outcrop	not relocated during this work	-
4700	10	8 rockshelters, 1 rock wall, 1 C-shape	not relocated during this work	e0746592, n2304654
4701	1	Platform remnant	Site relocated, no comments	e0746649, n2304558
4702	1	L-shape	Site relocated, no comments	-
4703	3	U-shape, rock alignment, and modified outcrop	not relocated during this work	-
4704	7	Petroglyph Complex	not relocated during this work	-
4705	2	Rockshelters	not relocated during this work	-
4706	1	Rockshelter	Site relocated, no comments	e0748449, n2304374
4707	2	Rock wall and rock mound	Site relocated, no comments	e0748507, n2304388
*4708	3	Platform and two series of agricultural terraces	Newly documented feature: Feature C, a series of agricultural mounds located on the <i>makai</i> (west) side of Feature A	e0748476, n2304278
4709	4	Two concrete foundations, rock wall/terrace, and series of irrigation ditches	not relocated during this work	-
4710	7	Habitation Complex	Site relocated, no comments	e0748491, n2304141
4711	2	Linear rock pile and terrace	not relocated during this work	-
4712	2	Modified outcrop, rock pile	Site relocated, no comments	-
4713	1	Rockshelter	Site relocated, no comments	-

4714	1	Rockshelter	Site relocated, no comments	-
4715	1+ (?)	Burial ground	Site relocated, no comments	-
4716	2	Terrace and rock wall	Site relocated, no comments	-
4717	4	Walls	not relocated during this work	-
4718	3	Heiau, consisting of enclosure and two burials	Site relocated, no comments	e0748050, n2303568
4719	1	Boundary marker	not relocated during this work	-
4720	1	Historic retaining wall	not relocated during this work	-
4721	1	Platform	not relocated during this work	-
4758	1+ (?)	Historic Cemetery	Some headstones have cracked and spalled in recent fire	e0747089, n2303787
4820	1+ (?)	Surface scattering of Human Remains	not relocated during this work	-
4821	1+ (?)	Surface scattering of Human Remains	not relocated during this work	-
4822	1	Pond	not relocated during this work	-
4823	1	Subsurface gleyed deposits	not relocated during this work	-
1200	1+ (?)	Petroglyph Complex	Some of the petroglyphs have been damaged by smoke and spall in fire	e0748369, n2304322
* newly documented feature				
(?) Precise number of features is not reported in Fredericshen and Fredericksen 2000				

Field Inspection Results

After the recent brush fire in July, 2007, SCS Archaeologist Ian Bassford was dispatched to perform an Archaeological Field Inspection of the burned area. The Field Inspection occurred intermittently between July 17 and August 6, 2007. During the Field Inspection, Mr. Bassford relocated only those sites which were within the burned area. He also recorded a GPS point for each of the newly relocated sites. This data is also presented in Table 1. Overall ground surface visibility was high, was expected.

In sum, only two sites were adversely impacted by the fire. At Site -4758, a Historic cemetery, several of the headstones became fire-cracked and spalled in the heat. Site -1200, a petroglyph complex located on the *mauka* (northeast) side of Pu'u Kilea, was partially damaged by smoke and some petroglyphs were spalled in the heat. Push-piles were noted off the northwest corner of Site -04, Kawaialoa Heiau. These push-piles were not specifically mentioned in Fredericksen and Fredericksen (2000) and may be modern, pertaining to fire fighting. Testing was not completed to determine their origin.

One new feature was identified during the Field Inspection. The feature consists of a series of agricultural terraces located to the northeast of Site -4708, a site that was originally documented as containing two features. Fredericksen and Fredericksen (2000) report Feature A as a faced retaining wall and Feature B as a series of agricultural terraces. The morphological similarity and geographic proximity of this newly identified feature has led it to be recorded as Site -4708 as Feature C. In other terms, the new agricultural terraces have been subsumed under Site -4708. All other sites/features noted during the Field Inspection were previously recorded.

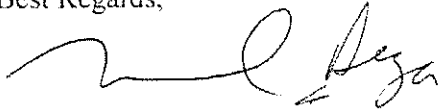
Conclusions

All the sites previously documented on the parcel were assessed per varying levels of significance (Fredericksen and Fredericksen 2000:67). These significance evaluations remain unchanged after the current Field Inspection. Previously stated recommendations still apply to these sites as well.

Per the additional agricultural terraces identified during the current work, now designated as Feature C of Site -4708, the addition of another *lo`i* terrace complex does not change the original interpretation or significance of this site (see Fredericksen and Fredericksen 2000). The site was originally interpreted as a *heiau* with associated *lo`i*. The new features simply add to the breadth of the site. Site -4708 remains significant under Criterion E, due to its interpreted status as a religious site.

While the Field Inspection provided a tremendous opportunity to view the landscape in an unusual form (without vegetation), only one new agricultural complex was identified. The previous archaeology conducted within the project area proved to be quite thorough and accurate. We were fortunate to have had the opportunity to re-assess this landscape and more completely assure the client and community that all sites occurring on the parcel have indeed been documented and recorded.

Best Regards,

A handwritten signature in black ink, appearing to read "Michael F. Dega". The signature is fluid and cursive, with a long horizontal stroke at the beginning.

Donna M. Shefcheck, B.A.,
Michael F. Dega, Ph.D.