

ORDINANCE NO. 4920

BILL NO. 119 (2018)

A BILL FOR AN ORDINANCE AMENDING SECTION 2.80B.070, MAUI COUNTY CODE, TO ADOPT THE UPDATED MOLOKA`I ISLAND COMMUNITY PLAN

BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:

SECTION 1. The Molokai Community Plan, having an effective date of December 19, 2001, as amended, is hereby repealed, and the updated Moloka`i Island Community Plan (2018), attached hereto and incorporated herein by reference as Exhibit "1", is adopted.

SECTION 2. The Molokai Community Plan name was changed to the Moloka`i Island Community Plan. Notwithstanding this name change, the Moloka`i Island Community Plan is a community plan as referenced in, and in compliance with, the Revised Charter of the County of Maui (1983), as amended, and the Maui County Code.

SECTION 3. Section 2.80B.070, Maui County Code, is amended by amending subsection C to read as follows:

"C. The following community plans are incorporated by reference and adopted pursuant to this chapter:

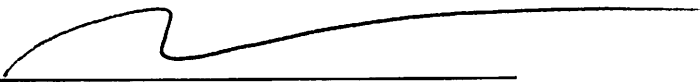
1. Hana Community Plan - Ordinance No. 2347 (1994), as amended[;] .
2. Paia-Haiku Community Plan - Ordinance No. 2415 (1995), as amended[;] .
3. Kahoolawe Community Plan - Ordinance No. 2413 (1995), as amended[;] .
4. West Maui Community Plan - Ordinance No. 2476 (1996), as amended[;] .

5. Makawao-Pukalani-Kula Community Plan - Ordinance No. 2510 (1996), as amended[;] .
6. Kihei-Makena Community Plan - Ordinance No. 2641 (1998), as amended[;] .
7. Lanai Community Plan [(2016);] - Ordinance No. 4343 (2016), as amended.
8. [Molokai] Moloka`i Island Community Plan [- Ordinance No. 3022 (2001), as amended; and] (2018).
9. Wailuku-Kahului Community Plan - Ordinance No. 3061 (2002), as amended.”

SECTION 4. Material to be repealed is bracketed. New material is underscored. In printing this bill, the County Clerk need not include the brackets, the bracketed material, or the underscoring.

SECTION 5. This ordinance shall take effect upon its approval.

APPROVED AS TO FORM AND  
LEGALITY:



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MICHAEL J. HOPPER  
Department of the Corporation Counsel  
County of Maui  
2017-0096  
PC-2 2018-10-29 Ord Amd 2.80B.070

**MOLOKA`I ISLAND  
COMMUNITY PLAN UPDATE  
(2018)**

**EXHIBIT “1”**

County of Maui  
September 2018

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Chris Hart & Partners, Inc.  
John M. Knox & Associates, Inc.: *Moloka`i Economic Development Paper and  
Moloka`i Housing Issue Paper*  
Belt Collins Hawai`i LLC, John Kirkpatrick: *Land Use Forecast*  
SMS Research & Marketing Services, Inc. and Belt Collins Hawai`i Ltd: *Socio-  
Economic Forecast*  
Wilson Okamoto Corporation: *County of Maui Infrastructure Assessment  
Update 2003*  
R. M. Towill Corporation: *Public Facilities Assessment Update County of Maui  
2007*  
PlanPacific, Inc.: Existing land use database for *Socio-Economic Forecast*

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**Moloka`i Island Community Plan**

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**LIST OF ACRONYMS**

BCT	Business Country Town
BMP	Best Management Practices
CIP	Capital Improvement Program
County	County Department of Transportation
DOT	
CPAC	Community Plan Advisory Committee
CRS	Community Rating System
CTAHR	University of Hawai'i, College of Tropical Agriculture and Human Resources
CWPP	Community Wildfire Protection Plan
CWRM	State Commission on Water Resource Management
DBEDT	State Department of Business Economic Development and Tourism
DEM	County Department of Environmental Management
DHHC	County Department of Housing and Human Concerns
DHHL	State Department of Hawaiian Homelands
DLNR	State Department of Land and Natural Resources
DoCARE	State DLNR, Division of Conservation and Resource Enforcement
DOA	State Department of Agriculture
DOE	State Department of Education
DOH	State Department of Health
DOFAW	State DLNR, Division of Forestry and Wildlife
DPW	County Department of Public Works
DWS	County Department of Water Supply
EMA	County Emergency Management Agency
FEMA	Federal Emergency Management Agency
FIRMs	Flood Insurance Rate Maps
GIS	Geographic Information System
HDOT	State Department of Transportation
HFRA	Healthy Forest Restoration Act
HMP	County Hazard Mitigation Plan
HRS	Hawai'i Revised Statutes
HAZUS-	Hazards U.S. Multi-Hazard program
MH	
ISWMP	Integrated Solid Waste Management Plan
LEED	Leadership in Energy and Environmental Design
LID	Low Impact Development
MCC	Maui County Code
MCHC	Moloka'i Community Health Center
MECO	Maui Electric Company
MEDB	Maui Economic Development Board

MEO	Maui Economic Opportunity
MFD	Maui Department of Fire and Public Safety
MFI	Median Family Income
MGD	Million Gallons per Day
MIS	Moloka`i Irrigation System
MLSWCD	Moloka`i Soil and Water Conservation District
MoPC	Moloka`i Planning Commission
MPD	Maui Department of Police
MW	Megawatt
NFIP	National Flood Insurance Program
NGO	Non-Governmental Organization
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resource Conservation Service
OED	County Office of Economic Development
OHA	State Office of Hawaiian Affairs
PD	County Department of Planning
PR	County Department of Parks and Recreation
SHPD	State Historic Preservation Division
SLR	Sea Level Rise
SMA	Special Management Area
STRHs	Short Term Rental Homes
TMK	Tax Map Key
TNC	The Nature Conservancy
TVR	Transient Vacation Rental
UH	University of Hawai`i
UHMC	UH Maui College, Moloka`i Education Center
UHERO	University of Hawai`i Economic Research Organization
UHMC	University of Hawai`i Maui College
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WWRF	Waste Water Reclamation Facility
WWTF	Wastewater Treatment Facility

## 1 | INTRODUCTION

Moloka`i is an island tremendously rich in natural and cultural resources. Its physical geography makes it one of the most striking places in the world to live and visit, and its bountiful agricultural lands are among the most fertile in the State. Moloka`i is famous for having the highest sea cliffs in the world, the most intact pre-contact system of man-made fishponds that exist anywhere in Polynesia, and the longest contiguous fringing coral reef system in the United States.

Moloka`i is often referred to as the “Last Hawaiian Island.” It is the most rural of the Hawaiian Islands and, excluding Ni`ihau, has the highest percentage of native Hawaiians in the State. Many Moloka`i residents still practice a subsistence-based lifestyle, relying on fishing, hunting, farming, and gathering for food, spiritual wellbeing, and cultural practices. Subsistence and bartering also play an important role in the island’s economy. There is a strong sense of `ohana on Moloka`i. Large extended families are common and sharing resources is customary. For many Moloka`i residents, maintaining close ties to the ocean, land, and ancestral places fosters a sense of connectedness to past, present and future generations.

Many Moloka`i families have lived on the island for generations, while some are more recent arrivals. Key events have shaped the structure and vitality of Moloka`i’s economy and land use, and in turn, have influenced the population makeup and employment of the island. Today, the people, brought together from many different cultures, share common values – a love for `ohana, the land and sea, and the rural lifestyle. The tightly-knit community, with its array of expertise and backgrounds, desires to be sustainable and part of the global economy.

But despite these great strengths, Moloka`i has historically had a limited economy partially due to the island’s remote location, small population base, and strong control by a few major landowners. Moloka`i residents are very protective of their rural and traditional-based lifestyles and have resisted economic development centered on tourism and real estate. Establishing a more vibrant job-producing economy, in harmony with Moloka`i’s rural lifestyle and cultural and environmental resources, will necessitate more creativity, harder work, and a greater spirit of entrepreneurialism than required for other areas with greater economies of scale. Moloka`i’s natural environment, cultural resources, and agricultural lands are key assets that, if properly managed and protected, will help to strengthen and diversify the island’s economy and ensure opportunities for future generations.

The Moloka`i Island Community Plan identifies current and anticipated future conditions and needs on Moloka`i. These conditions and needs are addressed throughout the Plan by identifying strategic planning goals, policies, and actions that will guide decision-making and implementation through 2035. Chapter 1 provides a general description of the planning area, the planning framework provided by the Maui County General Plan and the Hawaii State Planning Act, an overview of the community plan process, Plan organization, fast facts about Moloka`i, and a summary of the major problems and opportunities facing the island.

The Moloka`i Community Plan name was changed to the Moloka`i Island Community Plan in this update to acknowledge that Moloka`i is an island comprised of several communities (Central, East End, and West End). Notwithstanding this name change, the Moloka`i Island Community Plan is a community plan as referenced in, and in compliance with, the Revised Charter of the County of Maui (1983), as amended, and the Maui County Code.

## **OVERVIEW OF MOLOKA`I ISLAND COMMUNITY PLAN AREA**

Moloka`i is one of four islands that make up the County of Maui (see Figure 1.1). Its elongated shape embraces widely varying topographic and climatic regimes. The island of Moloka`i is comprised of approximately 172,000 acres, (including the northern peninsula of Kalaupāpā) formed by a series of three volcanoes. The peninsula of Kalaupāpā, and some of the surrounding area on the northern coast make up Kalawao County, which is administered by the Hawai`i State Department of Health. The Kalaupāpā National Historical Park is managed by the National Park Service.

Kaunakakai, the island's major population and commercial center, is located about midway along the south coast. The island's only resort destination area is located at Kaluako`i, on the western end of the island. Hotel Moloka`i and Moloka`i Shores, just outside of Kaunakakai, also offer limited visitor accommodations.

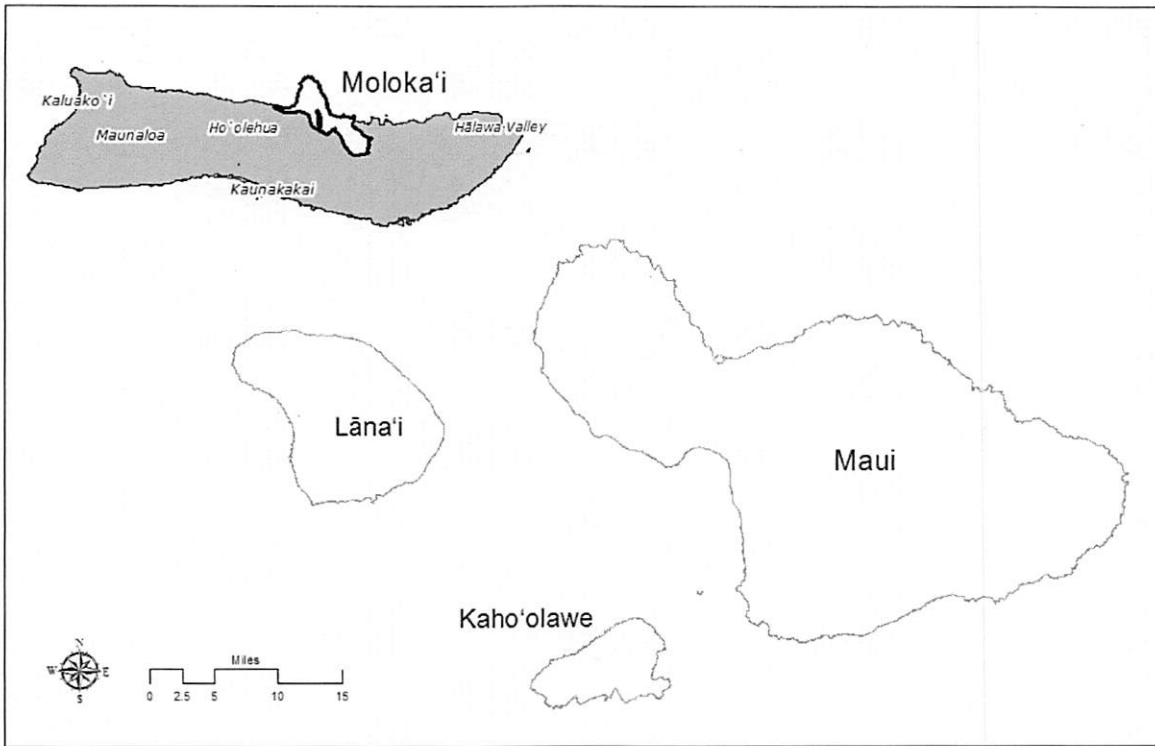
There are small plantation communities in Maunaloa and Kualapu`u, along with Hawaiian homestead settlements in Ho`olehua, Kapa`akea, Kamiloloa, One Ali`i, and Kalama`ula.<sup>1</sup> The settlement pattern along the southeast coast becomes more rural and scattered as it extends from Kaunakakai to Hālawā Valley. (See Appendix 1.1 for a summary of Moloka`i's history).

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<sup>1</sup> Pineapple plantation years were not without problems. It was a time of a dramatic turning point in the economy, lifestyle, and rural landscape of Moloka`i and Lanai. The pineapple companies completely shuttered on Moloka`i in 1988. The plantation model gave Hawaii the diverse local culture of today. The history of the plantation, whether it be sugar or pineapple, remains a struggle of times in the history of native Hawaiians.

Plantations formed the basis of what Hawaii is today. Labor unions grew out of the need to protect the common interests of laborers. A new language, known as Pidgin English, and a definite sense of simple understanding of communications came from the plantation days. Foods from different ethnicities were shared from table to table. Every plantation home had a garden to supplement their subsistence. More important, the local people of the plantation era were recognized as those who embodied respect for the land, a strong work ethic, respect for the host culture from the flow of immigrants, and an imprint of "caring and sharing" for one another, no matter the ethnicity.

**Figure 1. 1 Moloka'i Island Community Plan Region**



## **FAST FACTS ABOUT MOLOKA`I**

### **PHYSICAL FEATURES**

- Moloka`i is 261 square miles or 172,000 acres (includes Kalaupāpā).
- The island is about 38 miles long and 10 miles wide with 88 miles of coastline.
- It is the fifth largest island of the eight main Hawaiian Islands.
- Kamakou is the highest peak at 4,970 feet (1,514 meters).

### **POPULATION AND DEMOGRAPHICS (according to the 2010 Census)**

- The first Hawaiian homestead settlement, in Kalama`ula, initially named Kalaniana`ole Settlement, was created on Moloka`i as an agricultural homesteading demonstration project shortly after passage of the Hawaiian Homes Commission Act in 1921. Its success, dubbed “The Moloka`i Miracle,” led to permanent authorization of an Act of Congress in 1926.
- Figures from the 2010 Census show the population was 7,255 (excluding Kalawao County); a decrease of approximately 150 people from 2000.
- Native Hawaiians made up 24 percent of the 2010 population (excluding Kalawao County).
- Population by age: 15 percent was 0 to 9 years, 14 percent was 10 to 19 years, 47 percent was 20 to 59 years, and 24 percent was 60 years and over.
- The average daily visitor count in 2012 was 707, and there were 429 visitor units.

### **FLORA AND FAUNA**

- Moloka`i has 79 endangered and 3 threatened terrestrial species, 11 endangered, and 2 threatened marine species listed under the Endangered Species Act.
- The East Moloka`i Forest Conservation Area covers 40,000 acres.
- Moloka`i's south shore has the longest continuous fringing coral reef in the U.S.
- Pāpōhaku Beach is one of the State's longest white sand beaches and contains one of the last relatively intact dune systems in Hawaii.
- Moloka`i's coastal areas contain sand dunes, lithified sand formations, rare endemic Hawaiian coastal plant species, nesting seabirds, green sea turtles, the Hawaiian monk seal, and Hawaiian cultural sites.



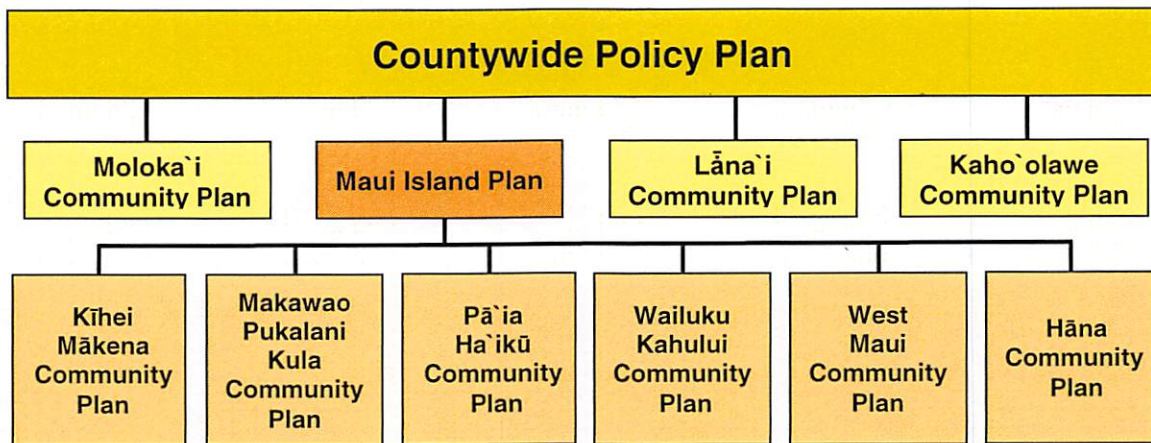
**1.1 COUNTY OF MAUI GENERAL PLAN STRUCTURE**

**A. GUIDANCE FROM THE COUNTYWIDE POLICY PLAN AND HAWAII STATE PLAN**

The County of Maui General Plan consists of the Countywide Policy Plan, the Maui Island Plan, and nine community plans (see Figure 1.2). The General Plan, adopted in 1980 and updated in 1990, sets forth long-term social, economic, environmental, and land use needs of the County. The Countywide Policy Plan was adopted in 2010, the Maui Island Plan was adopted in 2012, and initiation of the community plan updates began in 2010. The General Plan conforms to the Hawai'i State Planning Act and follows guidance set forth in the State Functional Plans.

In 2011, the Hawai'i State Legislature established sustainability as a State priority by adopting Section 226-108, Hawaii Revised Statutes ("HRS"), Sustainability, into the Hawai'i State Planning Act. In 2012, the Hawai'i State Legislature adopted Section 226-109, HRS, Climate change adaptation priority guidelines. The adaptation policy specifies that county or State plans must consider potential climate change impacts to agriculture, conservation lands, coastal and nearshore marine areas, natural and cultural resources, energy, the economy, and many other factors. Chapter 2 further discusses how these guidelines influence or shape the community plans.

**Figure 1.2 County of Maui General Plan Organization**



From 2004 to 2012, the Maui County Code (MCC) was amended to create new requirements under Chapter 2.80B, relating to the General Plan and community plans. Section 2.80B.070, MCC, provides the specific requirements for the community plan planning process, including requiring

that the community plans implement the General Plan's vision, principles, goals, and policies, and actions related to the following core themes as listed in the Countywide Policy Plan:

- Protect the Natural Environment
- Preserve Local Cultures and Traditions
- Improve Education
- Strengthen Social and Healthcare Services
- Expand Housing Opportunities for Residents
- Strengthen the Local Economy
- Improve Parks and Public Facilities
- Diversify Transportation Options
- Improve Physical Infrastructure
- Promote Sustainable Land Use and Growth Management
- Strive for Good Governance

## **B. THE 2018 MOLOKA`I ISLAND COMMUNITY PLAN UPDATE**

The Moloka`i Community Plan was initially adopted in 1984 and updated in 2001. The 2018 Moloka`i Island Community Plan Update incorporates the new requirements of Section 2.80B, MCC, including:

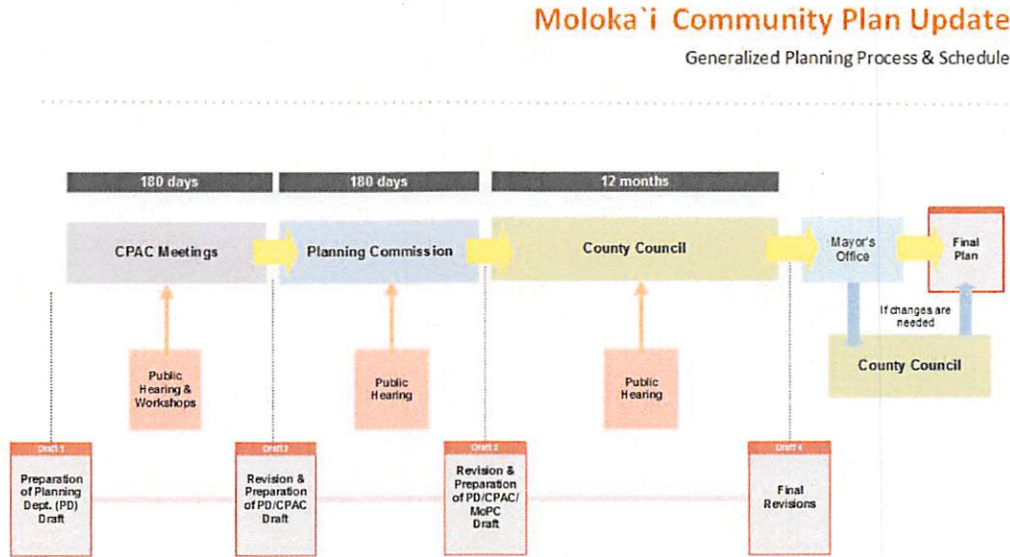
- A list of scenic sites and resources.
- A description of a projected multi-modal transportation system.
- A list of streetscape and landscaping principles and desired improvements.
- Implementation requirements that identify priorities, timelines, estimated costs, and the County department accountable for the completion.

The Department of Planning's (PD's) Long-Range Planning Division worked with the Moloka`i community, stakeholders, agencies, the Moloka`i Community Plan Advisory Committee (CPAC), the Moloka`i Planning Commission (MoPC), and the Maui County Council (County Council) between 2010 and 2018. Technical studies and issue papers referenced during the update process are identified in Appendix 1.2.

Section 2.80B, MCC, specifies the CPAC shall be composed of 13 members appointed by the County Council and the Mayor. It also specifies the PD staff and the CPAC conduct meetings and workshops that include public participation. The CPAC's recommendations are then forwarded to the MoPC for public hearings and review. The draft plan is then sent along with any comments or revisions to the County Council for review and enactment by

ordinance. This process and the time frame are summarized graphically in Figure 1.3.

**Figure 1. 3 Generalized Community Planning Process & Schedule**



Prior to embarking on the Plan update, the PD’s Long- Range Planning Division conducted four community engagement events and numerous interviews to hear directly from residents about their ideas and concerns (see Appendix 1.3). The events included:

- June 2010 - Open house on issues, needs, and ideas.
- October 2010 - Two workshops on vision, issues, goals, and strategies.
- November 2014 - Open house to present the feedback from previous events.

**C. PLAN ORGANIZATION**

The 2018 Moloka`i Island Community Plan Update is organized into 12 chapters with maps and appendices. Chapters provide the related background, existing conditions, issues, goals, policies, and actions. Goals are intended to describe a desirable condition of the island by the year 2035. They are intentionally general but are attainable. Policies are not intended as regulations, but instead provide general guidelines for County decision makers, departments, and collaborating organizations working toward

attainment of the goals. Implementing actions are specific tasks, procedures, programs, or techniques that carry out policies. Actions may be implemented by a lead County agency or by another entity, such as the State or non-profit groups assisted by the County.

As defined in Section 2.80B.020, MCC, the Plan is not intended to be used in the review of applications for ministerial permits, which are permits that do not involve judgment or discretion and are issued based on established criteria or a set of adopted standards as established by law.

Chapter 1 provides an introduction.

Chapter 2 explores Moloka`i's future vision and discusses sustainability and climate change adaptation.

Chapters 3 and 4 discuss Moloka`i's environment, and natural, cultural, historic, and scenic resources, as well as hazard mitigation and climate change adaptation.

Chapter 5 addresses economic development strategies to diversify the economy based on the Moloka`i Economic Development Issue Paper, and feedback from community engagement events and interviews.

Chapters 6 and 7 address land use, housing, and community design policies and actions that will shape future locations and forms of development.

Chapters 8 and 9 address the existing and future needs for infrastructure and public facilities and services. The governance section looks at what changes in the system and function of governance are needed to guide the community toward a sustainable future.

Chapter 10 is the East End Policy Statement.

Chapter 11 is the West End Policy Statement.

Chapter 12 addresses implementation and monitoring and prioritizes the list of actions from previous chapters including cost estimates, timelines, and the implementing agencies. The implementation table will facilitate funding decisions during the County budget process.

Appendix 1.4 provides an important framework for agency actions that may impact Native Hawaiian traditional and customary practices.

## 1.2 PROBLEMS AND OPPORTUNITIES

### INTRODUCTION

The following outline of the problems and opportunities that Moloka`i faces represents not only issues that the county government must address, but also the top concerns expressed by the community through public outreach events and deliberations of the CPAC and MoPC.

It is important to clearly define a problem to figure out how to solve it; likewise, it is also important to have a critical understanding of opportunities that exist within the community and how to best take advantage of them to create a more sustainable, resilient, and livable future for Moloka`i.

### PROBLEMS

- A. **Economic Activity and Socio-Economic Characteristics:** The high cost of living and limited economic activity are the most significant problems facing the Moloka`i community. There is a lack of economies of scale and economic diversity, and therefore, a lack of job opportunities. Moloka`i has lower incomes, higher unemployment rates, and a higher number of people receiving public assistance, when compared Statewide.<sup>2</sup> These socio-economic challenges have contributed to substance abuse, domestic violence, crowding, and generational welfare.
- B. **Education:** The educational level on Moloka`i is uniquely diverse in relation to formal versus place-based education when compared to the rest of the State. While some youth pursue higher education and are able to live and work on Moloka`i, many do not obtain post-high school education, or choose not to return to the island after college. This creates community impacts that affect the economic vitality of Moloka`i.
- C. **Water:** The Moloka`i community has long recognized the need for careful management of groundwater resources and watershed areas that contribute to recharge of the island's sole source aquifer, *Uwe kalani, ola ka honua*<sup>3</sup>. When the heavens weep, the land lives. These water resources are required to support natural ecosystems as well as the many economic, cultural, and subsistence activities of our human population. The numerous studies by USGS and legal case conclusions document that current and future demand exceeds sustainable supply

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<sup>2</sup> John M. Knox & Associates, Inc. (December 2010). *Moloka`i Economic Development Issue Paper*.

<sup>3</sup> Mele no ka Wai a Kane. Traditional.

at this time<sup>4</sup>. Future water use and development will likely call for increasing the efficiency of storage and distribution infrastructure, cooperative monitoring strategies, and community wide conservation efforts to ensure aquifer sustainability and water quality. Excess withdrawal from wells may significantly affect freshwater discharge into streams, which may have a detrimental effect on natural, cultural, and subsistence resources.

**D. Transportation:** As one of the least populated islands in the most isolated island chain in the world, Moloka`i suffers from expensive transportation costs for freight, goods, and people. Limited freight transportation to and from the island contributes to higher costs for groceries, fuel, and other goods, and complicates the export of Moloka`i produce. Limited airline and discontinued ferry transportation options impact both the ability of tourists to visit the island and opportunities for residents to travel off island.

**E. Energy Costs:** Moloka`i faces some of the highest electricity costs in the nation, which presents challenges for businesses and residents.

**F. Erosion and Sedimentation:** Erosion is an issue on Moloka`i that is negatively impacting soils, streams, fishponds, wetlands, coastal waters, and reefs, as well as the cultural and subsistence practices that rely on these resources. While erosion is being actively addressed by several organizations and partnerships, continued work is needed to address this problem. Erosion is caused by runoff and land use activities including ranching, farming, and development, as well as forest damage caused by feral ungulates. Siltation of Moloka`i's reefs and coastal waters is having detrimental effects on fish, limu, and other ocean resources which the Moloka`i community depends on for subsistence fishing and gathering, and for cultural practices.

**G. Housing:** The availability of workforce housing, ownership and rental, and the variety of housing types on the island are limited. There is a lack of fully entitled land to build new housing in locations conducive to workforce housing. There is a limited variety of housing types available to meet the needs of Moloka`i residents. However, the recent

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<sup>4</sup> Stearns, Harold T. and MacDonald, Gordon A. (1947). *Geology and Groundwater Resources of the Island of Molokai, Hawaii*. USGS Bulletin 11.

Lindgren, Waldemar (1903). *The Water Resource of Molokai Hawaiian Islands*. USGS Water Supply Paper No. 77.

Kuku`i CCH-M097-1 (2000). *In the Matter of the Contested Case Hearing on the Water Use Permit Application filed by Kuku`i(Moloka`i), Inc. Findings of Fact*. DLNR/CWRM.

lifting of a moratorium on the subdivision of agricultural homestead lots will allow some families to move from other areas of Moloka`i to Ho`olehua, thus freeing up some housing.

- H. Climate Change:** Climate change will become increasingly serious before the middle of the 21<sup>st</sup> century and will impact Moloka`i's economy, built environment, historic and cultural resources, infrastructure systems, ecosystems, and natural resources.
- I. Communications Infrastructure:** Limited access to high-speed internet and cellular/mobile telephone service presents challenges for education, health care, residents, and businesses.
- J. Governance:** Due to political, demographic, and district designations, Moloka`i is not able to have a real voice in its own future.

## OPPORTUNITIES

- A. Strong Caring Community:** Moloka`i is a special place with a distinctly rural Hawaiian lifestyle. Unlike many other places, residents still help each other without expecting reciprocation. The island's interdependence has allowed residents to survive stressful times and events. There is an abundance of community luau and a significant number of extended families living together or near each other. There is a feeling of sharing, belonging, and community which that should be preserved.
- B. Cultural Resources and Traditions:** *Moloka`i nui a hina. `Āina momona. Pule o`o. Moloka`i no ka heke.* Moloka`i has an abundance of cultural and archaeological resources and a community with a strong connection to cultural traditions and practices that must be protected and that provide a solid foundation for the future. In oral tradition, the island is purported to be the birthplace of hula. Moloka`i has numerous sites distributed throughout the island on the Hawai`i and/or National Register of Historic Places. As a result, development of a new model of sustainable tourism may be a possibility for economic growth. This alternative approach, described in *Moloka`i Responsible Tourism Initiative: A Community-based Visitor Plan for Moloka`i, for Ke `Aupuni Lokahi-Moloka`i*<sup>5</sup>, is based on the distinctive characteristics and attributes of the island.

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<sup>5</sup> McGregor, Davianna Pomaikai, PhD (2006). *Moloka`i Responsible Tourism Initiative – A Community Based Visitor Plan for Moloka`i*.  
Chapter 1 Introduction

- C. Distinctive Rural Character:** Moloka`i's natural beauty and rural character are key assets of the island. Unlike other islands in the State, Moloka`i's beaches are still generally accessible and uncrowded. In addition, the rural character and genuine sense of aloha is a draw for many visitors, affording an experience that is different from other islands. Based on several community workshops and interviews, it is clear that a slow and cautious approach to future development on the island is preferred by many to retain Moloka`i's distinctive rural character.
- D. Entrepreneurial Spirit:** Many Moloka`i residents live there because they value the sense of community and lifestyle of the island. Since employment opportunities on Moloka`i are limited, many residents have turned to starting and running their own businesses. This is evident in Kaunakakai, where almost all of the businesses are owned by local residents, some of whom have successfully maintained their operations for several decades.
- E. Community Environmental Restoration:** There are various ongoing programs and partnerships to restore Moloka`i's watersheds and ecosystems. Environmental restoration is an opportunity for the community, youth, large landowners, and government agencies to share common goals of restoring and protecting Moloka`i's environment. Working together will not only accelerate environmental restoration, but will also help build trust between different groups, foster a sense of stewardship responsibility, and expose youth to careers in environmental restoration.
- F. Natural Environment:** Moloka`i's natural environment offers many opportunities to move toward a more sustainable future. With abundant agricultural lands, a year-round growing season, and, with prioritization of agriculture, an adequate supply of water, Moloka`i has the capacity to grow produce for on-island consumption and exportation. Subsistence resources are relatively abundant and support an integral component of the Moloka`i lifestyle. Additionally, numerous opportunities exist to produce renewable energy on the island.
- G. Subsistence Economy:** Subsistence is Moloka`i's second economy. According to the Governor's *Moloka`i Subsistence Task Force Final Report* (June 1994), one quarter of the food acquired by Moloka`i residents comes from subsistence. The establishment of community-based subsistence fishing areas should be supported.



**H. Youth:** New programs for youth related to science and technology.

## 2 | MOLOKA`I'S FUTURE

This chapter provides the Plan's vision and strategic framework that guide the key policies and actions needed to address the major issues that face the island in the next 20 years. The components of this strategic framework include:

- 2.1 Moloka`i Vision Statement.
- 2.2 Population Growth Forecast.
- 2.3 Sustainability and Climate Change Adaptation.

The Moloka`i vision statement, retained from the 2001 Community Plan, articulates the community's belief in who and what it is, what it wants to become, and how to achieve that vision.

The population discussion in Section 2.2 presents a brief analysis of past and future population trends. The *Socio-Economic Forecast Report*<sup>6</sup>, produced by the County of Maui PD, is the primary source of data for this discussion.

Finally, in response to the State of Hawai`i's adoption of the 2011 priority guidelines and principles to promote sustainability and the 2012 climate change adaptation priority guidelines, Section 2.3 discusses how climate change adaptation strategies and measures to develop a more sustainable island community are woven into the Plan.

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<sup>6</sup> County of Maui, Department of Planning. Socio-Economic Forecast Report. September 2014.

## 2.1 MOLOKA`I'S VISION STATEMENT

### **Vision Statement**

Moloka`i is the last Hawaiian Island. We who live here choose not to be strangers in our own land. The values of aloha `āina and malama `āina (love and care for the land) guide our stewardship of Moloka`i's natural resources, which nourish our families both physically and spiritually. We live by our kūpuna's (elders) historic legacy of pule o`o (powerful prayer).

We honor our island's Hawaiian cultural heritage, no matter what our ethnicity, and that culture is practiced in our everyday lives. Our true wealth is measured by the extent of our generosity. We envision strong `ohana (families) who steadfastly preserve, protect, and perpetuate these core Hawaiian values. We are a wise and caring community that takes pride in its resourcefulness, self-sufficiency and resiliency, and is firmly in charge of Moloka`i's resources and destiny.

We envision a Moloka`i that leaves for its children a visible legacy: an island momona (abundant) with natural and cultural resources, people who kokua (help) and look after one another, and a community that strives to build an even better future on the pa`a (firm) foundation left to us by those whose iwi (bones) guard our land.

## 2.2 POPULATION GROWTH FORECAST

Population growth can have both positive and negative impacts on a community. It can exacerbate infrastructure capacity deficiencies, place additional demands on natural resources, shift the cultural and social makeup of the population, and change the physical landscape. Population growth can also contribute to the quality of life of a community by stimulating the economy, growing the tax base, providing employment opportunities, and providing economies of scale. The Plan aims to address community needs and provide economic opportunities to keep Moloka`i's families on the island. It is intended to manage future resident and visitor population growth so that the island's natural resources, infrastructure, and services are not compromised.

Population change on Moloka`i in the coming decades will occur through natural population growth (live births minus deaths), in-migration, and out-migration. While the island experienced a moderate population decline from 2000 to 2010, the population is forecasted to moderately increase during the Plan's 20-year planning horizon (2015 – 2035), according to the State of Hawai`i Department of Business, Economic Development and Tourism (DBEDT).

### A. HISTORIC TRENDS AND POPULATION FORECAST

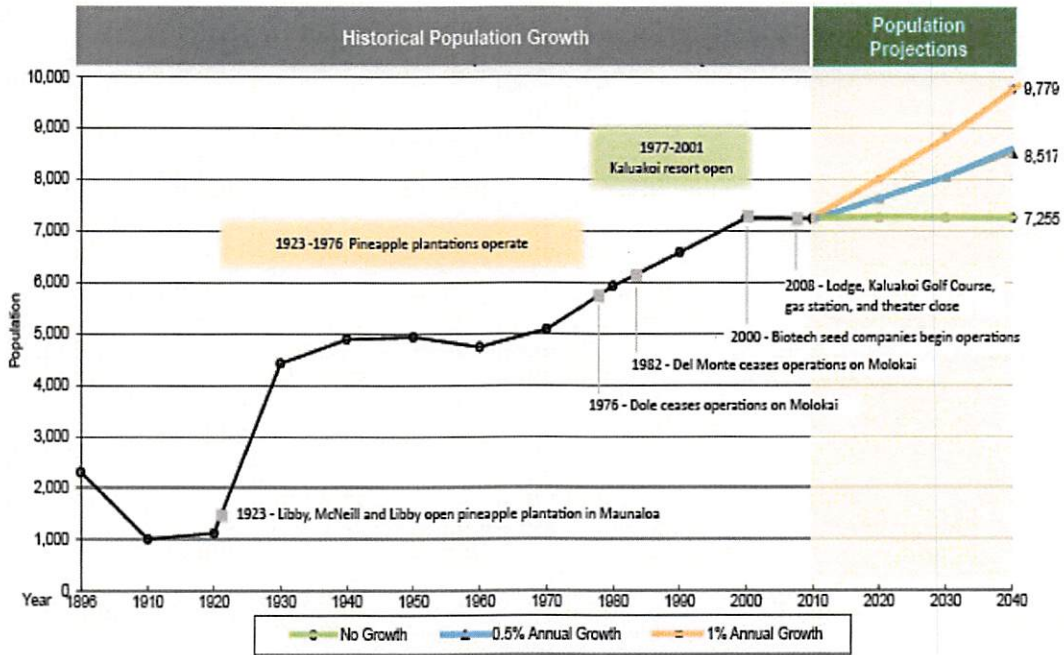
The 2014 County of Maui *Socio-Economic Forecast Report*<sup>7</sup> is a planning tool based on projections developed by DBEDT. The population projections are based on trends and model assumptions, absent policy changes or directives. The population growth forecast provides a starting point for discussions about the island's future.

The 2010 Census counted 7,255 residents living on Moloka`i. The *Socio-Economic Forecast Report* estimated that a 1 percent annual increase in resident population would add about 2,500 residents to the island by the year 2040, for a total population of around 9,800. Figure 2.1 depicts Moloka`i's historic population growth and identifies significant economic events between 1896 and 2010. It also shows population projections to 2040 based on three scenarios: (1) no growth; (2) a mid-range annual growth of ½ percent; and (3) a higher annual growth of 1 percent.

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<sup>7</sup> County of Maui, Department of Planning. *Socio-Economic Forecast Report*. September 2014.

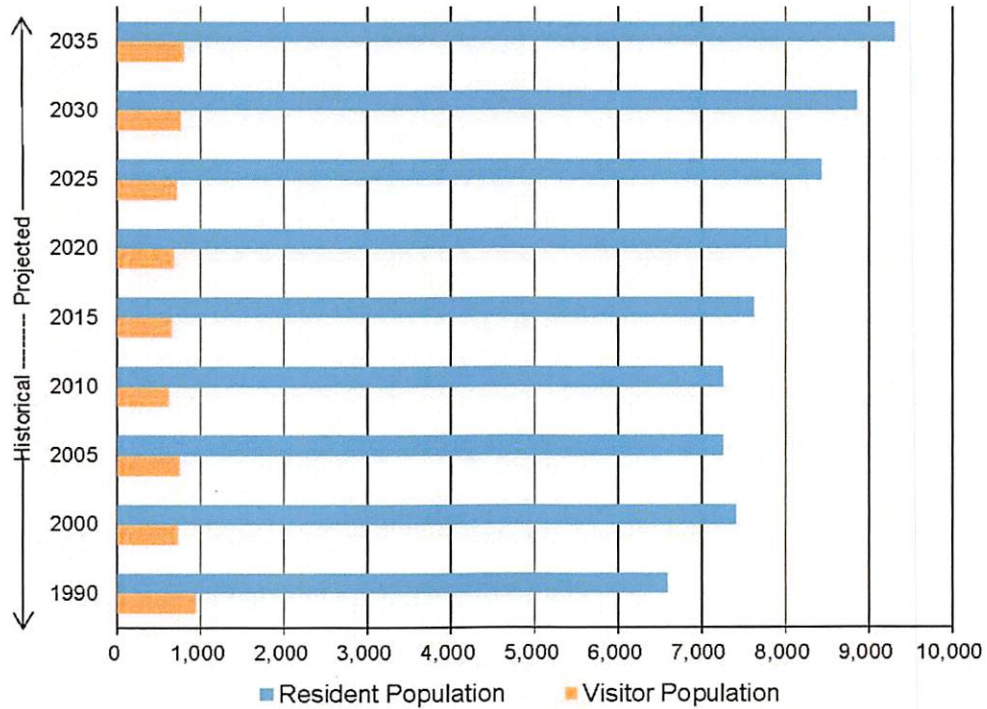
**Figure 2.1 Historical and Forecasted Moloka'i Resident Population 1896-2040<sup>8</sup>**



<sup>8</sup> Hawai'i State Department of Business, Economic Development and Tourism (2012). *Population and Economic Projections for the State of Hawai'i to 2040*. Honolulu, HI. Chapter 2 Moloka'i's Future

Figure 2.2 depicts the historical and forecasted average daily resident and visitor population from 1990 to 2035. In 1990, the ratio of tourists to residents was approximately 1 to 7. By 2010, the ratio dropped to approximately one visitor for every 12 residents; this ratio is forecasted to remain relatively unchanged through 2035.

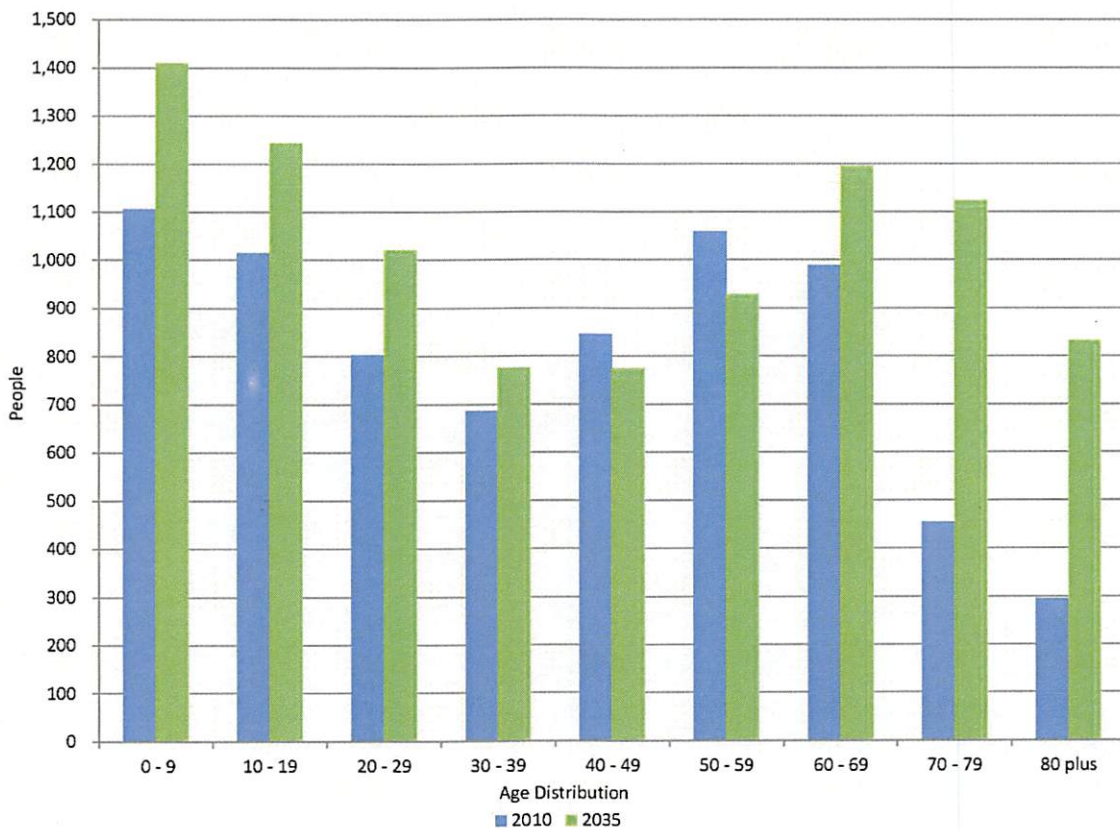
**Figure 2. 2 Historical and Forecasted Moloka'i Average Daily Resident & Visitor Population 1990-2035<sup>9</sup>**



<sup>9</sup> Ibid.  
Chapter 2 Moloka'i's Future

Figure 2.3 portrays Moloka`i’s historical and forecasted age distribution from 2010 to 2035. It is clearly evident that the island’s population is aging. The 70 plus age group is forecasted to grow from about 750 to nearly 2,000; an increase of over 160 percent between 2010 and 2035. This demographic change has significant impacts to public services as they relate to the elderly, including housing, transportation, health care, and eldercare services. In addition to the challenge of providing more senior services, the wage-earning population that typically supports children and seniors will be proportionally smaller. The potential issues and opportunities presented by population growth will be addressed throughout the various chapters of the Plan.

**Figure 2. 3 Historical and Forecasted Moloka`i Age Distribution – 2010 and 2035<sup>10</sup>**



<sup>10</sup> Ibid.  
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## **2.3 SUSTAINABILITY AND CLIMATE CHANGE ADAPTION**

One intent of this Plan update is to help establish a sustainable and resilient future for Moloka`i. This section provides an introduction and brief guide on how sustainability and climate change adaptation are woven into the Plan through a variety of policies and actions.

### **A. SUSTAINABILITY**

Sustainability has become a fundamental concept within comprehensive and community planning over the past decade. It refers to the ability to meet present needs without compromising the ability of future generations to meet their needs. It requires a consideration of long-term environmental, social, cultural, subsistence, and economic costs of present day actions. Sustainability is a process rather than an end state. Communities function within a system where environmental, economic, and social systems are linked and balanced.

Sustainability is particularly important in a region as fragile and remote as the Hawaiian Islands. In 2011, the Hawai`i State Legislature established sustainability as a State priority by adopting priority guidelines and principles to promote Section 226-108, HRS, *Sustainability*, into the Hawai`i State Planning Act. Updates to the County of Maui's General Plan will integrate the concept of sustainability and these guiding principles (see Appendix 2.1 Definition of Sustainability in Hawai`i and Appendix 2.2 Sustainability).

### **B. CLIMATE CHANGE ADAPTATION**

In 2012, the Hawai`i State Legislature adopted Section 226-109, HRS, relating to climate change adaptation priority guidelines (see Appendix 2.3 Climate Change Adaptation Priority Guidelines). The guidelines are intended to prepare the State for climate change impacts on the natural and built environment and on society. Near-term implementation options and long-term strategies should be considered. Additionally, under the *Hawai`i State Planning Act*, priority guidelines shall take precedence when addressing areas of concern, such as county decision making, allocation of resources, county general plans, development plans capital improvement project appropriations, and land-use decision making.

Climate change will become increasingly serious before the middle of the 21st century and will have profound impacts on Hawai`i's natural environment,



communities, and economy. Major climate change effects forecasted for Hawai`i include:

- Warmer temperatures.
- Sea level rise (SLR) with resultant flooding, beach erosion, and damage to coastal property.
- Sea surface temperature increase and ocean acidification with negative impacts to coastal and marine ecosystems.
- Increased frequency and severity of storms, and increased vulnerability to storm damage.
- Increased drought with variable effects on aquifer recharge, stream flows, and freshwater resources.

These outcomes will adversely affect areas of the economy, including agriculture, tourism, fisheries, and trade; the built environment, including infrastructure systems, housing, and recreation; historic and cultural resources; as well as ecosystems and natural resources<sup>11</sup>.

Limitations in downscaling of climate models make long-term predictions for local impacts very complex. However, current observations of trends, such as declining rainfall, increased temperatures, and sea level rise can serve as indicators to help inform communities as they begin to plan for climate change.

Climate change mitigation measures, such as lessening our dependence on fossil fuels to reduce emissions and changing the way the County designs and builds communities, will need to be implemented to lessen the human impact on climate. Climate change adaptation requires strategies and actions to reduce the vulnerability of biological systems. By acting now, it is possible to reduce potential damage in the future. Science-based coastal and climate hazard information must be compiled, understood, and appropriately applied to specific planning areas on Moloka`i. Inventories must be developed, and gaps in data identified, to better understand how climate change will affect Moloka`i and how to minimize those impacts.

### **C. WORKING TOGETHER TOWARD A SUSTAINABLE AND RESILIENT MOLOKA`I**

This is a pivotal moment in time for Moloka`i to face the intertwined challenges of sustainability and climate change. In recognizing the links

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<sup>11</sup> *Climate Change Adaptation Priority Guidelines, Act 286.*  
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between society, the environment, and the economy, sustainability acknowledges the ecological limits of natural systems and affirms that humanity's wellbeing is fundamentally dependent on the health of our environment. Moloka`i can become resilient and ready for change by strengthening its society, its natural and built environment, and by diversifying its economy. How these elements work together is described below:

**Society – Moloka`i's People and Culture:** Caring for the people is a key component of ensuring an abundant and resilient Moloka`i. This will involve providing educational opportunities for all ages and a full spectrum of social services. It will also be important to foster community participation in stewardship of the natural environment and historical and cultural resources. It will be crucial to build collaboration between different levels of government, large landowners, nonprofit organizations, private businesses, and the community. Moloka`i's culture and sense of place will be honored by protecting historic and archaeological sites, cultural landscapes, and the natural and cultural resources upon which subsistence and traditional Hawaiian lifestyles depend.

Ensuring a resilient and abundant society will also require providing a variety of affordable housing types for all stages and ages of life. Also critical will be increasing food security through expanding production of locally grown food, supporting subsistence farming, hunting, fishing, and gathering, as well as introducing Moloka`i's youth to agriculture through programs such as Future Farmers of America and 4H.

**The Natural and Built Environment:** How the built environment is designed greatly influences the protection and sustainability of the natural environment and the sustainability of a society and culture. A well-designed and engineered community is economically efficient when characterized by a compact and pedestrian oriented mix of land uses, multi-modal transportation networks, and diversity of housing types. It should provide a strong sense of place and culture, and preserve open space, agricultural land, and natural resources.

Moloka`i will build upon its historic small-town development patterns, integrate land use and transportation planning, and make development decisions predictable, fair and cost-effective to create sustainable communities into the future.

Climate change adaptation strategies, such as building on existing hazard mitigation principles and developing new ways of designing communities and

Chapter 2 Moloka`i's Future

infrastructure, will also be necessary for the health and safety of the people and the environment. This will be achieved by actions such as relocating critical structures out of hazard-prone areas, incremental adaptation of harbors, increasing water conservation and reuse, and managing aquifer recharge areas.

Natural resources and landscape features, such as native forests, valleys, wetlands, springs, dunes, and coral reefs will be protected, and restoration should be encouraged; they should be valued for the environmental services they provide and for their cultural importance. Negative and adverse impacts of feral ungulates and invasive species shall be managed, while simultaneously recognizing Native Hawaiian access and gathering rights, and the importance of subsistence activities.

Principles of Native Hawaiian land management, including ahupua`a, will be integrated to help guide resource management. Green technology, sustainable building practices, and green infrastructure solutions will also be implemented.

**The Economy:** Fostering a robust and diversified economy is the third component to working toward an abundant and resilient Moloka`i. This will require growing a culturally-appropriate tourism industry, supporting agriculture, encouraging new industries and entrepreneurs, expanding education and support services for small businesses, and providing necessary infrastructure, land, and affordable sea and air transportation options. An important aspect of improving Moloka`i's economy is lowering the costs of water distribution by efficiently managing energy through the establishment of a strategic integrated management approach to supply water and energy more efficiently. This can be achieved by increasing the use of renewable energy sources and vehicles powered by renewable energy. Water resources can be used in a sustainable manner by recycling wastewater for irrigation and the reuse of household graywater.

### **3 | NATURAL, HERITAGE, AND SCENIC RESOURCES**

This chapter discusses ecosystems and natural resources in section 3.1; heritage resources, including the interface of the natural environment with human built structures and activities in section 3.2; and scenic resources that shape our experience of place every day in Section 3.3. The elements discussed in this chapter are fundamental to sustaining the quality of life enjoyed by Moloka`i residents and are essential for supporting the living cultural traditions of Native Hawaiians. Subsequent chapters discuss impacts from multiple natural and human-created hazards, including climate change, land use, and community design that need to be considered in combination with the elements of this chapter.

Mana`e is the heart and life source of Moloka`i. The larger Moloka`i community identifies Mana`e as a pu`uhonua (safe refuge). Mana`e traditionally sustained the highest population on the island and contained the oldest settlement sites, dating back to 450 A.D., showing that Mana`e is where our ancestors first settled. It has the most critical natural resources, including water. It is made up of four major valleys with between 3-5 million gallons of pristine rivers/waters flowing through these valleys every day, feeding the rich estuaries and near shore fisheries, in addition to the multitude of intact terraces. In addition, Mana`e's abundance of water on the north shore finds its way to the south shore through underground tunnel systems and springs, providing for the ideal ecological conditions that supported numerous fishponds along Mana`e's south shore. This is the value of Mana`e, the land of `āina momona (abundance). Thus, it is critical to protect Mana`e as a special place for all of Moloka`i as a pu`uhonua, cultural kipuka, (a rural area that serves as a living repository of Hawaiian traditional knowledge, understandings, and practices), and a place essential to `āina momona (continued food and water security) for its abundant fishponds, lo`i kalo (taro patches), rich forests, streams, and springs.

### 3.1 NATURAL RESOURCES

Moloka`i's pre-human diverse ecosystems were extensively altered by human settlement beginning with the arrival of the Polynesians, continuing through the plantation era and into present day. The most significant changes were the result of clearing of forest lands for agriculture and building sites and the introduction of non-native flora and fauna. Many hoofed animals initially introduced as free-range, eventually became wild. These feral ungulates destroyed the forest understory and tree roots, setting off a chain of environmental damage that extended from the upslope area to the nearshore ecosystem. Erosion created barren land where invasive plants became established, resulting in native species loss, reduced water recharge of the aquifer, decreased bio-diversity, and a less resilient forest ecosystem. Excessive erosion also resulted in sedimentation of surface waters and coral reefs, and led to progressive propagation of invasive plants, such as mangroves and gorilla ogo, which threatened coral reefs and coastal ecosystems along Moloka`i's south shore.

The forest ecosystem greatly influences many elements of the Moloka`i community's natural and heritage resources, recreation, agriculture, tourism, infrastructure, and economic viability. Recent studies have calculated financial values for services provided by forest ecosystems.<sup>12</sup> (See Appendix 3.1)

According to the Conservation Alliance-ING Direct:

A University of Hawai`i study examined the various services provided by Ko`olau O`ahu's forests - including water recharge, water quality, climate control, biodiversity, and cultural, aesthetic, recreational, and commercial values. These services were calculated to have a net present value of between \$7.4 and \$14 billion. Approximately half of that amount is attributed to the forest's contribution to ground and surface water quality and quantity. Other watersheds across the state were estimated to be comparable in value.<sup>13</sup>

Protection and restoration of Moloka`i's forest ecosystems will help to ensure an abundant water supply; it will reduce erosion, surface water runoff,

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<sup>12</sup> State of Hawaii (2011). *The Rain Follows the Forest*. Department of Land and Natural Resources.

<sup>13</sup> State of Hawaii (2011). *The Rain Follows the Forest*. Department of Land and Natural Resources, Pg.4.

flooding, sedimentation that fills ancient coastal fishponds, and siltation of reefs and ocean waters.

Development may disrupt the natural processes of ecosystems and may increase non-point pollutants in surface water runoff. Most development occurs in coastal areas; nonpoint source pollutants from homes, businesses, farming and industry in coastal areas can decrease water quality and reef health. Modern building techniques that integrate development into the landscape can reduce the impact on water quality, animal and plant habitats, and ecosystem connectivity. *Green infrastructure* uses natural systems, constructed soil, rock, or plant-based systems for surface and storm water management. In 2013, Maui County strengthened storm water regulations by requiring on-site retention of site runoff for new development.

## A. EXISTING CONDITIONS

Moloka`i's largest native forest ecosystem is located in the East Moloka`i mountains that contain deep, mostly inaccessible valleys with high-quality habitat for stream fauna, forest birds, native snails, and insects. Moloka`i's other significant habitats are lava tube caves, montane bogs, wet forests and shrublands, cliff and coastal systems, and nine offshore islets. These natural ecosystems provide recovery, or critical habitat identified by the U.S. Fish and Wildlife Service for 79 endangered and 3 threatened terrestrial species, and 11 endangered and 2 threatened marine species, including the Maui parrotbill, `ākohekohe (crested honeycreeper), and Blackburn's sphinx moth.<sup>14</sup>

Approximately 30 percent of Moloka`i is in the State Conservation District, which is under the jurisdiction of the Department of Land and Natural Resources (DLNR). Most areas dominated by native species are in mountains or along the coasts (see Map 3.1). Numerous Federal, State, and county plans and regulations support actions to protect, conserve, or restore the natural resources of these areas. Partnerships between agencies, nonprofit organizations, community groups, and stakeholders have been formed, but there is a need to expand both partnerships and collaboration to more effectively address the complexity and scope of environmental issues.

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<sup>14</sup> U.S. Fish and Wildlife Service Endangered Species Database, May 2015; <http://www.fws.gov/endangered/>.

*Hawai`i's Comprehensive Wildlife Conservation Strategy* identified key management areas and the parties responsible for managing them.<sup>15</sup> Although there has been extensive conservation work accomplished to date, the State has identified additional threatened areas that need to be protected, such as cave ecosystems, coastal wetlands and shorelines, and stream corridors. Key threats to these areas include feral ungulates, predators, invasive species, and human intrusion. Often when addressing one threat, another threat can be reduced. For example, forest restoration is being addressed by multiple management actions by many partners, including abatement of feral ungulates. Once feral ungulates cease to disturb the soil, the native forest can regenerate in small areas, which reduces the area for invasive plant species to establish and reduces subsequent soil erosion, deposition in nearshore waters, and siltation of coral reefs.

Hawai`i State plans, such as the *Coastal Non-Point Pollution Control Program*<sup>16</sup>, the *Hawai`i Implementation Plan for Polluted Runoff Control*<sup>17</sup>, and the *Ocean Resource Management Plan*<sup>18</sup>, are addressing comprehensive ecosystem management by connecting upland land-based activities to ocean resource conditions. Excessive sediment, and other non-point pollutants such as nutrients, herbicides, and heavy metals, are being addressed by multiple efforts (see Map 3.2). Hawai`i's "Local Action Strategy" has partner agencies addressing land-based pollution threats to reefs in the Kawela watershed. Best Management Practices (BMPs) for control of feral ungulates and wildfire are being extended to other areas and sediment retention basins will be constructed and maintained along the south shore. The USDA Natural Resources Conservation Service (NRCS) implements many soil conservation projects on Moloka`i using the Farm Bill's Environmental Quality Incentives Program and other landowner assistance programs. More programs need to be implemented to manage erosion and runoff, such as implementation of green infrastructure strategies that use grass swales, grass waterways, vegetated terraces, berms, and retention systems.

Restoration of wetlands and riparian areas can play a vital role in reducing polluted runoff by intercepting surface runoff, subsurface flow, and certain groundwater flows. Moloka`i community groups, nonprofit organizations, and schools are actively restoring lo`i kalo (taro patches) and `auwai (irrigation ditches) that reduce and filter sediment loads. At Kawaikapu Preserve, the Moloka`i Land Trust plans to use the ahupua`a management

<sup>15</sup> *Hawai`i's Comprehensive Wildlife Conservation Strategy*. (2005) Department of Land and Natural Resources. Honolulu, Hawai`i.

<sup>16</sup> State of Hawaii (1996). *Coastal Nonpoint Pollution Control Program*, 2010 Update.

<sup>17</sup> State of Hawaii (2000). *Hawai`i Implementation Plan for Polluted Runoff Control*.

<sup>18</sup> State of Hawaii (2013). *Ocean Resources Management Plan*.

system to restore lands, including ancient taro fields. In Hālawā Valley, restoration of taro fields, which once measured in the hundreds of acres, is ongoing.

The Ocean Resource Management Plan emphasizes links between human activities and the environment, and the need for increased stewardship<sup>19</sup>, which usually begins with awareness of a connection between one's activities and an environmental issue. A survey of Hawai`i residents about coral reef management priorities found a high level of public awareness of the decline of reef health, but little knowledge of how their personal land-based behaviors contribute to that decline, or how to minimize damaging activities to help the reefs.<sup>20</sup> Public environmental education and involvement activities available on the island of Moloka`i contribute to building a volunteer base for on-going stewardship. Some nonprofit organizations use volunteer monitoring, based on Best Management Practices (BMPs), to build stewardship. Involvement in volunteer monitoring and citizen science raises awareness, creates stakeholders, and increases science literacy within the community.

The Hawaiian Islands Humpback Whale National Marine Sanctuary includes ocean waters adjacent to Moloka`i's southern, western, and eastern shorelines. The Sanctuary also encompasses the ocean channels between Moloka`i, Lāna`i, and Maui, as well as an extensive ocean area off Moloka`i's west shore (see Map 3.1). Created by the U.S. Congress in 1992, the Sanctuary protects humpback whales and their habit. It constitutes one of the world's most important humpback whale habitats. The National Oceanic and Atmospheric Administration (NOAA) Office of National Marine Sanctuaries and DLNR jointly manage the Sanctuary.

Water runoff with excessive sediment and pollutants, recreational over-use, and commercial over-fishing are primary threats to the health of reefs and fisheries. The DLNR's Division of Aquatic Resources manages four areas to protect ocean fishery resources near Moloka`i. The Kaunakakai Harbor Fishery Management Area restricts the fishing season, harvest methods, and fishing areas. Bottomfish Restricted Fishing Areas (BRFA) are located in two open ocean areas between the southeast end of Moloka`i and Maui, and far offshore from the southwest point. A third BRFA is located along the shoreline off the northeast side of Kalaupāpā, National Historic Park, extending eastward in the nearshore waters along Moloka`i's north shore. The BRFAs are co-managed by the DLNR and National Marine Fishery Service (NMFS), a division of NOAA.

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<sup>19</sup> Ibid.

<sup>20</sup> NOAA (2010). *Hawaii Coastal Zone Management Program, Final Evaluation of Findings*. Office of Ocean and Coastal Resource Management. Chapter 3 Natural, Heritage, and Scenic Resources



The Mokia Preserve is a 1,718-acre parcel located in northwest Moloka`i owned and managed by the Moloka`i Land Trust (MLT), with five miles of coastline, dunes, and wetland ecosystems. East of Mokia is the Mo`omomi Preserve, consisting of 921 acres of the most intact coastal beach strand and sand dune area in the main Hawaiian Islands. It is owned and managed by the Nature Conservancy with MLT and other partners assisting with stewardship activities.

About 85-90 percent of Hawai`i's food is imported, which makes the community particularly vulnerable to natural disasters and global events. It is estimated that there is less than a one-week supply of food stored on each island. The State of Hawai`i's *Increased Food Security and Food Self-Sufficiency Strategy*<sup>21</sup> seeks to increase the amount of locally grown food consumed by Hawai`i residents. This will increase food self-sufficiency, which is a component of food security. Since the 1970s, Hawai`i has become less self-sufficient in eggs, milk, livestock, hogs, and pigs.

Moloka`i imports most of its food, including important proteins like dairy, chickens, and eggs. Moloka`i does well in production of key foods such as starches, `uala (sweet potato), kalo (taro), and `ulu (breadfruit), but has lower production in fruits and vegetables. Many Moloka`i residents rely on hunting and fishing for a significant portion of protein foods. With an increase of fishing and hunting by off-island residents there has been a decline in numbers and sizes of many desirable fish and crustaceans. This is a concern from both a cultural and food security perspective.

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<sup>21</sup> Hawaii Office of Planning, Department of Business, Economic Development, and Tourism; and Hawaii Department of Agriculture. 2012. *Increased Food Security and Food Self-Sufficiency Strategy*. [http://files.hawaii.gov/dbedt/op/spb/INCREASED\\_FOOD\\_SECURITY\\_AND\\_FOOD\\_SELF\\_SUFFICIENCY\\_STRATEGY.pdf](http://files.hawaii.gov/dbedt/op/spb/INCREASED_FOOD_SECURITY_AND_FOOD_SELF_SUFFICIENCY_STRATEGY.pdf).

### **Climate Change and Natural Resources**

The observed effects of climate change on natural resources will continue to challenge the health of ecosystems on Moloka`i. Increased frequency and severity of climate-related disturbances, such as storms, flooding, drought, wildfire, invasive species, and ocean acidification, combined with increased effects of human, land, and natural resource use will test the resiliency of Moloka`i.

Marine ecosystems, coral reefs, and nearshore habitats are experiencing increasing sea surface temperatures, leading to thermal stress and coral bleaching. SLR and coastal inundation will change the nearshore environment, including habitat loss and shifts. This will be amplified by accelerated SLR and changes in storm and cyclone patterns, which will increase wave energy and erosion patterns.

Terrestrial ecosystems are experiencing warming air temperatures, which may cause ecosystems to shift upslope or decline in size. Higher elevations may experience an even greater degree of change. Variations in precipitation patterns could affect terrestrial ecosystems through increases in flooding, erosion, drought, and fire. As the extent of native habitats diminishes, the range for pests, diseases, and invasive species may expand.

## **B. ISSUES**

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- Issue 1:** Ecosystems are declining due to an increase in invasive animal and plant species, soil erosion, coastal deposition, and human effects.
- Issue 2:** Excessive sediment from erosion and coastal deposition severely impact coastal water quality and the health of all marine life.
- Issue 3:** Cumulative impacts to surface and coastal waters from pollutants including sediment, home and business chemicals, herbicides, and fertilizers are not well understood by many in the community.
- Issue 4:** Climate change will stress and change ecosystems with some ecosystems declining, while some may adapt successfully.

Issue 5: The coral reefs and loko i`a (fishponds) ecosystems along Moloka`i's south shore are being threatened by the progressive propagation of invasive plant species such as mangroves and gorilla ogo. These species retain sediment, causing poor water quality, over grazing, mono cropping, and excessive pesticide and fertilizer use.

Issue 6: Food security.

Issue 7: The ecological impacts to the Kaunakakai Wharf have not been fully mitigated and are an ongoing concern.

### **C. GOAL, POLICIES, ACTIONS**

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**Goal**            **Preserve, protect, and manage Moloka`i's exceptional natural land and water resources to ensure that future generations may continue to enjoy and protect the island environment.**

#### **Policies**

1. Ensure collaboration and partnerships for natural resource management, watershed planning, funding, and action implementation.
2. Encourage implementation of State plans and programs for comprehensive ecosystem management.
3. Encourage protection and restoration of the biodiversity of native plant and animal terrestrial, freshwater, and marine species and habitats through land conservation, resource management, education, invasive species prevention and control, wild fire prevention, and stewardship.
4. Require all grading and grubbing permits on Moloka`i to comply with Title 20, Chapter 20.08, MCC.
5. Ensure the design and construction of new development protect surface water, groundwater, and coastal water quality from nonpoint and point source pollution.

6. Encourage low impact development education programs, including green infrastructure for designers, developers, and builders.
7. Support a significant increase in public outreach, education, and involvement events to build community-based stewardship and implementation capacity.
8. Recognize and support sustainable agricultural, forestry, and game best management practices, and sustainable subsistence fishery management, as key elements to maintain, preserve, and protect Moloka`i's land, water and marine resources.
9. Encourage and support the establishment and expansion of native plant communities by utilizing appropriate practices and techniques for propagation and planting.
10. Encourage implementation and adequate funding for the Hawaii Department of Agriculture's Plant Quarantine Program on Moloka`i.
11. Encourage food security through programs and activities to increase the amount of locally grown food in agriculture, permaculture, agroforestry, aquaponics, and traditional Hawaiian farming systems.
12. Encourage adequate funding for ecosystem protection and restoration.
13. Support development of game, fishery, and coastal management areas and management plans.
14. Ensure that watershed protection and other conservation measures, including fencing, facilitate Native Hawaiian access rights related to subsistence activities and traditional and customary practices.
15. Protect and maintain Moloka`i's oceans, beaches, and other recreational areas to ensure a safe environment for recreational and cultural activities.

16. Support traditional ecological knowledge as a tool or resource strategy.
17. Encourage and support research that studies water quality, invasive species, and circulation issues around the Kaunakakai Wharf Road and Small Boat Harbor.
18. Support watershed or ahupua`a-based resource management partnerships.
19. Support State and Federal agencies to collect baseline data on south shore water quality and coral reef conditions.
20. Encourage coordination between landowners and the U.S. Department of Agriculture, Natural Resources Conservation System, to increase infiltration to the aquifer, control surface water runoff, and reduce sediment and nutrient loss from entering surface and coastal waters by constructing small-scale retention, bioretention, or other conservation projects.

**Actions**

<b>Table 3.1 Natural Resources Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
3.1.01	Assist with conferences or workshops of key Federal, State, and local agencies, and community and nonprofit leaders to discuss, plan, and prioritize actions to address environmental and natural resource issues.	OED	PD DWS MLSWCD `Aha Kiole o Moloka`i
3.1.02	Compile GIS data and traditional ecological knowledge to map the highest value ecological areas and natural resources.	PD	DLNR Major landowners NGOs MLSWCD `Aha Kiole o Moloka`i

**Table 3.1 Natural Resources Actions**

No.	Action	Lead County Agency	Partners
3.1.03	Compile GIS data to map primary and secondary groundwater recharge areas to help prioritize protection and restoration efforts.	DWS	CWRM PD USGS `Aha Kiole o Moloka'i
3.1.04	Assist in conducting workshops with stakeholder groups to develop an integrated natural and heritage resources management system, including traditional Hawaiian ecological knowledge.	OED	DLNR – Nā Ala Hele Trail and Access Program NGOs `Aha Kiole o Moloka'i
3.1.05	Assist in conducting or coordinating public education and involvement events to build community-based stewardship and implementation capacity.	OED	DLNR Major landowners NGOs MLSWCD `Aha Kiole o Moloka'i
3.1.06	Assist in the development of a West Moloka'i dry native forest and lowland shrub restoration program.	OED	DLNR Major landowners NGOs MLSWCD `Aha Kiole o Moloka'i
3.1.07	Consult with Moloka'i Education Center to develop and manage a native plant nursery for community restoration projects.	OED	Moloka'i Education Center DLNR MLSWCD NRCS Ho'olehua Plant Materials Center/USDA NGOs Private landowners `Aha Kiole o Moloka'i
3.1.08	Conduct outreach to agricultural, ranching, and development interests to implement BMPs to reduce excess sediment loss, herbicide and pesticide use.	OED	DOH Clean Water Branch CTAHR NRCS MLSWCD `Aha Kiole o Moloka'i

**Table 3.1 Natural Resources Actions**

No.	Action	Lead County Agency	Partners
3.1.09	Encourage appropriate Federal and State agencies to initiate a program to provide education and support for community stewardship of the coastal areas, including conducting baseline studies on coastal water quality and coral reef conditions.	OED	DLNR DOH, Clean Water Branch NGOs NRCS USGS NOAA MLSWCD Large Landowners Agricultural Operations `Aha Kiole o Moloka`i
3.1.10	Develop a toolbox of green infrastructure BMPs and conduct workshops for consultants, designers, developers, and builders.	DPW	State Office of Planning - Greenway Program `Aha Kiole o Moloka`i
3.1.11	Encourage appropriate Federal and State agencies to develop a toolbox of BMPs for use by residents and businesses to improve ecosystem health and water quality in urban and coastal areas. Encourage appropriate Federal and State agencies to provide assistance or workshops on BMPs and education to change business and household practices. Encourage appropriate Federal and State agencies to maintain a website for public education on water quality pollution prevention and BMPs.	DWS	DOH-Clean Water Branch DPW PD DLNR MLSWCD `Aha Kiole o Moloka`i

**Table 3.1 Natural Resources Actions**

No.	Action	Lead County Agency	Partners
3.1.12	Assist with development of a community-based game management plan, including BMPs.	OED	DLNR NRCS Major landowners NGOs MLSWCD `Aha Kiole o Moloka'i
3.1.13	Continue to support organizations that eradicate invasive species.	DWS	OED `Aha Kiole o Moloka'i
3.1.14	Encourage the State to establish a quarantine treatment facility on Moloka'i.	OED	Moloka'i Maui Invasive Species Committee `Aha Kiole o Moloka'i
3.1.15	Assist in developing educational materials to educate visitors, including visitors engaged in hunting and fishing, about the importance of natural and cultural resources to the cultural and subsistence practices of Moloka'i's residents, and how they may prevent damage to these resources.	OED	DLNR OHA Cultural Practitioners NGOs `Aha Kiole o Moloka'i
3.1.16	Work with the State, private landowners, and cultural practitioners to ensure that watershed protection, as well as other conservation measures, provide appropriate access, through fencing and other means, for cultural and subsistence activities.	Environmental Coordinator	DLNR OHA Cultural Practitioners NGOs `Aha Kiole o Moloka'i



### **3.2 HERITAGE RESOURCES**

Throughout Moloka`i's landscape, there is an abundance of archaeological and historic sites and traditional cultural properties that document habitation by ancient Hawaiians and the more recent immigrants and their settlements. Archaeological, historic, and cultural resources combine to express the heritage of the people and place. Today, numerous Native Hawaiian traditional and customary practices, including fishing, gathering, cultivating lo`i, hunting, caring for burials, and accessing sacred and religious sites, continue to be practiced on Moloka`i. The health of Moloka`i's natural and cultural resources, and access to these resources by Native Hawaiian practitioners, mauka to makai, is critical to the perpetuation of Native Hawaiian culture. Many residents practice a subsistence lifestyle, relying upon the island's resources for fishing, hunting, and gathering. The people of Moloka`i are proud of their history, cultural identity, and unique Moloka`i lifestyle, and are determined to uphold and strengthen these qualities for future generations.

Moloka`i is historically significant as a center of Hawaiian culture and learning. It is purported in oral tradition to be the birthplace of the hula and a training ground for powerful priests. Hawaiians have traditionally believed the `āina (land) is their ancestor and that it is their kuleana (responsibility) to search for balance and harmony with nature: the people will take care of the land, and in turn the land will take care of the people. The island's natural resources are intimately connected to the cultural resources and together they provide the foundation for the traditional Hawaiian lifestyle. Until the 1800s, a communal system of land tenure and subsistence enabled ahupua`a tenants to access the land and its resources for subsistence, medicinal, cultural, religious, and other purposes. Even as western concepts of private property were incorporated into Hawaii's land tenure, native tenants retained certain rights and interests in land. By the mid-1800s, Europeans and Americans were established on Moloka`i. At the same time, land tenure in Hawaii was undergoing a significant transformation. During the Māhele (land division), private interests in land were established, but these interests were subject to the rights of native tenants. As the European and American populations increased, the plantation and ranching industries took hold on the island, producing commercial ventures operating throughout the 1800s and 1900s. Several small-scale attempts at sugarcane cultivation were made between 1870 and 1900; however, sugar plantations on Moloka`i did not reach the same level of success as those on neighboring islands.

Beginning in the 1920s, growth in cattle ranching and pineapple plantations influenced growth and development on Moloka`i. Kaunakakai became the

shipping and political center of the island and the home of the Moloka`i Ranch headquarters. In 1923, Libby, McNeill & Libby established a pineapple plantation in Maunaloa. Kualapu`u, originally the location of a small out-station for Moloka`i Ranch, became home to the California Packing Corporation pineapple plantation in 1927.

## **A. EXISTING CONDITIONS**

Moloka`i has hundreds of documented archaeological and historic sites, as well as numerous undocumented sites. West and Central Moloka`i lands have been extensively surveyed, while the East End has not yet been adequately surveyed. Appendix 3.2 provides a reference list of archaeological surveys conducted on Moloka`i, including *Molokai: A Site Survey*, April 1971 by Catherine C. Summers. Moloka`i sites are listed in the State Historic Preservation Division's (SHPD) Statewide Inventory of Historic Properties, and numerous Moloka`i sites have been entered in the Hawaii and/or National Registers of Historic Places. See Map 3.3 which depicts Moloka`i's State Historic Districts, places of interest, and other cultural resources.

Archaeological sites and traditional cultural properties are distributed across the landscape and include both Hawaiian cultural sites as well as areas of more recent use. A traditional cultural property is defined as an area or place "that is eligible for inclusion in the National Register because of its association with cultural practice or beliefs of a living community".<sup>22</sup> Some of Moloka`i's most noted traditional cultural resources include the ancient Hawaiian complexes of Hālawa Valley, the `Ili`ili`ōpai heiau of Mapulehu, the East End fishponds, Kuku`i Lanikaula, the Makahiki Grounds of Nā`iwa, the Hula Piko of Kā`ana Kapuāiwa Coconut Grove, St. Joseph Church, and the R.W. Meyer Sugar Mill of Kala`e. Appendix 3.3 provides a list of cultural sites that the community desires to protect.

Some Moloka`i residents feel there is a lack of awareness and respect for the importance of Moloka`i's cultural and archeological sites by locals and visitors alike, which often leads to intentional or unintentional damage.<sup>23</sup> There is also concern that some sites not formally identified are being damaged or destroyed by unregulated ground altering activities, land development, and all-terrain vehicle use. In addition, neglected archeological sites such as

<sup>22</sup> U.S. Department of the Interior, National Park Service. (1998). *National Register Bulletin* 38.

<sup>23</sup> Chris Hart & Partners, Inc. January 2011. *Cultural Resources Issue Paper*. Prepared for the County of Maui Long-Range Planning Division, Wailuku, HI.

heiau, fishponds, rock walls, and house platforms, are often damaged by negative human activity, animals, or tree roots.

Many of the historic buildings in Kaunakakai remain along the town's main commercial corridor, Ala Malama. However, many wood, plantation vernacular style storefronts have been altered and character-defining features removed. Maunaloa has suffered from wholesale demolition of laborer housing. About 20 years after pineapple operations ceased in the 1970s, approximately 57 of the 200 plantation homes were demolished, and few wood plantation vernacular commercial buildings remain intact. Conversely, the original camp homes at Kualapu`u remain largely intact. Many have been altered, but the majority of the homes retain the character defining features of early twentieth century Hawaiian plantation laborer housing.

Moloka`i's cultural sites are actively used by many in the community for cultural, spiritual, and subsistence purposes and are important to the perpetuation of Hawaiian traditions and cultural practices. According to the *Governor's Moloka`i Subsistence Task Force Final Report*<sup>24</sup>, among the random sample group surveyed, 28 percent of their food is acquired through subsistence activities and 76 percent of respondents ranked subsistence as important to their own families. Erosion and reef siltation, over-fishing and improper harvesting, and non-native invasive marine species threaten traditional subsistence practices. Moloka`i has a wealth of traditional cultural practitioners with extensive experiential knowledge of local customs, resources, and ecosystems. Many of these practitioners believe it is their responsibility to teach younger generations traditional conservation practices and adherence to a code of conduct. This community place-based traditional resource management can function collaboratively with the more contemporary, resource management approach. One example is the `Aha Moku initiative, a joint venture established between the native Hawaiian community and the State to integrate the traditional cultural natural resource management system into existing government regulatory policy.<sup>25</sup>

In the past several decades, the rights of Native Hawaiians, particularly relating to access and gathering, have been extended and clarified. State and county governments and agencies have obligations to protect the reasonable exercise of traditional and customary practices of Native Hawaiians, to the extent feasible. Relying on the rights recognized in key constitutional and

<sup>24</sup> Matsuoka, Jon K., Davianna P. McGregor, and Luciano Minerbi. June 1994. *Governor's Subsistence Task Force Final Report*. Prepared for the State of Hawaii, Department of Business, Economic Development and Tourism, Honolulu, HI.

<sup>25</sup> <https://www.dropbox.com/sh/n6fcippt899slvv/AACJ2SfBZDsXB3FOZWFOy96Xa?dl=0>  
Chapter 3 Natural, Heritage, and Scenic Resources

statutory provisions, as well as court decisions<sup>26</sup>, the Hawaii Supreme Court established an analytical framework for State and county agencies to follow when considering land use and development projects<sup>27</sup>.

## B. ISSUES

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Issue 1: Cultural, historic, and archaeological sites are vulnerable to destruction, theft, neglect, and environmental degradation. Due to the Hawaiian language not being a written language, these sites represent Moloka`i's libraries and history.

Issue 2: Cultural and environmental degradation affect the ability of Hawaiian cultural practitioners to practice their traditional lifestyles, including subsistence practices.

## C: GOAL, POLICIES, ACTIONS

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**Goal**            **Moloka`i's cultural, historic, and archaeological sites, and cultural practices will be protected and perpetuated for their cultural and historical value, and for enjoyment of and sustainable use by future generations.**

### **Policies**

1. Encourage proper management of and appropriate interpretation of significant cultural resources and sites.
2. Promote the rehabilitation, reuse, and historic registration of significant cultural resources, historic structures, and cultural landscapes.
3. Where appropriate, require identification and mitigation of potential impacts to subsistence activities and resources

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<sup>26</sup> Hawaii Constitution, Article XII, Sec. 7  
<https://www.dropbox.com/sh/a0w7lodq791x1h7/AABtT8Z5AXWig8-Lra1Yagfga?dl=0>, HRSS§§ 1-1, 7-1; Ka Pa`akai o Ka `Aina v. Land Use Comm'n, 94 Hawai'i 31 (2000); Pele Defense Fund v. Paty, 73 Haw. 578 (1992).

<sup>27</sup> Ibid; see also Public Access Shoreline Hawai'i v. Hawai'i County Planning Comm'n, 79 Hawai'i 425 (1995).

when reviewing development permits and discretionary land use proposals.

4. Support access for subsistence hunting, fishing, and gathering. Support appropriate public access to the shoreline, public trails, and hunting areas in a manner that protects natural and cultural resources and respects cultural practices.
5. Protect and support Native Hawaiian rights customarily and traditionally exercised for subsistence, cultural, and religious purposes in accordance with Article XII, Section 7, Hawaii State Constitution, Sections 1-1 and 7-1, and Hawaii court decisions.
6. Support the establishment of the island as a community-based subsistence fishing area, pursuant to Sections 188-22.6, HRS, to conserve marine and nearshore resources for generations to come.
7. Increase community awareness and stewardship of Moloka`i's historic and cultural resources.
8. Protect traditional cultural landscapes, such as Hālawā Valley, Hoku Kano-`Ualapu`e Complex, Ka`amola, and Kamalo through the designation of all of Mana`e within a Traditional Land Use Overlay.
9. Encourage the restoration, management, and use of Moloka`i's fishponds.
10. Support the inclusion of educational programs that emphasize culturally significant arts and practices, the Hawaiian language, and Moloka`i history into the curriculum of Moloka`i schools.
11. Support community-based cultural tourism that does not have an adverse effect on natural resources and culture.
12. Encourage increased funding for SHPD.
13. Support Moloka`i cultural events that do not have an adverse effect on natural resources and culture.

14. Ensure that permits for any project that may affect historic property are provided to SHPD for review, and that SHPD's recommendations are issued as permit conditions.
15. Promote the education of visitors on the significance of historic and cultural sites, how to be respectful of these sites, and how to support the maintenance and preservation of these sites.
16. Encourage efforts in Waikolu Valley to partner with the Kalaupāpā National Historical Park - National Park Service, DLNR, the community, and other stakeholders to: (a) conduct archaeological studies; (b) conduct invasive species removal; and (c) implement traditional uses of the valley.

**Actions**

<b>Table 3.2 Heritage Resources Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
3.2.01	Complete and regularly maintain a GIS inventory of cultural, archaeological and historic resources and trails assembled from existing inventories and databases to be used for project review.	PD	SHPD
3.2.02	Identify other significant cultural property types, including rural historic landscapes and traditional cultural properties, and take action to include appropriate sites on the National Register of Historic Places.	PD	SHPD
3.2.03	Establish archaeological and historic districts where high concentrations of historic sites exist.	PD	SHPD
3.2.04	Provide education and incentives to encourage property owners to nominate structures and sites to the State and National Register of Historic Places.	PD	Real Property Tax
3.2.05	Coordinate with cultural practitioners and State agencies to develop public education programs on the proper gathering and use of subsistence resources.	Environmental Coordinator	Cultural Practitioners DLNR OHA
3.2.06	Develop educational materials addressing heritage and natural resources impacts from unpermitted ground altering activities; disseminate educational materials widely, including to private landowners and visitors; provide instructions for reporting unpermitted activities. Train Moloka'i Development Services Administration (DSA) personnel to immediately respond to complaints.	DPW	PD

**Actions**

3.2.07	Pursue State and County cooperation to update and implement the Mālama Cultural Park master plan.	PR	PD
3.2.08	Explore options to protect cultural sites listed in Appendix 3.3.	PD	SHPD Landowners
3.2.09	Establish a comprehensive historical interpretive program, including historical markers, maps, and brochures, and identify ahupua`a and significant historical sites that are appropriate for public interpretation.	OED	PD
3.2.10	Coordinate with kūpuna knowledgeable in north shore protocol to hold community meetings to educate people about the history and cultural significance of Wailau and Pelekunu and to encourage pono cultural practices.	Environmental Coordinator	OED Cultural Practitioners DLNR OHA NGOs, Community Groups
3.2.11	Encourage the Governor to appoint members to the Moloka'i Island Burial Council so that regular hearings by this body may resume.	PD	SHPD OHA
3.2.12	Promote Moloka'i cultural events that do not have an adverse effect on natural resources. Develop Moloka'i cultural events and tourism guidelines that protect island culture and natural resources.	OED	USGS DLNR DoCARE NGOs, Community Groups Cultural Practitioners OHA
3.2.13	Provide educational training to applicable County agencies on the role that the County permit process plays in historic preservation.	PD	SHPD
3.2.14	Educate property owners regarding the need to prevent damage to, or destruction of, historic and cultural sites.	PD	SHPD



### 3.3 Scenic Resources

Scenic views and corridors are abundant and diverse on Moloka`i. They include land, sky, sea, and historic structures at a variety of scales and locations: urban, rural, agricultural, and open spaces. Views of nature, including ocean, hill slopes, valleys, ridgelines, springs, waterfalls, and coastlines can be seen nearly continuously from roadways that cross the island or follow the coast.

#### A. EXISTING CONDITIONS

Scenic resources on Moloka`i benefit from the limited amount of development that preserves vast areas of open space, agricultural lands, forested mountains, historic landscapes and ocean coastline. Many ridgelines and higher elevation hillsides remain undeveloped, while vegetation along the coastline obstruct views in many locations.

A photo inventory of Moloka`i's scenic resources was conducted and mapped but has not been rated for resource value. The *Maui County General Plan 2030 Scenic & Historic Resources, Inventory & Mapping Methodology Reports* provide guidance on visual quality ratings based on eleven factors used to evaluate and prioritize scenic resources.<sup>28</sup> In addition, the inventory and mapping work has not yet occurred to develop the Scenic Roadway Corridors Management Plan and Design Guidelines.

#### B. ISSUES

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- Issue 1: Scenic resources are vulnerable to loss or degradation when not identified.
- Issue 2: Most scenic resources can be difficult to restore once changed.
- Issue 3: Moloka`i's scenic views are underutilized due to a lack of signage and turnouts.
- Issue 4: The increasing spread of invasive and poorly maintained vegetation is blocking views to the ocean and mountains.

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<sup>28</sup> Chris Hart & Partners, Inc. (June 2006). *Maui County General Plan 2030 Scenic & Historic Resources, Inventory & Mapping Methodology Reports* (County of Maui Long-Range Planning Division).

**C. GOAL, POLICIES, AND ACTIONS**

**Goal**            **Preserve and protect diverse scenic resources for future generations.**

**Policies**

1. Restrict or mitigate the impact of development on scenic resources.
2. Ensure development is designed to protect scenic roadway views and significant views of ridgelines and hill-slopes to maintain open space scenic character.
3. Increase community awareness and appreciation of Moloka'i's scenic resources.
4. Support land purchase or provide tax incentives to design and construct scenic overlooks, roadside pull-outs, and signage. Maintain scenic view corridors to the ocean and mountains.
5. Retain significant vistas associated with archaeological features and culturally significant areas.

**Actions**

<b>Table 3.3 Scenic Resources Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
3.3.01	Develop BMPs for land and development uses to protect identified priority view corridors or viewsheds.	PD	NGOs
3.3.02	Complete the visual inventory, analysis, and mapping of key scenic view corridors, ridgelines, and viewsheds.	PD	NGOs
3.3.03	Develop and implement the Scenic Roadway Corridors Management Plan and Design Guidelines.	PD	NGOs DPW HDOT

3.3.04	Provide educational workshops for design consultants and developers on scenic resource BMPs.	PD	NGOs
3.3.05	Integrate scenic resource planning into natural and heritage resources strategies and plans.	PD	NGOs

## 4 | HAZARDS

Hazards from natural forces have been measured in Hawaii since the early 1800s. Since 1955 there have been 24 major disaster declarations in the State of Hawaii due to tropical cyclones, earthquakes, landslides, lava flows and tsunamis. Natural disasters have inflicted significant property losses and resulted in death and injury to residents and visitors in the County of Maui. Direct and indirect costs should be considered when calculating the total loss from natural disasters, since recovery efforts divert available public and private resources, adversely impacting economic productivity.

The focus of disaster recovery is how to build resiliency, the bounce-back capability, into communities. People must first recognize the inherent risks involved in their choices of where and how to live. Then the communities can adopt “approaches that eliminate, reduce, mitigate or transfer those risks in ways that make them more manageable over the long haul”<sup>29</sup>.

Communities with strong disaster resilience capabilities were often those that were already doing well at the things citizens and businesses most value – having leaders that people trust and institutions that work, having a healthy environment, having a regularly maintained infrastructure designed to anticipate stresses, and having a flexible economy that provides opportunities for broad cross-sections of workers and investors.<sup>30</sup>

The islands that constitute Maui County are exposed to hazards that are sometimes unique to each island. Moloka`i has greater exposure to high surf from the large Northwestern Pacific swells than other islands. Wildfires and drought have significantly impacted Moloka`i. Floods and coastal erosion with economic, social, and environmental significance are more common on Moloka`i because its population center is near shorelines and mountains with steep grading. All islands in the County have similar exposure to tropical cyclones because of their geographic location. Similarly, all islands in the County have comparable exposure to earthquakes.

The hazard mitigation planning process analyzes a community’s risk from natural hazards, coordinates available resources, and implements actions to reduce risks. Natural hazards must be considered when planning for future

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<sup>29</sup> <http://www.soest.hawaii.edu/coasts/sealevel/>

<sup>30</sup> Brown, Ben. (December 2010) *What is Resilience? A Roadmap to Resilience: Towards a Healthier Environment, Society and Economy for South Alabama. A Report by the Coastal Commission of Alabama.*

growth and development of a community. The Maui County Hazard Mitigation Plan (HMP) provides a strategy to reduce or eliminate loss of property or life caused by natural hazard events. The HMP addresses the relationship among various types of hazards, identifies actions that benefit multiple hazards, and prioritizes resources to areas susceptible to the most severe or most frequent hazards. The HMP was completed in 2015 and received final approval from the Federal Emergency Management Agency (FEMA) the same year. (Specific references to the 2015 Maui County Multi-Hazard Mitigation Plan pertaining to descriptions in this chapter can be found in the footnotes). The updated HMP will also focus on mitigating the impacts of flooding to improve the County's Community Rating System (CRS) class ranking, which is currently 8. This ranking provides a 10 percent annual discount off flood policy premiums. A ranking of 1 out of the 10 classes is the highest and would provide a 45 percent discount. The National Flood Insurance Program (NFIP) is a Federal program created by Congress to mitigate future flood losses through sound, community-enforced building and zoning ordinances and to provide access to affordable, Federally-backed flood insurance protection for property owners. The NFIP is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods. The County is in the process of updating the Flood Insurance Rate Maps (FIRMs) that are used to determine which property owners with mortgages will be mandated by FEMA to purchase flood insurance and the cost of the insurance.

## **A. EXISTING CONDITIONS**

Extensive areas of Kaunakakai and the East-end communities are located at low coastal elevations placing them at relatively high-risk from tsunami, coastal flooding, stream flooding, storm surge, and inundation. Areas around the tourist resort at Kaluako`i and the entire campground at Papohaku Park are also in tsunami inundation zones (see Hazards maps 4.1, 4.2 and 4.3).

Moloka`i High and Kualapu`u Elementary have been identified as hurricane evacuation shelters with a combined capacity of 3,197. Three facilities have been identified as evacuation shelters for tropical storms and three are identified as tsunami assembly areas. A State of Hawaii Civil Defense facility survey found recurring deficiencies with existing shelters (Martin & Chock, 2010). A Statewide effort is currently underway to validate the shelters and their capacities, the results of which will be amended into this Plan when completed.

There is a need for shelters in Central and East Moloka`i.

There are 11 warning sirens on island: 8 on the south shore, 1 on the Kalaupāpā Peninsula, one in Maunaloa and one on the West End. An additional 6 sirens are planned for Moloka`i as part of the Statewide Modernization and Upgrade Plan. Sirens have an effective average range of one-half mile. The Civil Air Patrol provides coastal warnings and the County of Maui Emergency Management Agency (EMA) transmits warnings to the public through the Emergency Alert System (EAS), which includes simultaneous broadcasts over all radio and television systems. Subscribers to EMA Notifications and Emergency Alerts will be notified via text, email, and phone calls. Additionally, phone calls will be made to public land lines in the affected area. Disaster response is coordinated through the County's Emergency Operation Center on Maui and the Moloka`i Incident Command Post. Communications are augmented through satellite transmission.

**Flooding and Erosion** – Annual storms can bring multiple hazards that impact coastal and inland areas. These impacts include flash floods, high waves, storm surge, high winds, and hurricanes. SLR increases high waves and storm surge that contribute to beach and shoreline erosion and coastal inundation. Major flood problems are associated with the heavy flow of four water courses in east Moloka`i. Wailua Stream, Wāwā`ia Gulch, Kamalo Gulch and Kawela Gulch become blocked because of inadequate bridge openings or deposits of eroded sediment. Many streams run freely onto the roads because of inadequate drainage and storm water infrastructure. This typically occurs around the east side of Kawela and at One Ali`i Beach Park. Roadway flooding can hamper travel and access and adversely affect emergency response times and capacity. When streams and rivers flood on the mauka side of the road, heavy debris often settles on the roadways. Additionally, mud runs off onto roadways making roads impassable and creating hazardous driving conditions. There are several unnamed waterways that flood areas by the Kaunakakai Fire Station and Education Center, impacting the cemetery and Kapa'akea Homestead. Rising sea levels will also block the drainage of streams causing overflow at the stream mouth.<sup>31</sup> Manila Camp has also been affected by flooding from the “third river”.

**Tsunami** - As of May 2010, 27 tsunamis with run-up heights greater than 3.3 feet (1 meter) have made landfall in the Hawaiian Islands during recorded history and 8 have had significant damaging effects on Maui, Moloka`i Lāna`i. Tsunamis reaching Moloka`i have exhibited tremendous variability in run-up heights, inundation distances, and the damage they have inflicted. The

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<sup>31</sup> 2015 Maui County Multi-Hazard Mitigation Plan, Chapter 10 and Chapter 13.

April 1946 tsunami on Moloka`i produced run-up heights of 7 and 44 feet on the east and west sides of Kalaupāpā Peninsula, respectively.

New GIS maps for all islands in the County have been developed for tsunami inundation areas. These maps include delineations of historical and modeled run-up data used for determining building standards and tsunami evacuation areas. Historically in Hawai`i, the NFIP FIRMs included the historical tsunami inundation limits. The new digital FIRMs should be amended to include for these limits.<sup>32</sup>

**Dams and Reservoirs** - Dam and reservoir failures can cause damaging flash floods. The sudden release of impounded water can occur during a flood that overtops or damages a dam or reservoir; this can occur on a clear day if the dam has not been properly constructed or maintained. The Kualapu`u Reservoir is an earthen dam located in central Moloka`i, that stores 1.2 billion gallons of water for irrigation purposes. The dam is 57 feet high and 7,100 feet long with a drainage area of 134 acres. This State-regulated reservoir was built in 1969 has a high flash flood hazard rating.<sup>33</sup> The nearest town in the flood path, is Ho`olehua Pala`au Homestead located one mile away. Kualapu`u Reservoir has a State-approved Emergency Action Plan, and an engineering assessment was completed in January 2015 (see Hazards map 4.2).<sup>34</sup>

**High Surf** - The most predictable and frequent coastal hazards in the Hawaiian Islands are sudden high waves combined with strong near shore currents. High surf is defined as waves ranging in height from 10 to 20 feet or more. High wave events threaten lives, coastal property, and infrastructure. High waves from hurricanes present a more complex hazard since they may coincide with high tide, storm surge, and high winds to produce a combined threat. They generally occur from June through December and most often hit the eastern shores of the Hawaiian Islands as hurricanes approach. High waves produced by north Pacific swells affect the entire northern and western coast of Moloka`i.<sup>35</sup> There is a greater threat to the more accessible and frequented areas along the north facing shores of the west La`au Point between `Īlio Point and Mo`omomi Beach.<sup>36</sup> Natural hazards must be considered when planning for future growth and development of a community.

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<sup>32</sup> Ibid, Chapter 9.

<sup>33</sup> "High hazard" means a dam's or reservoir's failure will result in probable loss of human life. Source: HAR-190-1-Dam-Safety-Rules1.pdf

<sup>34</sup> 2015 Maui County Multi-Hazard Mitigation Plan, Chapter 11.

<sup>35</sup> Ibid, Chapter 16.

<sup>36</sup> *Atlas of Natural Hazards in the Hawaiian Coastal Zone, 2002.*

**Wildfire** -Wildfire is the term applied to any unwanted and unplanned fire burning in forest, shrub, or grass areas, regardless of whether naturally or human induced. Historically, Moloka`i has been very susceptible to wildfire; there are nine years on record where more than 1,000 acres burned. Between 1975 and 2009, wildfires on Moloka`i burned over 65,000 acres, which is approximately twice as much acreage as wildfires consumed on the island of Maui during the same period.

Wildfires can cause widespread damage to watersheds, human communities, and downslope coral reef ecosystems. The danger of wildfire is related to arid conditions, frequent high winds, and the high fuel potential of vegetation. Nine out of ten wildfires are human caused. Moloka`i's Central area and West End are dry regions with agricultural lands that are particularly susceptible to drought conditions and are therefore at high risk of wildfire.

In the early 2000's the Moloka`i Fire Task Force was created to improve interagency coordination and communication regarding wildfires on Moloka`i. The original core group consisted of Maui County Fire and Rescue Operations, The Nature Conservancy (TNC) and the State DLNR Division of Forestry and Wildlife (DOFAW). The Task Force has since evolved, and many other private sector, State, County, and local community agencies have become involved. The Task Force maintains a positive working relationship between the myriad of agencies involved in wildfire protection and the Moloka`i community.

The Task Force collects wildfire risk data and oversees development of the Community Wildfire Protection Plan (CWPP). The CWPP addresses elements of wildfire protection, hazard assessment, wildfire mitigation priorities, and community outreach and education. The goals and objectives of the Plan follow the requirements of the *Healthy Forests Restoration Act* (HFRA), which describes a CWPP as a fire mitigation and planning tool for at-risk communities that meet criteria contained in the HFRA.<sup>37</sup>

**Hazardous Substances & Waste** - The Hawai`i Environmental Response Law (HERL) requires the DOH to report annually to the State Legislature about sites with potential or known hazardous substances, pollutants, or contaminants.<sup>38</sup> The 2014 Site Rehabilitation Prioritization (SRP) List of

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<sup>37</sup> Detailed information and data on tsunamis is contained in the 2015 Maui County Hazard Mitigation Plan, Chapter 14 (drought) and Chapter 15 (wildfire). Additionally, the impact of drought on Moloka`i was addressed in the October 2004 County of Maui Drought Mitigation Strategies and the 2005 State Drought Plan.

<sup>38</sup> Martin & Chock. (2010) Maui County Multi-Hazard Mitigation Plan.



Priority Sites reported ten sites on Moloka`i with potential or known contamination. There was also a list of sites eligible for possible remedial action under the Comprehensive Environmental Response Compensation and Liability Act that identified one Moloka`i site for possible listing. Additionally, in 2014, there were four Moloka`i sites located on Federal property managed and funded under the Department of Defense/State Memorandum of Agreement (DSMOA) Program.<sup>39</sup>

## **B. ISSUES**

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- Issue 1: There is low public awareness about hazard preparedness, mitigation, response, and recovery.
- Issue 2: In coastal areas, including Kaunakakai, SLR will increase risk of inundation, flooding, storm surge, beach erosion, and shoreline retreat and structural damage.
- Issue 3: Moloka`i has a high risk of wildfire.<sup>40</sup>
- Issue 4: Moloka`i cannot solely depend upon other islands for resources for hazard and emergency response.
- Issue 5: The majority of Moloka`i's government, business, and health care facilities, except for the hospital and fire station, are located entirely within flood and tsunami inundation zones.
- Issue 6: Puko`o Fire Station is the only emergency facility located on the East End and is located within flood and tsunami inundation zones.
- Issue 7: There are no emergency facilities in the West End.

## **C. GOAL, POLICIES, ACTIONS**

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**Goal**            **Moloka`i will be prepared for natural and human-created hazards.**

<sup>39</sup> *Environmental Response and Planning Community Knowledge Report to the Twenty-Seventh Legislature, State of Hawaii 2014.*

<sup>40</sup> Draft Maui County Hazard Mitigation Plan Update, 2015.

## **Policies**

1. Promote public education about natural and human-induced hazards to improve preparedness and response and to reduce hazard risk and impacts.
2. Support a more coordinated emergency response system that includes clearly defined and mapped evacuation routes and Red Cross approved shelters located away from areas susceptible to natural hazards.
3. Support and advocate for better preparedness capacity by improving inter-agency planning, coordination, and implementation.
4. Support the integration of science-based coastal hazards information into land use planning and permitting, including revision of the Special Management Area (SMA) boundary in accordance with Section 226, HRS, Climate Change Adaptation Priority Guidelines.
5. Maximize protection of coastal natural resources and ecosystems and avoid the perpetuation of shoreline armoring.
6. Encourage the location or relocation of all critical infrastructure, facilities, and development out of the evacuation and inundation zones vulnerable to coastal hazards in accordance with the 2012 Hawai'i State Climate Change Adaption Adaptation Priority Guidelines and the HMP.
7. Prioritize mitigation efforts that will provide potential funding opportunities to flood proof or retrofit vulnerable critical facilities and infrastructure.
8. Support the goals, objectives and actions of the 2018 Moloka'i Community Wildfire Protection Plan.
9. Support the protection and restoration of natural systems, such as wetlands and dunes, for flood mitigation and climate change adaptation.

10. Promote the distribution of public education and outreach materials that explain FEMA's NFIP.
11. Per the Maui County Hazard Mitigation Plan, encourage the State to utilize the funding provided to retrofit, rehabilitate and/or replace highway bridges vulnerable to earthquake hazard.
12. Encourage a greater urgency to act on hazard policies, actions, implementation priorities, and funding.
13. Support the addition of Red Cross approved shelters.
14. Support the integration of traditional ecological knowledge-based coastal hazards information into planning for resilience.

**Actions**

<b>Table 4.1 Hazards Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
4.01	Continue the development of Moloka'i Incident Command Post in coordination with County EMA.	EMA	Red Cross Civil Air Patrol MPD MFD DPW EMS Volunteer Organization Active in Disaster Privately held Public Water Systems
4.02	Identify and submit flood and pre-disaster mitigation projects that qualify for funding under the FEMA Pre-Disaster Mitigation Program, Hazard Mitigation Assistance Program, NFIP Severe Repetitive Loss Program, and other FEMA funded mitigation and NFIP grants consistent with the Maui County HMP.	EMA	FEMA Region IX NFIP
4.03	Develop programs and distribute materials for public outreach and education to better educate the community and visitors on disaster preparedness, response, hazard mitigation, multi-hazard risks and vulnerabilities, and post-disaster recovery. Target materials and programs that will provide information on steps to take to protect lives and strengthen property against natural and human-related disasters.	EMA	MFD Mayor's Office Environmental Coordinator Red Cross Moloka'i Wildfire Task Force

<b>Table 4.1 Hazards Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
4.04	Seek community information on possible hazardous waste sites buried decades ago; investigate and remediate if needed.	DEM	DOH Mayor's Office (Environmental Coordinator)
4.05	Identify critical infrastructure, lifelines, roads, and structures that are vulnerable to coastal hazards, including SLR, and develop a more coordinated emergency response system of well-defined and mapped evacuation routes.	EMA	DPW DWS DEM
4.06	Identify critical infrastructure, lifelines, roads, and structures that are vulnerable to wildfires and develop a more coordinated emergency response system of well-defined and mapped evacuation routes. Formalize existing practices on the use of heavy equipment during fires.	MFD	DOFAW Volunteer Fire Crew Moloka'i Fire Task Force
4.07	Develop a wildfire information campaign and signage to build public awareness of wildfire hazard. Improve community awareness of the human, economic, and environmental costs associated with wildfires caused by negligence or accident. Engage the community in creating and maintaining fire breaks.	MFD	Moloka'i Fire Task Force Private Property Owners
4.08	Support wildfire mitigation activities such as green belts around subdivisions and vegetation control around power poles that will minimize risk of wildfire susceptibility to properties and subdivisions.	DPW	MFD PD Moloka'i Fire Task Force MECO
4.09	Complete an inventory of vulnerable critical facilities and infrastructure. Include this information in the Maui County HMP for future mitigation project funding.	PD	EMA

<b>Table 4.1 Hazards Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
4.10	Map SLR projections for specific geographic areas on Moloka'i, utilizing data from the NOAA Digital Coast SLR and Coastal Flooding Impacts Viewer. Map other climate-related coastal hazard areas.	PD	NOAA Pacific Services Center UH Sea Grant
4.11	Continue work with FEMA to update FIRMs that incorporate best available information on climate change and SLR.	PD	FEMA
4.12	Implement additional CRS activities to improve class ratings and discounts on flood insurance premiums.	PD	FEMA
4.13	Conduct erosion analysis of Moloka'i's shoreline to determine rate of erosion and use the results to determine setback calculations that also factor in incremental effects of SLR.	PD	NOAA Pacific Services Center UH Sea Grant
4.14	Coordinate with Federal, State and County agencies to obtain current SLR information and maps. Plan phased relocation of critical structures and roadways. Plan long-term strategic retreat of buildings. Identify priority planning areas where resources and planning efforts should be focused. Identify how and where to use adaptation strategies such as retreat, accommodation, and protection.	PD	NOAA Pacific Services Center, UH Sea Grant  EMA DPW
4.15	Per the HMP, update the HAZUS-MH model to incorporate detailed data on State and County bridges located in Moloka'i.	EMA	FEMA
4.16	Support development of a cultural archive of the kūpuna's knowledge of traditional hazard mitigation practices.	PD	DHHL
4.17	Evaluate, update and prioritize shelters on Moloka'i.	EMA	Red Cross

<b>Table 4.1 Hazards Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
4.18	Immediately seek funding and develop an implementation plan to move critical infrastructure and emergency services out of flood and tsunami inundation zones.	EMA	FEMA
4.19	Support the relocation of the Puko`o Fire Station on the East End of Moloka'i.	EMA	FEMA

## 5 | ECONOMIC DEVELOPMENT

Several key economic events have shaped the structure and vitality of Moloka`i's economy. These events have also influenced the population makeup and employment opportunities on the island. Moloka`i has a long history of agriculture, beginning with the cultivation of taro and development of fishponds by the native Hawaiians. In 1859, Kamehameha IV established a sheep ranch at Kaluako`i, which was the origin of Moloka`i Ranch. In the 1920s, the first pineapple plantations were established, and the island experienced an influx of immigrant workers. Other agricultural crops have been commercially produced on Moloka`i, including sugar, honey, sweet potatoes, and watermelon. In the late 1970s, the Kaluako`i Hotel along with its golf course and condominiums opened, officially introducing resort tourism to Moloka`i. By the early 1980s, pineapple operations closed ending plantation agriculture on Moloka`i, triggering a substantial out-migration.

In 1967, the first corn test plots were started by Moloka`i Ranch, with the support of the University of Hawai`i (Dr. Jim Brewbaker and Dr. Elizabeth Johnson (Granger)). In 1966, Molokai Seed Service and Hawaiian Research, founded by Roland Holden, began business on Moloka`i. In 1972, Molokai Seed Services sold to Hawaiian Research all of its assets including land leases on Moloka`i. In December 2000 Monsanto purchased Hawaiian Research. In 2000, two biotech seed corn companies, Monsanto and Mycogen Seeds, began operations that became Moloka`i's first and second largest private employers. In 2001, the Kaluako`i Hotel closed; then, in 2008, the island's largest employer at the time, Moloka`i Ranch, closed its operations and laid off 120 employees. This meant the loss of some important community amenities such as the Kaluako`i golf course, a gas station, and a movie theatre complex.

In an effort to find solutions to the island's economic challenges, the Maui Economic Development Board (MEDB) and the Moloka`i Chamber of Commerce surveyed 90 Moloka`i business representatives. MEDB's 2009 report, *Entrepreneurship and the Future of Molokai*, concluded that, "... the quality of the labor force and job applicants was a limiting factor for the Moloka`i economy."<sup>41</sup> Education levels, job skills, and a shortage of local managerial talent were cited as contributing factors. Despite these discouraging findings, MEDB also found that "...entrepreneurship is thriving on Moloka`i and that resourcefulness is inherent in the community."<sup>42</sup>

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<sup>41</sup> Maui Economic Development Board, *Entrepreneurship and the Future of Molokai* (2009).

<sup>42</sup> Maui Economic Development Board, *MEDB Annual Report on Operations, July 1, 2008 - June 30, 2009*.



Additionally, according to the 1994 *Governor's Moloka`i Subsistence Task Force Final Report*, subsistence is a viable sector of Moloka`i's economy. Subsistence practices on Moloka`i have continued into today primarily due to the availability and community-based management of natural resources. With Moloka`i's history of numerous economic strategies proposed by various entities that have had negative implications on Moloka`i's natural resources and native ecosystems, it is important to carefully move forward with future endeavors that will develop and diversify Moloka`i's economy. Such economic development strategies must be compatible with the island's character and lifestyle.

In the Wāiahole I contested case hearing, the Hawai`i Supreme Court held that the public trust doctrine affords protection for natural resources that are important for Native Hawaiian traditional and customary practices,<sup>43</sup> including subsistence. The Supreme Court further held that private commercial use is not a protected public trust use.<sup>44</sup> Additionally, as public and private interests often conflict, the State has a constitutional obligation to weigh competing interests in public trust resources with a presumption in favor of public use, access, and enjoyment.<sup>45</sup> In order to ensure Moloka`i's subsistence economy remains viable and the rural character of Mana`e remains intact, it is critical to ensure that the continuous development of Moloka`i's economy is done so in a way that is in accordance with the State's affirmative obligations.

## **A. EXISTING CONDITIONS**

Moloka`i's economic development efforts face a unique set of challenges including:

- Limited local market capacity and competition due to the small, isolated population.
- Higher cost and limited product transportation options.
- Over-reliance on fossil fuel-based imports for energy production and transportation of people, food, and materials.

These economic challenges are magnified on Moloka`i; finding workable solutions will require thoughtful collaboration between business owners, major landowners, government entities, and the community.

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<sup>43</sup> *In re Waiāhole Combined Contested Case Hearing (Waiāhole I)*, 94 Hawai`i 97, 136 9 P.3d 409, 448, 137.

<sup>44</sup> *Ibid.* at 138.

<sup>45</sup> *Ibid.* at 141-42.

The USDA awards grants to communities throughout the United States that have high rates of poverty. Moloka`i was designated as a Rural Enterprise Community from 1998 to 2008. Moloka`i is economically disadvantaged due, in part, to the lasting combined impacts of the Great Recession and the shutdown of the pineapple companies and Moloka`i Ranch. The following 2009-2013 American Community Survey statistics provide a snapshot of economic conditions on Moloka`i<sup>46</sup>:

- Moloka`i has consistently had the State's highest unemployment rate; in November 2014, the unemployment rate was 14.2 percent versus the statewide average of 4.7 percent.<sup>47</sup>
- The 2009-2013 estimated median family income (MFI) for East Moloka`i was \$51,807, which was 65 percent of the \$79,963 statewide MFI; West Moloka`i's MFI was \$44,656, which was 56 percent of the statewide MFI.
- An estimated 21 percent of people living on Moloka`i had incomes below the poverty level, which was nearly double the statewide rate of 11 percent.
- On Moloka`i, 28 percent of workers were employed in the government sector compared to 15 percent on Maui, and 21 percent statewide. Alternatively, Moloka`i had the lowest percentage of private-sector employees at 63 percent compared to 75 percent on Maui, and 72 percent statewide.
- Moloka`i had the highest percentage of workers employed in the agricultural, forestry, and fishing industries at 7 percent compared to Maui at 2.4 percent and the State average at 1.5 percent.
- Moloka`i has only one small hotel and 340 total visitor accommodation units that are mostly condos, and in 2014 the island had the lowest percentage of workers employed in the tourism sector with 15 percent versus 24 percent for Maui and 16 percent statewide.

Standard economic indicators such as unemployment rate, workforce composition, and personal income levels may signify a community in distress; however, Moloka`i has a significant subsistence economy that provides a vital and viable substitution for many imported goods. This key sector in Moloka`i's hidden economy is important to food sustainability and self-sufficiency.

Moloka`i's subsistence economy is based on the customary and traditional practices by Moloka`i residents that relies on wild and cultivated renewable resources for direct personal or family consumption, such as food, shelter, fuel, clothing, tools, transportation, culture, religion and medicine, for

<sup>46</sup> American Community Survey, 2009-13 5-year Estimate (unless otherwise noted).

<sup>47</sup> Hawaii State Department of Labor & Industrial Relations (DLIR), December 2014.

bartering or sharing, and for customary trade. Many families on Moloka`i continue to rely upon subsistence fishing, hunting, gathering, or cultivation for a significant portion of their food. Subsistence agriculture has also been critical to the perpetuation of traditional Hawaiian cultural values, customs and practices.

A number of residents on Moloka`i are very protective of their rural and traditional-based lifestyles and have resisted economic development centered on commercial tourism, real estate development, and in-migration of new residents -- all important elements in most of the State's economic development strategies. Although many Moloka`i residents are willing to accept economic tradeoffs to maintain their traditional lifestyles, others desire a more diversified, resilient, productive, and service-based economy. There is considerable community support for agriculture, aquaculture, and an active community-based tourism sector. Many residents would like to see small local businesses and entrepreneurs become the primary drivers of Moloka`i's economic renaissance. There is also a strong community desire to revitalize and reopen the Kaluako`i Hotel and Golf Course, the Maunaloa Lodge, and other amenities.

There is no longer direct freight service between Moloka`i and Maui, which creates logistical problems for producers of perishable goods. The Young Brothers freight schedule makes it difficult to ship perishable goods from Honolulu. Products originating or arriving outside of Hawai`i first arrive on Oahu then move on to Moloka`i. The additional leg of travel increases Moloka`i's shipping costs and shipping times, which can affect spoilage rates for agricultural products.

## **B. ISSUES**

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Issue 1: Moloka`i's limited economic base has been unable to provide a sufficient level of employment to meet the needs of residents.

Issue 2: Transportation between Moloka`i and the neighbor islands is costly and a challenge for economic development.

Issue 3: The limited pool of qualified, well-trained, and reliable workers reduces local employment potential and makes business more challenging.

Issue 4: Moloka`i has a high cost of electricity.

Issue 5: There is increasing concern that if something is not done now to reverse the trend of overharvesting and diminishing natural resources, there will be nothing left for future generations.

### **C. GOAL, POLICIES, ACTIONS**

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**Goal** A stable, balanced, diversified, and sustainable economy, respecting cultural and natural resources, that is compatible with Moloka`i's rural island lifestyle.

#### **Policies**

1. Support diversification of Moloka`i's economy.
2. Support improvements in education training programs and internships at all levels to ensure a well-educated and well-trained workforce.
3. Support the development of agriculture and value-added agricultural products and support traditional farming systems.
4. Support small business assistance and training programs.
5. Support the expansion of complementary tourism markets, including kama`āina, cultural, religious pilgrimage, ecotourism, agricultural, and sports in a manner that supports the conservation of Moloka`i's natural and cultural resources, the protection of Moloka`i's rural lifestyle and cultural traditions, and the sustainability of the island.
6. Support redevelopment projects, such as the Kaluako`i Hotel and Golf Course, and the reopening of the Moloka`i Ranch Lodge with community input to incorporate community culture and lifestyle.
7. Support the limited growth of permitted alternative lodging units that do not create an adverse impact on the neighborhood.
8. Support increased enforcement of Chapter 19.65, MCC, the County's Short-Term Rental Home ordinance, to address the adverse impacts short-term rentals have on neighborhoods.

9. Advocate for Moloka`i's transportation interests.
10. Encourage the State Department of Transportation's implementation of harbor improvements.
11. Encourage the State Department of Transportation to improve the airport.
12. Create regulations and procedures that will enhance and promote (not hinder) economic development appropriate to Moloka`i's rural character.
13. Support art as a business.
14. Support and encourage cottage and mini-industries, such as garment and craft production, as residential-based economic activities, provided such activities are compatible with the surrounding neighborhood.
15. Support increased education and employment in conservation and restoration to create a sustainable economy.
16. Continue support of the Kuha`o Business Center.
17. Support the restoration and utilization of Moloka`i's fishponds and the development of a fish hatchery on the East End of Moloka`i.
18. Support community initiatives to develop a management plan for mangroves in fishponds and near shore areas and convert this invasive species into farm inputs and hardwood consumer products.
19. Encourage the update and implementation of the Moloka`i Responsible Tourism Initiative: A Community-based Visitor Plan for Moloka`i.
20. Support subsistence as a sector of Moloka`i's economy.
21. Encourage State and County efforts to secure Federal funds to subsidize interisland transportation.
22. Support community-based management of the natural resources on Moloka`i.

23. Encourage the protection of the coastline, valleys, and fisheries from all commercial activities and support a process to establish community-based subsistence fishing areas.

**Actions**

<b>Table 5. 1 Economic Development Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
5.01	Identify, target, and recruit new industries and businesses such as agricultural operations, aquaculture, cultural arts and trades, and information technology.	OED	MEO MEDB DOH DLNR `Aha Kiole o Moloka`i
5.02	Continue to assess potential shipping options.	OED	Ferry Operators Public Utilities Commission `Aha Kiole o Moloka`i
5.03	Continue to work with inter-island airlines to keep airfares affordable and service frequency adequate to accommodate the needs of Moloka`i's visitors, residents, and businesses.	OED	Airlines Shippers Public Utilities Commission `Aha Kiole o Moloka`i
5.04	Develop a Moloka`i Agriculture Strategic Plan for all farms.	OED	University of Hawai`i College of Tropical Agriculture and Human Resources `Aha Kiole o Moloka`i
5.05	Continue to provide business courses to farm owners and agricultural entrepreneurs that include education about State, Federal, and grant opportunities.	OED	DOA Farm Service Agency Hawai`i `Aha Kiole o Moloka`i
5.06	Encourage the development of cooperative agricultural development programs between the County and the DHHL to support diversified agricultural pursuits.	OED	DHHL `Aha Kiole o Moloka`i

5.07	Create a survey of Moloka`i's population to determine the reasons for the high rate of "discouraged workers."	OED	MEDB MEO `Aha Kiole o Moloka`i
5.08	Continue and enhance educational opportunities for Moloka`i's students in areas such as STEM education, business management, leadership, agriculture, and vocational training.	OED	MEDB MEO DOE UH `Aha Kiole o Moloka`i
5.09	Assess how environmental impacts, invasive species, feral ungulates, natural resources, and other factors will negatively or positively impact Moloka`i, present and future.	OED Mayor's Office (Environ mental Coordina tor)	DLNR EPA MEDB `Aha Kiole o Moloka`i
5.10	Develop a permanent appropriate site for the farmer's market in Kaunakakai to promote locally grown fresh produce and products.	OED	MEDB Moloka`i farmers `Aha Kiole o Moloka`i
5.11	Identify economic opportunities for the use of targeted plant and animal species for value- added products.	OED	`Aha Kiole o Moloka`i
5.12	Assess which development regulations are going to discourage investors from making improvements on Moloka`i.	OED	PD `Aha Kiole o Moloka`i
5.13	Explore the possibility of providing incentives to landowners to comply with MCC requirements for the purpose of maintaining affordable housing.	DHHC	PD `Aha Kiole o Moloka`i
5.14	Support workforce development efforts to help improve Moloka`i's economy.	OED	Hawai`i Workforce Development Dept. `Aha Kiole o Moloka`i
5.15	Develop opportunities to get more local agricultural products into local markets.	OED	DOA Market Development Branch



			`Aha Kiole o Moloka'i
5.16	Support the traditional use of Hawaiian farming systems and the growth of traditional Hawaiian crops.	OED	`Aha Kiole o Moloka'i
5.17	Support workforce development efforts targeted at sectors poised to revive Moloka'i's economy.	OED	`Aha Kiole o Moloka'i

## 6 | LAND USE AND HOUSING

Land use refers to the way in which we use and manage land, whether for agriculture, subsistence, environmental preservation, recreation, business, or housing. Land use policies and practices help to ensure an adequate and affordable supply of housing by designating where housing can be built in relation to other uses. Progressive land use and housing policies strive to ensure sustainable communities with a variety of housing opportunities proximate to jobs, services, parks, infrastructure, and transportation. The Plan sets the framework to create livable communities for Moloka`i's people while protecting agricultural lands, environmental resources, and the rural character of the island.

### 6.1 Land Use

Moloka`i is a rural island based on an agricultural economy. The island has three distinct geographic regions with small towns and dispersed rural settlement. The island has very limited commercial and tourism development. Moloka`i settlement patterns have been greatly influenced by the establishment of plantation agriculture and ranching, the development of irrigation systems, and the *Hawaiian Homes Commission Act of 1920, as amended*, enacted in 1921. The visitor industry began on Moloka`i in the late 1960s with the opening of Hotel Moloka`i and Pau Hana Inn in Kaunakakai, and on the West End with the Kaluako`i Hotel opening in 1977. The Pāpōhaku Ranchlands Subdivision, established in 1981 on the West End, signified the beginning of resort real estate development on Moloka`i.

#### A. EXISTING CONDITIONS

Moloka`i's current land use patterns are characterized by small towns surrounded by vast agricultural lands, rural homestead settlements, resort development at Kaluako`i, and scattered rural development along the island's southeast coast. Kaunakakai is the island's population and commercial center, and the smaller towns of Kualapu`u, Maunaloa, and `Ualapu`e are important service centers for those communities.

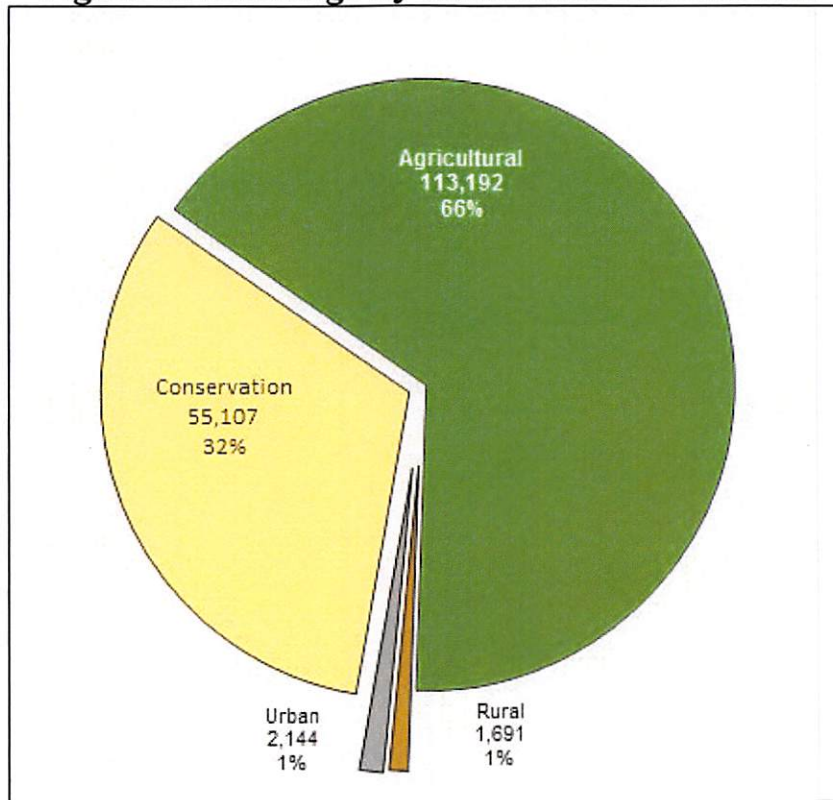
**Table 6.1: Population of Moloka'i's Small Towns**

Town	2010 Population
Kaunakakai	3,425
Kualapu'u	2,207
Maunaloa	376
Ualapu'e	425

Source: U.S. Census Bureau, 2010 Census

The vast majority of Moloka'i's lands are within the State's Agricultural and Conservation Districts, with only a small percentage designated as Rural and Urban (see Figure 6.1).

**Figure 6. 1 Acreage by State Land Use District**



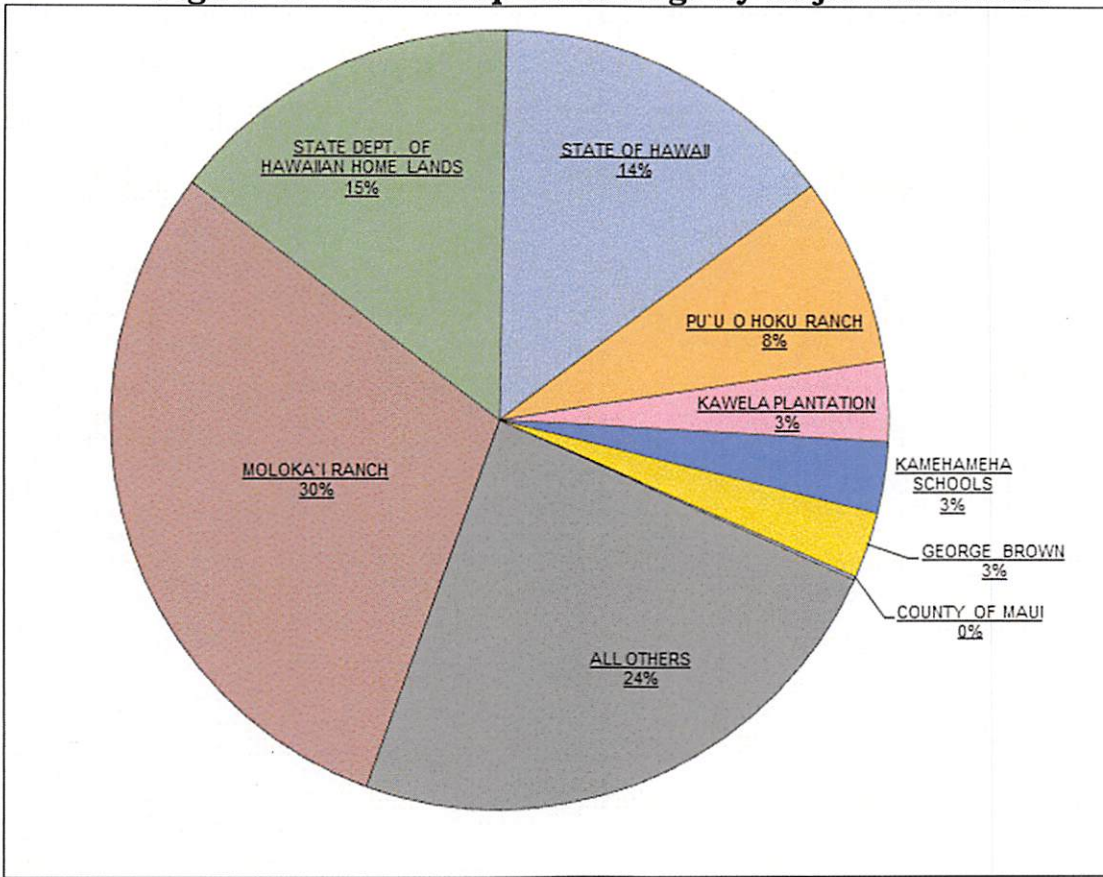
Almost all of the land on Moloka`i designated Urban by the State Land Use Commission (SLUC) is County-zoned Interim. The exceptions are those properties for which a zoning change has been granted. Interim zoning has significant consequences for landowners and businesses, including:

- Interim zoning adds considerable time and expense to the land use permitting process.
- Interim zoned property cannot be subdivided nor can conditional permits be granted.
- Interim zoning allows densities and uses that are potentially undesirable in some areas.

A majority of Moloka`i land is held by a few landowners and ownership patterns vary among the island's three regions (see Figure 6.2). West Moloka`i is almost entirely owned by Moloka`i Ranch. Central Moloka`i has large areas owned by the Department of Hawaiian Homelands (DHHL), Moloka`i Ranch, and smaller landowners. East Moloka`i is largely held by small landowners, some of which are *kuleana* grants. In the Hālawā area, Pu`uohoku Ranch has extensive property.

While developing housing, DHHL is not required to comply with the Maui County General Plan, zoning, and subdivision regulations, and County building and other ministerial permits. However, DHHL currently does require lessees to obtain building permit approval from the County Department of Public Works because DHHL does not have its own building code. This jurisdictional arrangement has caused confusion for some DHHL lessees and other community members.

**Figure 6.2 Ownership Percentage by Major Landowner**

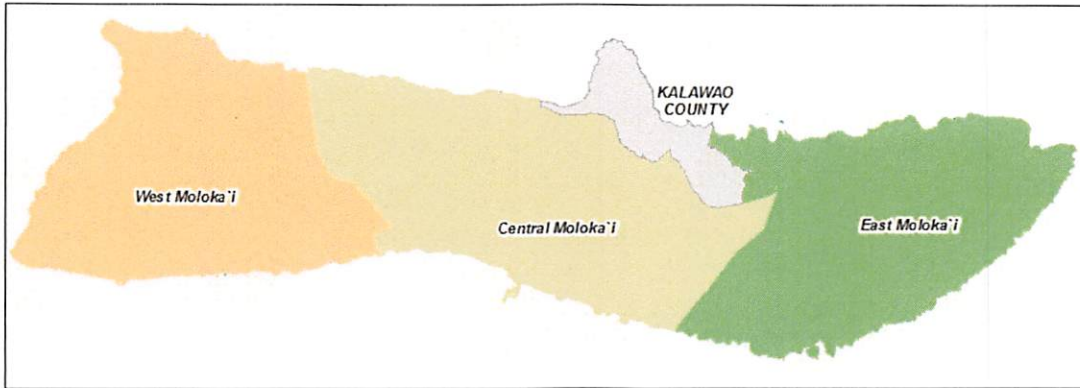


Moloka'i's elongated shape embraces widely varying topographic and climatic regimes. For planning purposes, the island is divided into three regions along Tax Map Key (TMK) parcel lines – East Moloka'i, West Moloka'i, and Central Moloka'i (see Figure 6.3).

Amongst other issues, the increase in land tax has and continues to create financial hardships for ahupua`a and kuleana land owners. The ahupua`a owner is usually able to manage any increase in land taxes, whereas the kuleana owner often is not. Quiet title actions and the inability for kuleana landowners to bring together multiple, undivided interests have caused a shift in the demographics where there are more non-residents purchasing real estate on Moloka'i and driving up land and home values. This also drives up property taxes and forces out remaining families living on their lands and kuleana lands. It has also been creating a lucrative, illegal transient vacation rental scheme where people do not know who their neighbors are, and public beach accesses are blocked. Because there are numerous amounts of kuleana lands in Mana`e, these issues are magnified. This unique Mana`e issue combined with the conventional statewide problems of land tax and development, produces hurdles over which responsible land use and land tax

assessment becomes a problem. Tax burdens on kuleana land owners may be alleviated by Section 3.48.554, MCC, which establishes a real property tax exemption for kuleana land.

**Figure 6.3 Moloka`i Planning Regions**



**East Moloka`i**

The boundaries of East Moloka`i by ahupua`a are from Mākolelau to Hālawa on the south shore, and from Pelekunu to Hālawa on the north shore. This area boundary was chosen because the lands contained within that area match the East Moloka`i Planning Region, are similar in actual use/ownership today, and match the community lifestyle. East Moloka`i is the island’s most remote and sparsely populated region. This region is also known as the East End, or Mana`e, defined as “to the east – a direction.”<sup>48</sup> East Moloka`i rises to the summit of Kamakou at 4,970 feet. This mountainous region has been sculpted by heavy windward rainfall creating the deep verdant valleys of Pelekunu, Wailau, and Hālawa. The primary land uses are conservation and cattle ranching, with small rural settlements along the southeast coast at `Ualapu`e, Pūko`o, Pauwalu, Waialua, and Hālawa. The southeast shore is also known for its historic fishponds, some of which are currently being restored.

**Central Moloka`i**

The boundaries of Central Moloka`i by ahupua`a are from Kawela to Pālā`au on the south shore, and from Kahanui to Pālā`au on the north shore. Central Moloka`i is a varied landscape of high verdant forested plateaus, rugged and gentle coastlines, and a dry central plain that when irrigated provides some of the most fertile agricultural lands in Hawai`i. Kaunakakai is the principal commercial, civic, and population center of the island with 47 percent of total

<sup>48</sup> Pukui, Hawaiian Dictionary, 1971, University of Hawaii Press.

island population. Other Central Moloka`i population centers include the former plantation town of Kualapu`u and the Hawaiian homesteads at Ho`olehua and Kalama`ula. The island's primary industrial site is in the Moloka`i Industrial Park at Pala`au and near the shore in Kaunakakai.

Central Moloka`i is also the island's bread basket. Agricultural resources include approximately 11,500 acres of Prime Agricultural Land<sup>49</sup>, the Moloka`i Irrigation System, and the island's only State-owned agricultural park, comprising 753 acres (see Map 6.1). Moloka`i's agricultural lands support the island's existing agricultural economy, provide the opportunity for subsistence agriculture, provide future opportunities for agricultural enterprises, and significantly contribute to the island's vast open space and rural character. While Moloka`i's agricultural lands are not under the level of pressure from encroaching urbanization like other areas in the State, implementation of tools to protect these lands is a proactive step to ensure these resources are available for future generations.

### **West Moloka`i**

West Moloka`i includes primarily the ahupua`a of Kaluako`i, and the coastal portions of Ho`olehua and `Iloli ahupua`a on the south shore. West Moloka`i is on the hot and dry leeward side of the island. Its highest elevation, 1,381 feet, is at Pu`unana. Cattle ranching is the dominant land use in the region.

Kaluakoi Hotel closed in 2001, followed by the opening of the Lodge at Moloka`i Ranch and the Moloka`i Beach Village Tent Cabins at Kaupoa Beach in 2002. However, despite efforts to make Moloka`i Ranch profitable, all of its West Moloka`i operations were shut down in 2008. As a result, economic activity and the visitor population in West Moloka`i have declined. Some condominiums and single-family homes remain in the Kaluako`i- Pāpōhaku area, and limited services remain in Maunaloa for the town's small population. As of 2015, Moloka`i Ranch is pursuing enterprises in animal husbandry, farming, renewable energy, and hospitality.

### **B. Relationship of Community Plan Designations and County Zoning**

Under Section 8-8.5(5), Revised Charter of the County of Maui (1983), as amended, "community plans created and revised by the citizen advisory committees shall set forth, in detail, land uses within the community plan regions of the county." Historically, land use designations in the various

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<sup>49</sup> State Department of Agriculture, November 1977. Agricultural Lands of Importance to the State of Hawaii Revised.

County community plans have been described generally and have not included a detailed list of permitted uses, standards, and regulations to implement the designations. The zoning code by law is enacted consistent with the community plans of the County. Zoning districts within the code are described specifically and include permitted uses and standards necessary to regulate and maintain the character of the zoning districts. The zoning districts have statements of purpose and intent that align with the descriptions of land use designations in the community plans of the County. For each community plan land use designation, there may be one or more zoning districts that establish uses consistent with those envisioned by the community plan. If a land use designation does not have a typical, matching or corresponding zoning district, a new zoning district(s) will be established in the Maui County Code.

In lieu of repeating in detail the allowable land uses within the Moloka`i Island Community Plan area, Appendix 6.1, Comparison of Moloka`i Island Community Plan Designations and Typical County Zoning Districts, sets forth each community plan land use designation applicable on Moloka`i and identifies the zoning district or districts that would typically allow the uses envisioned by the community plan.

The Moloka`i Island Community Plan land use map (collectively, Maps 6.2 through 6.4) has been prepared in compliance with the requirements of Sections 2.80B.070(A) and (E)(14), MCC. For site-specific determinations of community plan land use designations and zoning, please contact the Department of Planning, Zoning Administration and Enforcement Division.

### **C. FUTURE CONDITIONS**

The *Land Use Forecast Island of Moloka`i Maui County General Plan Technical Resource Study*<sup>50</sup> concludes that sufficient developable lands currently exist on Moloka`i to meet future demand for housing units, visitor units, and commercial and industrial space through the year 2035. This supply of land is in areas identified on the 2001 Moloka`i Community Plan Map for urban type uses. See Appendices 6.1 and 6.2 for descriptions of Community Plan Designations and relationship to State Land Use Districts and County Zoning. The majority of the identified vacant residential land supply is in Kaluako`i and is designated in the Plan as single family and multi-family residential. Kaunakakai contains a lesser amount of vacant residential land located

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<sup>50</sup> County of Maui Department of Planning. (October 2013). *Land Use Forecast Island of Moloka`i Maui County General Plan Technical Resource Study*.



primarily *mauka* of the existing town. Infill opportunities exist within Kaunakakai town and in `Ualapu`e, Kawela, Kualapu`u, Ho`olehua, Kalae, and Maunaloa.

The potential future impacts from sea level rise to existing coastal development are important factors to consider for Moloka`i. Some of the island's existing development and vacant land supply along the south shore, East End, and in Kaluako`i may be impacted by future sea level rise, increased coastal flooding, and expensive flood hazard insurance rates. The Moloka`i community acknowledges that over time sea level rise will likely necessitate transitioning the island's commercial and population center from Kaunakakai to an area away from the threat of sea level rise and other coastal hazards. The Plan identifies approximately 98 acres mauka of Kaunakakai as a project district for this purpose. The Plan also puts forth land use planning principles and standards and supporting policies and actions to direct growth to areas not vulnerable to sea level rise and coastal hazards and conducive to providing housing for residents proximate to employment and services. The purpose is to ensure Moloka`i will grow in a balanced and sustainable manner that respects cultural and natural resources compatible with Moloka`i's rural lifestyle.

**Maunaloa Project District**

The objective of the project district at Maunaloa is to provide a mixture of single family and multi-family and park uses for low-and moderate-income residents. Variations in housing unit types, lot sizes, and other development standards should be considered to provide planning flexibility and encourage affordable housing.

**Kaunakakai Project District**

The objective of the project district at Kaunakakai is to provide an area for the town to move mauka overtime as sea level rise begins to impact existing development and land use. Uses will include single family, park, public/quasi-public, and commercial.

**Land Use Planning Principles and Standards**

- 1. Protect ecological diversity, natural resources, culturally sensitive lands, and agricultural lands, and avoid hazard-prone lands when identifying future growth areas.** Moloka`i's ecology, natural and cultural resources, and agricultural lands are important for both current and future generations.
- 2. Protect open space and scenic landscapes.** Open space should be preserved to retain Moloka`i's rural character and to separate and define distinct edges of communities. Scenic landscapes, viewsheds, and view corridors are integral to place identity and should be retained.
- 3. Strengthen existing communities through infill and redevelopment.** Support revitalization of existing communities and infill development on underutilized infill lots, where appropriate, outside of hazard-prone areas.
- 4. Promote equitable and livable communities with compatible land use designations.** Moloka`i's small towns should provide a mix of housing types and affordability, compact and pedestrian-oriented development, access to parks and open space, and a mix of compatible and complementary land uses. Future growth areas will be contiguous or proximate to existing employment and/or housing, and located where infrastructure and public facilities can be provided in a cost-effective manner.

## **D. ISSUES**

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- Issue 1: There is no comprehensive zoning map for Moloka`i and the existing zoning code and Interim zoned lands present significant obstacles due to inconsistencies with the community plan.
- Issue 2: The Special Management Area boundary does not protect some areas of the near-shore environment and coastal resources and extends inland in areas that are not likely to have coastal impacts.
- Issue 3: There are potential future impacts from SLR to existing coastal development that are not adequately addressed.

## **E: GOAL, POLICIES, AND ACTIONS**

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**Goal** Moloka`i's land use pattern will protect agricultural lands, open space, and natural and cultural resources, and support livable small towns and rural communities.

### **Policies**

1. Ensure all lands are zoned for specific land uses and zoning standards consistent with Plan policies.
2. Support the revitalization of Maunaloa Town and Kaluako`i resort area.
3. Direct growth to vacant and underutilized infill lots outside of hazard prone areas and proposed expansion areas as shown on the Moloka`i Island Community Plan Land Use maps (see Maps 6.2 – 6.4) and as described in Section B, Future Conditions.
4. Limit urban zoning to areas designated for urban use on the Moloka`i Island Community Plan Land Use maps (see Maps 6.2 – 6.4).

5. Where possible, site community facilities such as schools, parks, libraries, and community centers within walking and biking distance of residential areas.
6. Facilitate the provision of infrastructure and public facilities and services prior to, or concurrent with development, including provision for on-going maintenance through district funding or other funding mechanisms.
7. Work with DHHL and other large landowners to coordinate land use, infrastructure, and public facility planning when feasible.
8. Establish a predictable and timely review process to facilitate the approval of projects that meet planning and regulatory requirements.
9. Discourage developing or subdividing agricultural lands for residential uses where the residence will be the primary use and agricultural activities will be secondary uses.
10. Encourage green belts, open space buffers, and riparian zones to minimize conflicts between agriculture, residential, and industrial uses.
11. Support expansion of the Moloka`i Agricultural Park as demand warrants.
12. Regulate land use in a manner that reaffirms and respects customary and traditional rights of Native Hawaiians as mandated by Article 12, Section 7, Constitution of the State of Hawai`i.
13. Support the expansion of the State Conservation District boundary, where warranted, for environmental preservation and habitat enhancement.
14. Discourage hotel and multi-family development on the East End.
15. Support and recognize community created subarea descriptions.

16. Evaluate the impact public utility facilities development and land use changes will have on natural and cultural resources, cultural practices, and Native Hawaiian burials.
17. Consult with and solicit input from community members, including community members with generational knowledge, early and often about how to minimize the impact of proposed changes to the use of land on cultural practices, cultural sites, and culturally significant areas, including burials.
18. Support the development of a climate change policy and adaptation plan to address rising sea levels and beachfront housing and development on Moloka`i.
19. Identify and protect Mana`e's numerous cultural and natural resources through adoption of a "Traditional Land Use" Overlay Designation. The boundaries of the Overlay should be from Makolelau to Halawa on the south shore. Adoption of this TLU Overlay means that any proposed development in Mana`e should be aligned with the data and community recommendations from the Mana`e GIS Mapping Project (COM, 2008) and the Traditional and Cultural Practices Report for Mana`e (OHA, 2016). In addition, this area should allow for traditional Hawaiian structures to allow people to live in these sensitive areas to take care of them.

**Actions**

<b>Table 6.2 Land Use Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
6.1.01	Adopt a comprehensive zoning map for Moloka`i. Conduct a comprehensive review of interim zoned lands to identify and adopt zoning that is consistent with the Plan.	PD	`Aha Kiole o Moloka`i
6.1.02	Amend the zoning code to facilitate the development of mixed-use, pedestrian-oriented communities.	PD	`Aha Kiole o Moloka`i
6.1.03	Implement County responsibilities under Part III, Chapter 205, HRS to designate and establish IAL and the incentives therein.	PD	`Aha Kiole o Moloka`i
6.1.04	Review the SMA boundary and make changes as necessary to comply with the objectives and policies defined Section 205A-2, HRS, and incorporate best available information on Climate Change and SLR.	PD	`Aha Kiole o Moloka`i

<b>Table 6.2 Land Use Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
6.1.05	Research and review poor or highly sloped agricultural lands for conversion to different designations.	PD	`Aha Kiole o Moloka'i
6.1.06	Study viable options for transitioning Moloka'i's commercial and population center away from the threat of SLR and coastal inundation.	PD	`Aha Kiole o Moloka'i
6.1.07	Identify important subsistence use, lands, and resources.	OED	`Aha Kiole o Moloka'i
6.1.08	Research and develop a climate change policy and adaptation plan to address rising sea levels and beachfront housing and development.	PD	`Aha Kiole o Moloka'i Moloka'i Community

<b>Table 6.2 Land Use Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
6.1.09	Adopt a "Traditional Land Use" (TLU) Overlay into the Community Plan Designations. The County PD should look at existing Community Plan Designations and County Zoning in Mana'e and recommend zoning adjustments based on current land use suitability analysis methods, as well as on the community recommendations included in the Mana'e GIS Mapping Project (COM, 2008) and the Traditional and Cultural Practices Report for Mana'e (OHA, 2016).	PD	`Aha Kiole o Moloka'i Moloka'i Community
6.1.10	Research and conduct viable options to alleviate tax burdens on kuleana land owners, potentially by basing assessments on actual use rather than potential use value. Also, review Section 3.48.554, MCC, for possible amendments.	PD	`Aha Kiole o Moloka'i Moloka'i Community



## 6.2 Housing

Housing affordability is a significant issue throughout the County of Maui, and Moloka`i is no exception. Shortages of reasonably priced housing can contribute to high rates of crowding, lower ownership rates, and impact the overall quality of life within a community. Additionally, investment or second home purchases may increase housing prices if the properties are used as tourism rentals rather than owner-occupied or long-term rental homes.

Housing affordability can improve when residences are built near employment, services, and existing infrastructure, and outside of flood hazard areas. Mixed-use communities allow residents to live near their workplace and services reducing transportation costs. The ability of residents to purchase or rent can also improve when there is an accessory `ohana unit to provide rental income or to house family members. Housing development plans must address factors affecting affordability, community character, and special needs populations, such as disabled residents and the frail elderly.

It is also important for new development to provide a variety of lot sizes, housing types, tenures and price points that accommodate a range of household types, life stages (e.g. single, married, with children, multigenerational, etc.) and income levels. Ensuring housing variety on Moloka`i will increase residents' ability to remain on the island when family or economic circumstances change.

### A. EXISTING CONDITIONS

The majority of the housing units on Moloka`i were built before 2010. Of these, more than half were built in the 1970s or earlier. Only 10 percent of units were built on Moloka`i between 2000 and 2010. Central Moloka`i's home construction peaked in the 1970s, while West Moloka`i's construction peaked in the 1980s.<sup>51</sup>

Moloka`i's housing stock is predominantly single-family units, which limits housing options and can present challenges when residents experience family or economic changes. The existing housing stock includes 2,623 single family units and 879 multi-family units, for a total of 3,502 units.<sup>52</sup> The 2010 vacancy rate was 28 percent, slightly higher than on Maui Island (23 percent and Lāna`i 25 percent). Moloka`i's household size is 2.92 persons per dwelling unit.<sup>53</sup> The 2008 great recession and shut down of Moloka`i Ranch operations likely had an impact on the high vacancy rate.

<sup>51</sup> County of Maui, Department of Planning. (October 2013). *Land Use Forecast Island of Molokai*.

<sup>52</sup> Ibid.

<sup>53</sup> U.S. Census Bureau, 2010.

Affordable housing is defined by the U.S. Department of Housing and Urban Development (HUD) as housing for which the occupants are paying no more than 30 percent of their income for gross housing costs, including utilities. By this standard, more than half of Moloka`i renters and homeowners pay affordable rents or monthly ownership costs, indicating that housing is more affordable on Moloka`i compared to the rest of Maui County.

Figure 6.4 shows that from 2007 to 2011, 49 percent of Moloka`i renters paid more than 30 percent of their household income for housing costs versus 53 percent of Maui County renters and 56 percent of renters statewide.<sup>54</sup>

**Figure 6.4 Gross Rent as a Percentage of Household Income**

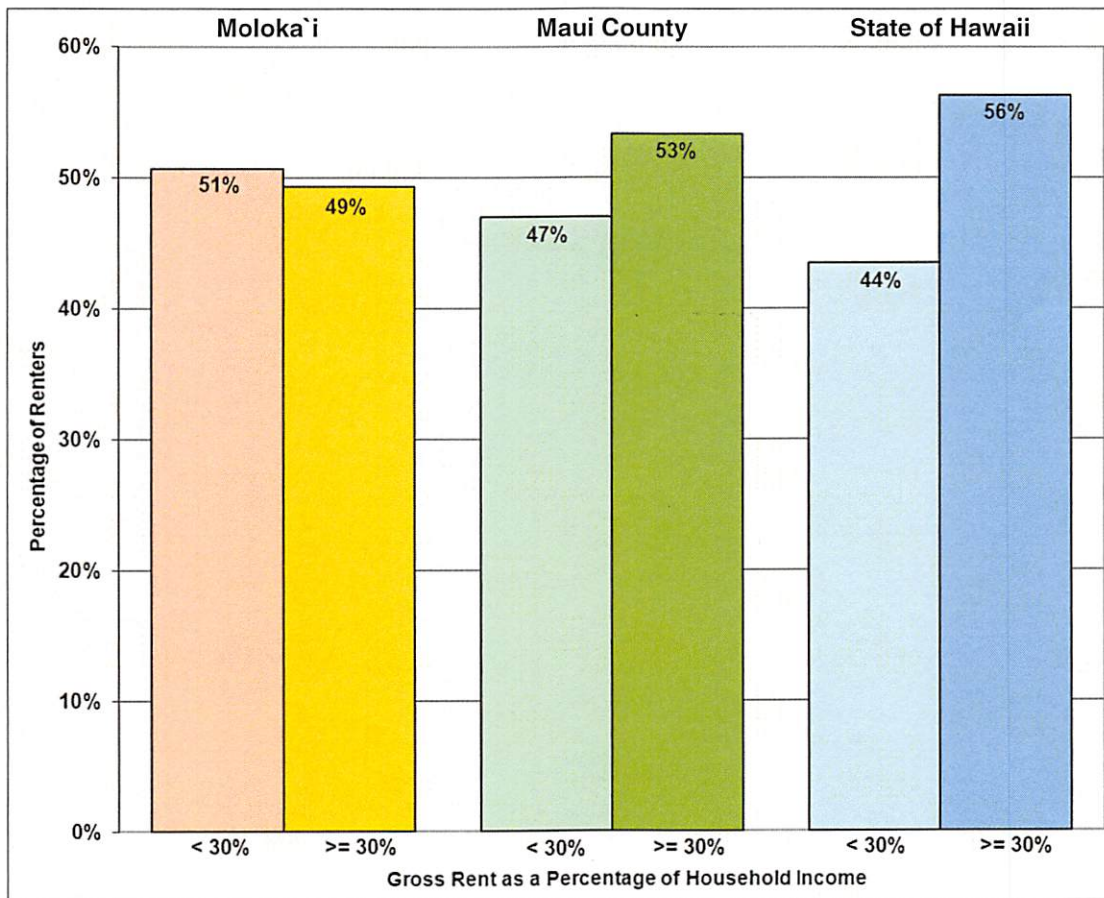


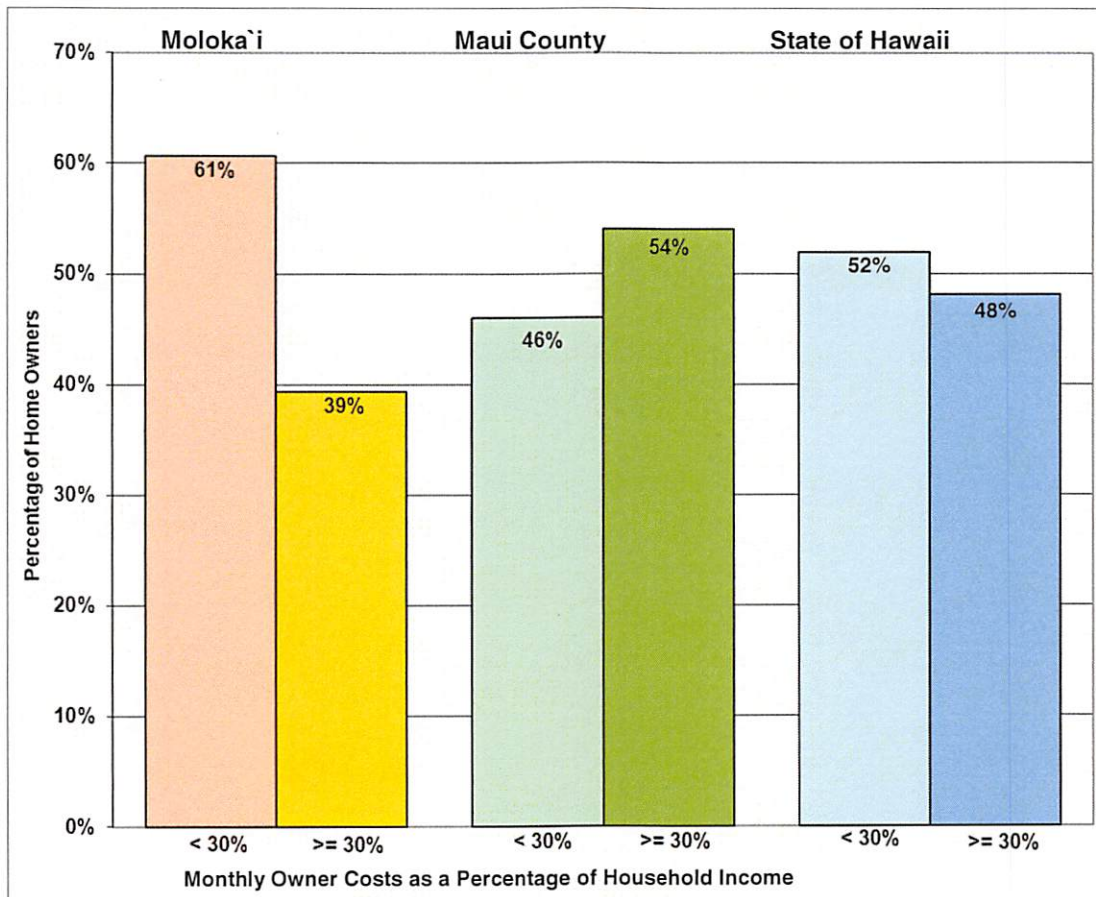
Figure 6.5 shows that from 2007 to 2011, 39 percent of Moloka`i home owners with mortgages paid more than 30 percent of their household income for housing

<sup>54</sup> U.S. Census Bureau, *2009-2013 American Community Survey 5-Year Estimates*.

ownership costs versus 54 percent of Maui County homeowners and 48 percent of owners statewide.<sup>55</sup>

There are several factors inhibiting the development of a long-term supply of affordable housing on the island including the weak economic base, high construction costs, few vacant lots with infrastructure in place, lack of available financing, and the presence of numerous undocumented or poorly documented wetlands and archaeological sites on residential lots of record.

**Figure 6. 5 Monthly Owner Costs as a Percentage of Household Income**



Currently two agencies are working to make more affordable housing available on Moloka`i: (a) the DHHL, and (b) Moloka`i Habitat for Humanity. DHHL’s planned total housing unit build out to 2025 for new lots is as follows: 422 new residential homestead lots and 350 new agricultural lots, located in Na`iwa, `Ualapu`e, Kamiloloa, Kapa`akea, Makakupa`ia, Kalamaula, and Ho`olehua.<sup>56</sup> Additionally, the County of Maui’s workforce housing ordinance, Section 2.96, MCC, requires

<sup>55</sup> Ibid.

<sup>56</sup> Group 70 International. (June 2005). *Department of Hawaiian Homelands Molokai Island Plan*.

developers proposing new development to provide a certain percentage of affordable housing.

Moloka`i has an aging population that requires supportive services and senior housing options, and this need is projected to increase in the future. Moloka`i has one senior housing facility with approximately 85 units for low and moderate-income seniors; however, there is no long-term residential care facility on the island. Moloka`i General Hospital can provide skilled nursing care and intermediate care, but it is neither equipped nor staffed to be a long-term residential care facility.

## **B. ISSUES**

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- Issue 1: There is a need for more affordable housing and affordable residential building sites.
- Issue 2: There is a lack of housing choices, including ownership and rental, at different price levels and housing sizes.
- Issue 3: There is an increasing need for housing and services for special needs populations.

## **C: GOAL, POLICIES, AND ACTIONS**

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**Goal**     **A diverse supply of housing for Moloka`i residents that is affordable, safe, and environmentally and culturally compatible.**

### **Policies**

1. Support regulations to maintain an adequate supply of affordable housing.
2. Require that County mandated affordable housing include a buy-back provision, so these units will remain in the affordable housing stock.
3. Maintain a supply of government subsidized affordable rental housing.

4. Encourage development of a range of lot sizes and housing types (e.g. single family, `ohana units, duplexes, multi-family, and live-work units) to expand housing choices and price points.
5. Encourage new housing to be developed in locations conducive to affordability, for example, proximate to jobs, services, infrastructure, and public facilities, and outside of flood hazard areas.
6. Support the establishment of long-term residential care facilities and a diversity of appropriate housing opportunities for residents with special needs.
7. Explore the establishment of a community land trust to improve access to affordable land and housing.
8. Develop strategies to manage the transient homeless issue on Moloka`i.
9. Encourage DHHL to establish a building code that protects public health and safety and benefits DHHL beneficiaries.
10. Address senior services and increase diversified economic development.

**Actions**

<b>Table 6.3 Housing Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
6.2.01	Establish partnerships to continue to implement a comprehensive affordable housing plan for Moloka'i that addresses both ownership and rental affordability.	DHHC	NGOs Community Groups
6.2.02	Establish partnerships and support a housing rehabilitation program, including loans, grants, technical assistance, and community outreach.	DHHC	DHHL
6.2.03	Amend the zoning code to allow a greater variety of housing types to address affordability, including mixed-use, mixed housing types, co-housing, prefabricated homes, and small lots.	PD	DHHC DHHL NGOs
6.2.04	Work with developers to support their efforts to secure/leverage grants, new home buyer tax credits, low income housing tax credits, and other resources that support affordable housing, such as housing models that can be built affordably.	DHHC	
6.2.05	Investigate whether a community land trust would consider operating on Moloka'i.	DHHC	PD
6.2.06	Establish a cap on Transient Vacation Rentals and Short-Term Rental Homes.	PD	County Council Moloka'i Planning Commission

## **7 | COMMUNITY DESIGN**

Some of the most distinctive aspects of Moloka`i are its wide-open spaces, small towns, varied landscapes, and architecture, which reflects both Hawaiian tradition and the island's plantation history. They collectively create an identity unique to Hawai`i, perhaps best expressed in a sign commonly seen on the island – “Keep Moloka`i, Moloka`i.”

During several community plan workshops, many residents on Moloka`i voiced a desire to maintain and enhance Moloka`i's rural character and natural beauty. New growth will require special attention to ensure that the rural, historic character of Moloka`i's small towns is retained. Creating County historic districts in selected locations could help address the loss of historic structures.

### **A. Existing Conditions**

Moloka`i's rural character is reflected in its settlement patterns, housing, streetscapes, roadways, public spaces, and the design of public institutions. Remnants of this era are found in Maunaloa, Kualapu`u, Ho`olehua, Kaunakakai, and parts of the East End. While Kaunakakai is compact and still retains its country town character, it could benefit from some careful design to enhance the natural beauty and improve walkability. Improving sidewalks and creating bike paths will also accommodate our aging population who do not drive but are able to get around on motorized wheelchairs. Unfortunately, the historic character of the streetscapes and buildings has been compromised by some demolitions and unpermitted construction.

One of the most important tools the County has to address this incremental loss of architectural history is the Country Town Business District Design Guidelines. These guidelines, which are outdated and need to be updated, cover the small towns of Kaunakakai, Maunaloa, and Kualapu`u along with the East End. Although the current version is over 20 years old, it is the only planning document that defines appropriate site design, street design, and architectural design standards.

Despite slow growth over the past 30 years, many of Moloka`i's historic buildings have been significantly modified. As an example, the plantation-town character of Maunaloa was substantially altered when many of its plantation era homes were demolished. In addition, there is little commercial activity in the town, resulting in several vacant commercial buildings.

### **Design Principles**

**Preserve and maintain the traditional features of the built and natural landscape that reflect Moloka`i's history and give the island its distinctive character.**

Some of the character-defining features include the wide-open spaces between communities, unobstructed views of the ocean, access to the shoreline, and simple, understated buildings.

**Encourage a mix of land uses in Moloka`i's small towns.** Encourage a mix of commercial, residential, and service uses to strengthen the island's small towns, reduce the need for travel, and make efficient use of infrastructure.

**Preserve and enhance the historic character of Moloka`i.** Renovate historic structures as a way of maintaining Moloka`i's history. Design new buildings and other improvements to complement and enhance the town's historic character.

**Develop a circulation system and facilities to accommodate a variety of travel modes - bicycles, pedestrians, buses, and vehicles.** Create a comprehensive network of travel options, with an emphasis on the pedestrian experience. Even as more areas are developed, they should be part of an island-wide transportation system that encourages and accommodates a variety of travel modes to serve both residents and visitors.

**Maintain a pedestrian orientation in Moloka`i's small towns.** Preserve and enhance sidewalks, parks, and other open spaces in small towns and other community areas to provide connectivity between land uses and offer a safe, inviting, and comfortable pedestrian experience.

## **B. ISSUES**

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**Issue 1:** The character of Moloka`i and its small towns is an essential part of the island's identity that could be compromised by new development that is out of scale and is visually incompatible.



## C. GOAL, POLICIES, AND ACTIONS

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**Goal**            **The rural character of Moloka`i's small towns and the island's open spaces will be maintained and enhanced.**

**Policies**

1. Support the use of updated Business Country Town Design (BCT) Guidelines to ensure that the island's historic and rural character is maintained.
2. Use the cultural significance of Malama Park for a design concept that connects Kaunakakai with the ocean.
3. Encourage the preservation of buildings, structures, and sites of historic and cultural significance.
4. Maintain Kaunakakai's business development and historical character.
5. Promote and support projects that create a pedestrian-friendly environment with street trees, benches, and other features in Moloka`i's country towns.
6. Maintain and enhance the rural character of the Kaluako`i area through low-impact site design and development practices.
7. Encourage creative innovative approaches to site design, subdivision layout, and architecture to maintain the island's rural character and to protect coastal areas, natural resources, and cultural/historic resources.
8. Concentrate future growth in and around existing development that maintains County rural standards and is located outside of the flood inundation zone.
9. Promote the use of sustainable building and development practices, such as those presented in the Leadership in Energy and Environmental Design (LEED) standards.

10. Encourage the use of the *Maui County Planting Plan Third Edition*. Encourage the use of Hawaiian plants (Indigenous and Polynesian-introduced plants) by State, County, and private landowners in order to support a Hawaiian sense of place, to ensure that our cultural heritage is reflected in landscaping, and to help reverse the displacement and decline of Hawaiian plants.

**Table 7.1 Community Design Actions**

No.	Action	Lead County Agency	Partners
7.01	Amend the 1993 <i>Design Guidelines For Country Town Business Districts Molokai-Hawai'i</i>	PD	Moloka'i business and design professionals and community
7.02	Develop sub-area development plans for Kaunakakai, Maunaloa, Kaluako'i Kualapu'u / Ho'olehua, and the East End of Moloka'i.	PD	Community Groups
7.03	Develop a pedestrian linkage between Malama Park and Kaunakakai through streetscape improvements.	PD	DPR DLNR
7.04	Develop and adopt small town street design standards that are appropriate for Moloka'i and within Department of Public Works' standards.	DPW	PD
7.05	Create a funding source or mechanism for small business owners to renovate businesses in the island's small towns.	OED	PD
7.06	Develop incentives to promote the use of sustainable green building and development practices.	DPW	OED or Energy Coordinator
7.07	Develop practicable incentives for Moloka'i businesses and property owners to implement sub-area development plan projects designed to preserve, maintain, and enhance buildings, structures, sites, viewpoints, pedestrian ways, and streets.	PD	PR DPW

**Table 7.1 Community Design Actions**

<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
7.08	Conduct a study to improve walkability in Kaunakakai.	PD	PR DPW NGOs
7.09	Review and update Chapter 16.26B, MCC, relating to indigenous architecture, as appropriate.	PD	
7.10	Investigate options to share the cost of BCT guideline requirements for infrastructure upgrades among all Kaunakakai businesses, such as an Assessment District, so that renovations are economically feasible.	PD	

## 8 | INFRASTRUCTURE

Safe, reliable, and efficient hard infrastructure and utility systems are critical to the economic vitality and quality of life on Moloka`i. Roads, bridges, harbors, airports, water, wastewater, solid waste, energy, telecommunications, and public transit systems provide necessary support for modern life on the island. Responsibility for the installation, operation, and maintenance of these systems is shared between a number of public and private entities. Map 3.3 depicts Moloka`i's State Historic Districts, places of interest, and other cultural resources. Planning for the installation of new systems and the replacement of deteriorating systems may require coordination among these entities as well as the identification of additional funding sources since County Capital Improvement Program budgets are already strained. Consideration should be given to locating future development near existing infrastructure to leverage prior capital investments and to minimize the high cost of installing new systems. (See Map 8.1)

### **Climate Change and Infrastructure Systems**

SLR and the associated coastal impacts have the potential to harm an array of infrastructure and environments on Moloka`i including low lying coastal roads, docking facilities in harbors, water supply, and wastewater systems. These impacts can stress an already ailing infrastructure. Wastewater systems, stormwater infrastructure, water supply, and energy facilities are located in low-lying areas in close proximity to the coast. Potable water supply faces threats from rising groundwater and saltwater intrusion in wells and declining quality and quantity due to drought and downward trends in groundwater base flows.

Improving water system resiliency by developing strategies to adapt to environmental challenges, such as drought and climate change, will be important going forward. This will require identification of critical infrastructure systems vulnerable to coastal hazards such as SLR to ensure they are adequately protected or relocated. For Moloka`i to have a more sustainable future, it will be necessary to incorporate green infrastructure to restore natural systems.

## **8.1 WATER**

### **A. EXISTING CONDITIONS**

There are three public water systems on Moloka`i and three private water systems. Most of Moloka`i's water sources are concentrated in the northeast part of the island, whereas most of the demand is located in the more developed areas in central and west Moloka`i, and the southeast coast. Water sources include both surface water and groundwater.

Due to increasing withdrawals, several wells have been experiencing rising salinity and, as a result, the State Commission on Water Resource Management (CWRM) designated the island as a Ground Water Management Area in 1992. With this designation, the State was authorized to protect the groundwater resources by managing withdrawals from the aquifer through use of a permitting process. In 1994, the EPA designated Moloka`i as a Sole Source Aquifer, meaning the aquifer supplies more than 50 percent of Moloka`i's drinking water.

Moloka`i Irrigation System (MIS) water usage has remained constant over the years; however, the system has experienced water shortages due to persistent drought conditions. Predicted population increases would place greater demands on water supply. Efforts to develop new water resources have been considered, such as utilizing brackish water wells and recycled sewage effluent. The County Capital Improvement Program budget includes design of a new well that is intended as backup source for the Kualapu`u well serving the Kaunakakai area.

### **B. ISSUES**

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- Issue 1: Much of Moloka`i's water delivery system infrastructure is outdated, inefficient, and in need of replacement.
- Issue 2: Potentially contaminating activities have been identified that may pose a threat to Moloka`i's water quality.<sup>57</sup>
- Issue 3: Water uses need to be resolved collectively.
- Issue 4: Cyclical and seasonal water shortages have contributed to water supply shortages in recent years.

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<sup>57</sup> Molokai Draft Wellhead Protection Ordinance, 2013

## **C. GOAL, POLICIES, AND ACTIONS**

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**Goal**     **Moloka`i will have a sufficient supply of potable and non-potable water provided in an environmentally sustainable and cost-effective manner.**

### **Policies**

1. Adhere to priority water rights of Native Hawaiians under the Hawaiian Homes Commission Act and the State Water Code. Protect, restore, and enhance surface and subsurface water sources, stream habitats, and forested watershed areas to support water recharge, aquatic and environmental processes, and riparian, scenic, recreational, and Native Hawaiian cultural resources, as well as constitutionally protected traditional, customary, and DHHL water rights.
2. Supply water in sufficient quantities to meet the communities' needs while protecting freshwater ecosystems and species.
3. Support the provision of adequately priced irrigation water to agricultural lands.
4. Ensure safe, efficient, and reliable island-wide water systems through protection, improvement, regular testing, replacement, and enhancement of the existing water supply and development of new water sources.
5. Encourage CWRM to update Moloka`i's sustainable yield figures and establish maximum withdrawal values.
6. Encourage water resource conservation.
7. Encourage use of alternative water sources such as dual-line water supply and recycled water distribution systems.
8. Support public and quasi-public partnerships to protect and restore the island's watersheds and maximize aquifer recharge.
9. Support better management and oversight of water withdrawal to ensure sustainable yields for both human consumption and protection of freshwater ecosystems and native species.

10. Incorporate credible local knowledge and advice on water resource issues as appropriate per the CWRM and DOH authority.
11. Support the completion of an agricultural master plan.
12. Encourage CWRM to establish and adhere to interim instream flow standards.
13. Recognize that water is held in trust by the State, for the benefit of the people. Public trust purposes, which receive priority over private commercial uses, include domestic uses, Native Hawaiian and traditional and customary rights, appurtenant rights, environmental protection, and reservations for DHHL.<sup>58</sup>
14. Support the protection, restoration, and enhancement of surface and subsurface water resources, stream habitats, and priority watershed areas to support groundwater aquifer recharge, aquatic and environmental processes, and riparian, scenic, recreational, and Native Hawaiian cultural resources, as well as constitutionally-protected Native Hawaiian traditional and customary practices.<sup>59</sup>
15. Support mauka to makai stream flow as essential to the survival of native stream life.

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<sup>58</sup> See *Waiahole I*, 94 Hawaii 137-39 and *Wai`ola o Molokai*, 103 Hawaii 401, 431, (2004). See also, Haw. Const. Art. XI Secs. 1 & 7, Art. XII Sec. 7; HRS §§ 1-1, 7-1, 174C-101; HRS Chapter 174C; *In re Water Use Permit Applications*, 94 Hawaii 97, 9 P. 3d 409 (2000) (*Waiahole I*); *Ko`olau Agricultural Co., Ltd. V. Comm'n on water Res. Mgmt.*, 83 Hawaii 484, 927 P.2d 1367 (1996); *Reppun v. Bd. Of Water Supply*, 65 Hawaii 531, 656 P.2d 57 (1982). For additional information, see also D. Kapua`ala Sproat, *Ola I Ka Wai: A Legal Primer for Water Use and Management in Hawaii* (2009).

<sup>59</sup> These priority uses of water are constitutionally and statutorily established bases for protecting, and in some cases, restoring stream flow to support traditional and customary uses. See, e.g. *Waiahole I*; see also Section 174C-2(c), HRS (“[A]dequate provision shall be made for the protection of traditional and customary Hawaiian rights...”).

**Actions**

**Table 8.1 Infrastructure – Water Actions**

<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
8.1.01	Support the development of a Moloka`i Water Use and Development Plan that is consistent with the goals, policies, and implementation strategy of the Plan.	DWS	DHHL, DOA Private Water companies Community groups NGOs Cultural Practitioners
8.1.02	Implement recommendations from the 2013 <i>Update of the Hawai`i Water Reuse Survey and Report</i> .	DEM	DLNR, DOH CWRM Community groups Cultural Practitioners
8.1.03	Promote water conservation programs.	DWS	Moloka`i Community
8.1.04	Develop, adopt, and implement a wellhead protection strategy and ordinance for County water distribution systems.	DWS	DOH
8.1.05	Re-establish the Moloka`i Water Working Group and encourage all water purveyors to work together to address future water demand, sustainability, quality, and supply issues.	DWS	DHHL CWRM Other water purveyors
8.1.06	Encourage new developments with privately owned public water systems to meet DWS engineering standards.	DWS	
8.1.07	Explore the possibility of DWS taking over Moloka`i Ranch’s water systems.	DWS	Moloka`i Ranch
8.1.08	Encourage the acquisition of USGS stream gauges to be placed in Moloka`i’s important streams.	DWS	USGS Moloka`i Watershed Partnerships



8.1.09	Develop improved water transmission and/or storage systems to provide better fire protection.	DWS	DHHL Kawela Plantation, DOA Moloka`i Ranch
8.1.10	Continue to fund the watershed partnerships on Moloka`i.	DWS	DLNR, OED

## **8.2 WASTEWATER**

The Maui County Code defines wastewater as “water-carried wastes from dwellings, commercial establishments, institutions and industrial plants, and may include groundwater, surface water and storm water not intentionally admitted.” Management of wastewater is important because it helps guard the water supply from becoming contaminated, protects the public health and environment, and aids in water conservation by allowing reclaimed water to be used for non-potable water purposes. Wastewater on Moloka`i is now managed using public and private wastewater systems, individual septic systems, and cesspools. The main issues with the island’s wastewater systems are vulnerability of the current facility to hazards and the use of the individual septic tanks and cesspools.

### **A. EXISTING CONDITIONS**

The County of Maui Department of Environmental Management, Wastewater Division, provides wastewater service in the town of Kaunakakai and the Kualapu`u subdivision. Wastewater collected by the Kaunakakai system is treated at the County’s Kaunakakai Wastewater Reclamation Facility (WWRF). Wastewater collected by the Kualapu`u system goes to the private facility that is owned and operated by Molokai Properties Limited (MPL), which also serves Maunaloa and Kaluako`i and the Paniolo Hale and Ke Nani Kai condominium developments. There are also private wastewater treatment facilities at Wavecrest Resort, Molokai Shores, and Hotel Moloka`i. The remainder of the island is served by individual septic tanks and cesspools, including all schools, all major visitor accommodations, the Ho`olehua Airport, and all development on DHHL homesteads.

Cesspools are considered substandard systems because they do not treat wastewater; they merely dispose of it. Cesspools concentrate wastewater in one location, often in direct contact with groundwater, causing groundwater contamination. This groundwater flows into drinking water wells, streams, and the ocean, harming public health and the environment. In 2014, the DOH proposed revisions to its Wastewater Systems Rules that will update the regulation of cesspools in Hawai`i. Proposed changes include prohibiting the installation of new cesspools and requiring connections or upgrades of existing cesspools that most affect human health and water quality within one year after the sale of property. Only cesspools that are near a public drinking water well, and those within 50 feet of a shoreline, stream, or wetland will be affected. There are 1,442 cesspools on Moloka`i, with 505 (35 percent) affected by the proposed regulations.

The Kaunakakai WWRF is located on a 23-acre shoreline property makai of Maunaloa Highway. The facility has the ability to treat wastewater to R-2 standards

(disinfected secondary treated recycled water with restrictions on uses and applications). The Wastewater Division has indicated that the 0.3 mgd capacity of the WWRF is currently adequate. This conclusion is supported by the DOH's decision to waive the requirement for development of a facilities plan, which is normally mandated when a facility reaches 75 percent of capacity. There are two County force mains on the island. The Kaunakakai force main was replaced in 2007 and the effluent force main is tentatively scheduled for replacement in fiscal year 2019 at an approximate cost of \$2 million<sup>60</sup>. The Kaunakakai Wastewater Pump Station was upgraded in 2012, extending its useful life by 20 years. In 2009, a closed-circuit television inspection of all major sewer lines was conducted which concluded that the existing system is in very good to excellent condition.

Reclaimed water from the WWRF is utilized to a limited extent. Approximately 10,000 gallons per day (gpd) (4 percent of total flow) are used to irrigate landscaping in the facility and roadway grassed areas. The remaining flow of roughly 265,000 gallons per day is disposed of by injection well. Expansion of water reuse to serve R-1 water to the community center, the park, and the elementary school in Kaunakakai would require a \$5 million, a mile-long distribution system, a new ultraviolet water purification system, and retrofits costing around \$6 million.

## **B. ISSUES**

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- Issue 1: Kaunakakai WWRF is located in the coastal floodplain leaving it exposed to damage from tsunamis or other dangerous high-water events.
- Issue 2: There are a number of Individual Wastewater Systems such as cesspools and septic systems in use on the island in close proximity to ground water drinking sources and shorelines.
- Issue 3: Potable water resources are used for purposes such as flushing toilets and home garden irrigation.
- Issue 4: Cesspools and septic systems located within the coastal zone are at risk of failure due to groundwater table rise because of SLR and flooding.
- Issue 5: The Kaunakakai WWRF is currently operating at a flow rate above the DOH's acceptable rate of 75 percent of capacity.

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<sup>60</sup> County of Maui, 2016 Capital Improvement Program

**C. GOAL, POLICIES, AND ACTIONS**

**Goal**      **Moloka'i will have reliable, efficient, and environmentally sensitive wastewater services that meet future needs and maximize wastewater reuse where feasible.**

**Policies**

1. Meet or exceed State and Federal standards for wastewater disposal or reuse where feasible.
2. Promote development of neighborhood-scale wastewater disposal systems in new subdivisions outside of existing service areas.
3. Promote the beneficial use of recycled wastewater where economically viable.
4. Promote economical, environmentally sensitive, and innovative methods for disposal of excess treated wastewater effluent.
5. Promote location of new critical infrastructure or relocation of existing systems outside of inundation zones vulnerable to coastal hazards.
6. Promote development of new septic system upgrade standards and cesspool elimination standards for those systems at risk within the coastal zone.
7. Encourage updating the Kaunakakai WWTF facilities plan.

**Actions**

<b>Table 8.2 Infrastructure – Wastewater Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
8.2.01	Assess the feasibility of providing measures to protect the Kaunakakai WWTF against inundation threats or to relocate it out of the coastal floodplain.	DEM	DWS DHHL DOA DOH EPA

8.2.02	Conduct a wastewater reuse feasibility study that includes the identification of potential recycled water users, necessary wastewater plant upgrades, required infrastructure improvements, estimated costs, and funding sources.	DEM	DWS DHHL DOA DOH
8.2.03	Explore options and necessary MCC and regulation changes to allow graywater reuse systems for irrigation and toilet flushing.	DEM	DPW DOH
8.2.04	Update the Kaunakakai WWTF facilities plan.	DEM	DOH

### 8.3 Stormwater Management

Moloka`i is formed by three volcanoes: West Moloka`i, East Moloka`i, and the Kalaupāpā Peninsula. West Moloka`i rises to 1,400 feet in elevation and East Moloka`i to about 5,000 feet. In the Kaunakakai watershed, the average elevation is about 5 feet near the coast rising to 4,200 feet in the mountains. Median annual rainfall ranges from about 10 inches on the coast to about 75 inches at the upper elevations.<sup>61</sup>

Stormwater can be viewed as a resource to manage, rather than a problem of excess water to be drained into the ocean. Low Impact Development (LID) features design techniques that attempt to maintain the natural pre-development hydrology of a site and the surrounding watershed, resulting in a more sustainable land development pattern. LID integrates road design with storm and wastewater management systems to minimize environmental impacts and to recharge groundwater when possible.

#### A. EXISTING CONDITIONS

Drainage problems on Moloka`i from runoff during periodic rain and storm events have caused damage to homes and businesses for years. The resulting flooding threatens public health and safety for residents and visitors. A combination of natural and manmade factors contributes to the problem, including poorly drained soils in low-lying areas and flat terrain as well as inadequate, incomplete or poorly maintained drainage systems in Kaunakakai town.

Existing drainage systems were designed to convey, divert, or retain runoff generated within the vicinity. However, many of these systems are regionally inadequate, and many of the downstream systems, including ditches and roadway culverts, are incapable of accommodating the runoff generated from developed conditions upstream. During heavy flows, water will overtop the Kaunakakai Stream crossing over Maunaloa Highway and other low-lying roadways across the island resulting in severely hampered access and flooding mauka of roadways.<sup>62</sup>

The Kaunakakai Stream levee has adequately prevented flooding from occurring within the Kaunakakai area. However, analysis completed in March 2014 by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) showed that the Kaunakakai levee system does not provide a high level of protection against a 100-year flood event. FEMA has proposed revising the Flood Insurance Rate Map (FIRM) and Flood Insurance Study reports. These changes

<sup>61</sup> County of Maui Infrastructure Assessment Update, 2003.

<sup>62</sup> Ibid.

could affect many properties in Kaunakakai. Property owners within the newly mapped high-risk areas with certain mortgages would be required to obtain flood insurance.

## **B. ISSUES**

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- Issue 1: Storm water flows with heavy sediment loads and other pollutants downhill into gulches and the ocean.
- Issue 2: Localized minor flooding causes repeated areas of water ponding or mud accumulation.
- Issue 3: There are many areas of poor drainage throughout the entire island.
- Issue 4: Sheet flow travels down slope along the south shore of Moloka`i, which has little to no stormwater drainage mitigation.
- Issue 5: Stormwater flows not managed adequately may impact wastewater systems and the fringing coral reef.

## **C. GOAL, POLICIES, ACTIONS**

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**Goal**            **Manage surface water runoff to prevent flooding and improve water quality for both fresh and coastal waters.**

### **Policies**

1. Support improvement of the island's drainage system.
2. Provide surface water management for roadways and other impacted areas.
3. Manage surface water using green infrastructure<sup>63</sup> and natural system drainage, retention, and filtration to reduce flooding and siltation of ocean waters.
4. Encourage DHHL compliance with County regulations on drainage.

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<sup>63</sup> Green infrastructure uses natural systems, constructed soil, rock, or plant-based systems for surface and stormwater management.

5. Encourage development of an integrated, effective, and environmentally sensitive stormwater management system from Kalama'ula to Kamalo through a partnership of landowners mauka of Kamehameha V Highway.
6. Support completion of the Kaunakakai drainage system.
7. Encourage the Hawai'i Department of Transportation (HDOT) to reconstruct culverts to 100-year flood-design standards on all State roads.
8. Support policies that encourage private landowners to decrease impervious surfaces on private property to reduce surface water runoff.

**Actions**

<b>Table 8.3 Infrastructure – Stormwater Management Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
8.3.01	Develop a comprehensive stormwater management plan that emphasizes use of natural systems drainage where possible.	DPW	PD DHHL HDOT
8.3.02	Build dispersion and retention facilities to address dirt-road runoff.	DPW	DHHL HDOT
8.3.03	Implement the Kaunakakai Master Drainage Plan.	DPW	HDOT
8.3.04	Inspect, maintain, and if necessary, repair or install new stormwater drainage swales and culverts and remove blockages from drains and channels.	DPW	DHHL HDOT
8.3.05	Prepare a GIS database to inventory existing stormwater infrastructure.	DPW	DHHL HDOT
8.3.06	Evaluate older swales and drains for current functioning and restore, if needed. Add natural drainage storage and filtration to supplement existing system.	DPW	DHHL HDOT
8.3.07	Encourage appropriate Federal and State agencies and private landowners to improve or restore historic wetlands that help to mitigate impacts from stormwater drainage systems.	DPW	DHHL HDOT
8.3.08	Complete the Kaunakakai drainage system.	DPW	HDOT



8.3.09	Reconstruct culverts to 100-year flood specifications on all County roads.	DPW	HDOT
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## 8.4 Solid Waste

### A. EXISTING CONDITIONS

Moloka`i's Integrated Solid Waste Management Facility is located on 25 acres off Maunaloa Highway at Nā`iwa. The facility offers recycling for scrap metals and related materials, including vehicles, drop-box commodities, electronics, used motor oil, redemption containers, and green waste, as well as a landfill that accepts solid waste for the entire island. The landfill receives approximately 13 tons of waste each day. Metals and green waste receive 3 tons per day each with drop-box commodities at 0.5 tons per day and redemption containers at 0.5 tons per day. Approximately \$3 million were expended in 2014 to construct Cell No. 4, providing additional waste disposal capacity until 2021. *The Molokai Integrated Solid Waste Management Facility Master Plan* projects construction of Cell 5 in 2019 and Cell 6 in 2025.

In 2009, the Department of Environmental Management's Solid Waste Division updated the Countywide *Integrated Solid Waste Management Plan* (ISWMP). The ISWMP provides a comprehensive blueprint for the planning and expansion of the County's solid waste management system. The ISWMP has a goal of achieving a 60 percent recycling of the waste stream. Moloka`i currently recycles 35 percent of its waste stream (the same as Maui). Although there is no curbside recycling on Moloka`i, the recycling center offers drop-off site containers for recyclables from both residential and commercial customers for cardboard, newspaper, glass, plastic, bi-metal containers, used motor oil, and electronics. The Moloka`i metals facility accepts scrap metals, appliances, vehicles, tires, propane tanks, and batteries during landfill hours. Also located at the landfill is the green waste facility, which accepts green waste for grinding and composting into piles. The processed green waste is available to the public at no charge.

### B. ISSUES

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- Issue 1: More solid waste needs to be diverted to the recycling center.
- Issue 2: There is a problem with illegal dumping throughout the island.
- Issue 3: There is no legally operating junkyard on Moloka`i.
- Issue 4: Landfill hours need to be re-evaluated for community convenience.

## C. GOAL, POLICIES, AND ACTIONS

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**Goal**            **Moloka`i will minimize the volume of solid waste that enters the island's landfill through a comprehensive and environmentally sound approach to solid waste management.**

**Policies**

1. Make County government operations a model for zero waste.
2. Continue to expand upon existing public education programs and measures related to waste reduction.
3. Continue to support increased recycling by commercial and residential customers, including bulky, hazardous, and metal waste materials.
4. Continue to support the development of efficient and cost-effective ways to deal with obsolete and abandoned vehicles, machinery, and appliances.
5. Ensure that all solid waste and recycling facilities are landscaped and well maintained.
6. Ensure that leachate from landfill sites, either expanded or new, does not degrade soil or pollute ground, surface, or coastal waters and dispose of leachate in an environmentally sound manner.
7. Support efforts to instill better education about hazardous waste disposal.
8. Explore the possibility of developing a "cradle to cradle" recycling program.
9. Encourage the Department of Education to expand recycling efforts at Moloka`i's schools.
10. Encourage the sale and use of highly compostable flatware and food containers.
11. Establish "user friendly" hours for the landfill.

**Actions**

<b>Table 8.4 Infrastructure – Solid Waste Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
8.4.01	Expand waste diversion and recycling programs that include appliances, metals, plastic, glass, cardboards, and green-waste for compost and other recyclable materials.	DEM	Private Waste Collectors
8.4.02	Increase public outreach, education, and incentive programs that improve waste reduction, reuse, and recycling.	DEM	DOH
8.4.03	Develop and place educational signage along the entry corridor heading to the County recycling site.	DEM	
8.4.04	Implement the ISWMP through programs, improvements, and upgrades to the solid waste management system; execute the CIP budget as funds allow.	DEM	DOH Private Waste Collectors
8.4.05	Conduct a survey to determine community preference for the County landfill operating hours.	DEM	Moloka`i community
8.4.06	Expand the solid waste recycling center's operating hours as funding and budgets allow.	DEM	
8.4.07	Explore the feasibility of placing more trash cans throughout the island.	DEM	
8.4.08	Conduct a feasibility study to explore waste-to-energy solutions.	DEM	
8.4.09	Explore the feasibility of having more transfer stations located throughout Moloka`i.	DEM	
8.4.10	Form a partnership with Moloka`i NGOs, State Agencies, and DHHL to remove and recycle junk cars from Moloka`i.	DEM	NGOs DHHL
8.4.11	Conduct annual reviews of Solid Waste Division contracts to provide oversight and enforcement.	DEM	
8.4.12	Establish a "take it or leave it" station at the recycling center like those that exist on the other islands.	DEM	

## 8.5 TRANSPORTATION

An integrated, affordable multi-modal transportation system is critical to the quality of life for Moloka`i residents, and to support a diversified economy. Moloka`i relies heavily on air and sea transportation systems to transfer people, goods and services to and from the island. Map 8.2 depicts Moloka`i's land, air, and sea transportation systems. Most consumable goods are transported to the island via barge, making the cost of most items more expensive than on Maui or O`ahu. Reliance on an effective, efficient and affordable inter-island passenger transportation system is also evidenced by survey results that show 60 percent of residents travel off-island for health care services<sup>64</sup> (See Map 8.2).

### A. EXISTING CONDITIONS

#### **Air**

Moloka`i has two airports – Moloka`i Airport and Kalaupāpā Airport - although only Moloka`i Airport is located in Maui County. Moloka`i Airport originally opened in 1929 as Ho`olehua Field and has two runways located on 288 acres on the island's central plateau. It is owned and operated by the State of Hawai`i, Department of Transportation Airports Division. The facility is designated as a small commercial airport with a transport runway classification. Moloka`i is served by various passenger air carriers and air cargo carriers. In 2013, Moloka`i Airport had a total of 34,518 aircraft arrivals and departures, which is 4 percent of the statewide total number of airport operations.<sup>65</sup> There is no-fee parking available at the Moloka`i Airport.

The *Moloka`i Airport Master Plan* was prepared in 1999 by the HDOT Airports Division. To accommodate the projected demands through the year 2020, recommended upgrades include extending and improving the airfield runway and taxiway, building a new terminal building, and improving parking and terminal roadways.

#### **Sea**

Moloka`i has a mix of harbor facilities. Kaunakakai Harbor on the south side of the island is the primary harbor for the island. It includes two berths, 29 moorings, one ramp, and one pier. Hale O Lono, located seven miles west of Kaunakakai, is a wharf in disrepair with 1.5 acres of protected anchorage for day and overnight recreation. Kamalo Wharf on the south shore is considered a temporary-use facility rather than a permanent mooring area.

<sup>64</sup> *Hawaii Statewide Transportation Plan – Report on Public Opinion Poll*, November 2010.

<sup>65</sup> Source: Hawaii State Department of Transportation, Airports Division.

There is no longer a direct freight ferry service connection between Molokaʻi and Maui, which creates logistical problems for producers of perishable goods. Also, the current Young Brothers freight barge schedule makes it difficult to ship perishable goods from Honolulu, since goods departing there on the Sunday night ferry are only accepted on Friday until 11:00 am. Products originating or arriving outside of Hawaiʻi first arrive in Oahu then move on to Molokaʻi. The additional leg of travel increases Molokaʻi shipping costs and shipping times, which can affect spoilage rates for agricultural products.

### **Land**

Most roads on Molokaʻi are publicly owned and managed; the County is responsible for local roads and the State is responsible for Kamehameha V Highway (Hwy 450), Maunaloa Highway (Hwy 460) and Kalae Highway (Hwy 470). Traffic volumes on Molokaʻi are generally low and growth projections do not anticipate much of a change in the future. The *Federal-Aid Highways 2035 Transportation Plan for the District of Maui* was completed in 2014.<sup>66</sup> The *Statewide Federal-Aid Highways 2035 Transportation Plan* was completed in 2014.<sup>67</sup> The goal of the plans is to provide a safe and efficient land transportation system through the year 2035.

The 1997 HDOT plan recommended upgrades to address several issues such as improving drainages, constructing bridges, and widening roadways at a number of locations around the island. There is significant shoreline erosion along Kamehameha V Highway on the southeast side of the island. Reinforcing, protecting, or relocating these segments may be necessary to maintain safe and reliable operations.

Molokaʻi is largely rural and has few pedestrian facilities. The *Statewide Pedestrian Master Plan* (HDOT, 2013) considers persons living below the poverty level, the elderly, and students to be Pedestrian-Oriented Populations. Molokaʻi has a higher than average concentration of persons living below the poverty level. The Pedestrian Plan recommended improvements to Farrington Avenue near Molokaʻi High and Intermediate School due to concerns over student safety.

The island does not currently have a bikeway system; however, bicycle improvements have been planned along nearly 60 miles of roadway on Molokaʻi.<sup>68</sup> While there is no formal public transit system on the island, the nonprofit social services agency, Maui Economic Opportunity (MEO), operates a rural shuttle service for youth, elderly, disabled and the general public. The MEO shuttle service is

<sup>66</sup> [http://hidot.hawaii.gov/highways/files/2014/09/Regional-Federal-Aid-Highways-2035-Transportation-Plan-for-the-District-of-Maui\\_Yong1.pdf](http://hidot.hawaii.gov/highways/files/2014/09/Regional-Federal-Aid-Highways-2035-Transportation-Plan-for-the-District-of-Maui_Yong1.pdf).

<sup>67</sup> <http://hidot.hawaii.gov/highways/other/other-related-links/hawaii-statewide-long-range-transportation-plan/>.

<sup>68</sup> *Bike Plan Hawaii*, Hawaii Department of Transportation 2003.

funded by an annual grant from the County DOT. The MEO shuttle serves three service areas: Moloka`i East, Moloka`i West, and Moloka`i Central. Private commercial taxi and shuttle services are also available.

In 2009, the Hawai`i Legislature amended the HRS to require the HDOT and Hawai`i's four county transportation (or public works) departments to adopt "Complete Streets" policies that accommodate all users of roadways, including pedestrians, bicyclists, transit users, motorists, and persons of all ages and abilities. "Complete Streets" is a relatively new approach to street and transportation design, which aims to accommodate all users of roadways and rights of way. Maui County has a "Complete Streets" policy and consideration of this policy should be made for the design of Moloka`i's roadways.

### **Future Multi-Modal Transportation System**

The island's multi-modal transportation system allows people to use a variety of transportation modes, including walking, biking, and other mobility devices (e.g., wheelchairs), as well as transit where possible.

The system will:

- Include where applicable, a variety of facilities such as "Complete Streets",<sup>69</sup> public parking, roads and highways that accommodate multiple users, including freight, trucks, cars, transit vehicles, bicycles, wheelchairs, and pedestrians.
- Be designed and built to address the needs of people of all abilities.
- Provide safe and functional linkages to connect the island's population centers and destinations.
- Enhance and be compatible with the rural character of Moloka`i.
- Provide cost-effective connections to air and sea transportation facilities at the interisland transportation hubs at Kaunakakai Harbor and Moloka`i Airport.

### **Roads, Highways, and Major Thoroughfares**

- The existing road and highway network will continue to be the foundation for transportation on the island. The current transportation plan for the island's major roads does not propose new highways so the focus in the future will be on improving existing highways.
- Where possible, streets and highways should be designed as "Complete Streets." In this approach, streets are designed to consider the needs of all users such as motorists, pedestrians, bicyclists, wheelchair users, and

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<sup>69</sup> Complete Streets are designed and operated to enable safe access for all users. People of all ages and abilities are able to safely move along and across streets in a community, regardless of how they are traveling.

transit riders. Priorities for these modes and functions will vary depending on the specific segment and/or conditions.

- Streets and roads within Moloka`i's small towns will be improved to meet the recommendations in the *Business Country Town Design Guidelines*.<sup>70</sup> An update of this document is recommended as Action 7.01.
- Specific improvements to State of Hawai`i highways are listed in the *2014 Statewide Federal-Aid Highways 2035 Transportation Plan*.<sup>71</sup>

### **Transit Corridors**

- Until demand warrants a public transportation system, MEO will continue to provide bus service for residents and visitors between the island's population centers and transportation hubs.
- Supporting facilities such as bus stops and park-and-rides for the existing MEO service and future transit will be in locations that are conveniently accessed, are safe, and offer protection from the weather.

### **Bicycle Facilities**

- Bicycle paths will be provided along all major highways, per the recommendations of the State's Bike Plan Hawai`i (2003).<sup>72</sup>
- Bicycle facilities within Moloka`i's small towns are provided to accommodate local bicycle use and to support the island-wide bicycle system. Bike paths and bike lanes in these areas connect residential areas to shopping, schools, and other local attractions.
- Bikeway improvements within the small towns will be coordinated with pedestrian facilities as part of the multi-modal system for alternative transportation.

### **Pedestrian Facilities**

- Pedestrian facilities to improve safety and to promote and accommodate walking within Moloka`i's small towns will be provided.
- Sidewalks, public parking, and other pedestrian facilities will connect residential areas with shopping, schools, and other local attractions.
- Pedestrian improvements within the small towns will be coordinated with bicycle facilities as part of a comprehensive plan for all modes of transportation.

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<sup>70</sup> County of Maui Department of Planning. (July 1993). *Design Guidelines for Country Town Business Districts: Molokai*.

<sup>71</sup> State of Hawaii Department of Transportation/Highways Division. (July 2014) *Federal Aid Highways 2035 Transportation Plan*.

<sup>72</sup> State of Hawaii Department of Transportation/Highways Division. (2003) *Bike Plan Hawaii: A State of Hawaii Master Plan*



## **B. ISSUES**

- Issue 1: High shipping costs and limited options place Moloka`i businesses at a competitive disadvantage and result in a lack of options to bring in goods and services.
- Issue 2: The current barge schedule makes it difficult to ship perishable goods between islands or to the mainland. There is a lack of options to bring in goods and services.
- Issue 3: There is significant shoreline erosion along Kamehameha V Highway on the southeast side of the island.
- Issue 4: The lack of bikeways and sidewalks is a concern.
- Issue 5: Moloka`i has only one boat ramp facility located in Kaunakakai.
- Issue 6: There is no inter-island public ferry system.
- Issue 7: Some of Moloka`i's existing private roadways are not compliant with County standards.

## **C. GOAL, POLICIES, ACTIONS**

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### **TRANSPORTATION**

**Goal** Moloka`i will have an integrated multi-modal transportation system that supports a diversified economy and meets the needs of residents and visitors while respecting the island's rural character.

### **Policies**

1. Support the expansion of air services to Moloka`i as needed.
2. Encourage rapid and cost-effective transport of Moloka`i's agricultural products to Maui and Oahu markets.
3. Explore options for a direct barge service or a passenger ferry that can carry goods from Moloka`i to Maui.

4. Support improvements to Kaunakakai Harbor.
5. Support the improvement and, if warranted, expansion of a public or government run ferry service from Moloka`i to Maui.
6. Maintain the rural character of Moloka`i's road system while accommodating multiple modes of transportation, including transit, freight vehicles, automobiles, pedestrians, bicycles, wheelchairs, and other modes.
7. Support improving access to East Moloka`i during wet weather events by providing bridges at sites of flooding on Kamehameha V Highway.
8. Support safe pedestrian routes and bikeways along highways and arterials in accordance with the County's Complete Streets Policy.
9. Support continued coordination between the County DOT and MEO to provide rural shuttle services that meet the needs of youth, elderly, disabled, and the general public.
10. Support Moloka`i's existing and future private roadways achieving compliance to Maui County standards.
11. Bikeways and sidewalks should be installed, connected and/or improved in the urban core and immediate outlying areas.
12. Encourage the State to provide pertinent signage along highways for all Moloka`i ports-of-entry.
13. Encourage the State to maintain Hale O Lono Harbor and ensure public access.
14. Encourage the review and apply the policies of State transportation plans such as: 1999 Airport Master Plan, 2003 Bike Plan for Hawai`i, and Molokai's Long-Range Land Transportation Plan.
15. Encourage the State to identify an upland route for a new highway from Kualapu`u to Kamalo to provide a safe alternative to the existing shoreline highway. The alignment of the highway should be above areas known to contain cultural features, and below the forestry zone.
16. Evaluate the impact that transportation system development and maintenance will have on natural and cultural resources, cultural practices, and Native Hawaiian burials.

17. Support HDOT Highways Division efforts to address the hazard of deer on highways.
18. Encourage a bikeshare program for Moloka`i.

**Actions**

<b>Table 8.5 Infrastructure – Transportation Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
8.5.01	Work with HDOT to ensure airport and air services meet the needs of Moloka'i's residents, visitors, and businesses.	OED	PD HDOT
8.5.02	Support continued air services between topside Moloka'i and Kalaupāpā.	OED	PD HDOT
8.5.03	Identify challenges and propose solutions to transport Moloka'i's agricultural products to Maui and Oahu markets.	OED	PD HDOT
8.5.04	Advocate for increased barge and ferry service to and from Moloka'i.	OED	HDOT
8.5.05	Identify harbor and airport improvements designed to further support the agricultural industry.	OED	PD HDOT
8.5.06	Prepare a plan for an integrated multi-modal transportation system with "Complete Streets" that serve automotive, public transit, bicycle, pedestrian, wheelchairs, and other land transportation modes.	DPW	PD HDOT
8.5.07	Develop and implement a trail, greenway, and open space access plan that utilizes old agriculture roads and trails, where appropriate.	PD HDOT	PR
8.5.08	Integrate a parking study with parking mitigation measures appropriate for Moloka'i into a Kaunakakai Revitalization and Beautification Plan. Explore the concept of centralized parking in Kaunakakai and utilize areas such as the former Molokai Electric Company's Kaunakakai Facility.	PD HDOT	DPW
8.5.09	Evaluate existing MEO transportation services to identify possible improvements to routes, pick-up and drop-off locations, and other supporting facilities.	OED	MEO
8.5.10	Support additional access routes located around Kaunakakai to facilitate access to and from town.	DPW	DOT
8.5.11	Explore the possibility of the County acquiring privately owned roads on Moloka'i.	DPW	
8.5.12	Encourage the continued practice of no-fee parking at the Moloka'i Airport.	OED	HDOT
8.5.13	Fund and construct a public parking area in Kaunakakai to relieve existing parking requirements on businesses wishing to expand or improve.	DPW	

## 8.6 ENERGY

The cost to produce power in Hawaiʻi is higher than on the U.S. mainland for a number of reasons, including no economies of scale in Hawaiʻi’s market due to the relatively small population base, and the use of imported crude oil to fuel the power generators that makes Hawaiʻi vulnerable to global crude oil price fluctuations.

### A. EXISTING CONDITIONS

As of the end of 2016, MECO had 12 megawatts of diesel-generating capacity that provided electricity to 2,671 residential customers and 541 commercial customers on Molokaʻi.<sup>73</sup> The average residential electricity rate in 2016 on Molokaʻi was 33 cents per kilowatt hour (kWh); 29 cents per kWh on Maui; and 10 cents per kWh nationally.<sup>74</sup> There is potential for the island to generate much of its own electricity with changes to its energy infrastructure.

The State of Hawaiʻi and the U.S. Department of Energy launched the Hawaiʻi Clean Energy Initiative in 2008. In 2016, approximately 26.6% of Hawaiʻi’s electricity was generated from renewable resources; primarily from distributed solar followed by wind, biomass, and geothermal. The electric utility renewable energy portfolio goals were updated in 2015 to 30 percent of net electricity sales by December 31, 2020, 40 percent by December 31, 2030, 70 percent by December 31, 2040, and 100 percent by December 31, 2045.

MECO is aggressively pursuing a 100% renewable energy future ahead of the State’s renewable portfolio mandate. Molokaʻi is a small island grid that is already facing renewable integration challenges that must be resolved to meet continued community interest in renewable technologies. Innovative solutions are being sought to solve the technical challenges of managing a reliable grid with high penetration of variable energy sources at reasonable costs. Work to achieve a 100% renewable energy future includes complementary paths of engaging the community in discussions about energy options, seeking technical solutions for the utility as well as customers, and finding alternate sources of funding for necessary projects to minimize the burden on electric customers. In 2017, MECO hosted 13 directed community discussions and conducted surveys of residents to obtain input on preferred renewable resources. The responses and comments from over 170 residents indicated an interest in diversifying renewable resources.

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<sup>73</sup> 2016 State of Hawaiʻi Data Book, Hawaiʻi State Energy Office, August 2017 – [energy.hawaii.gov](http://energy.hawaii.gov).

<sup>74</sup> Ibid.

## **B. ISSUES**

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- Issue 1: Use of fossil fuels for electrical generation limits control over costs and supply chain security. Accordingly, Moloka`i has some of the highest electricity rates in the State and in the country.
- Issues 2: There are limited resources on Moloka`i to effectively manage additional, uncontrolled, as-available, renewable energy generation, such as solar and wind power.

## **C. GOAL, POLICIES, AND ACTIONS**

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**Goal** Moloka`i will meet its energy needs through development of local clean renewable energy sources and implementation of energy efficiency and conservation measures.

### **Policies**

1. Support accelerated development of alternative energy sources to help reduce dependency on oil and other fossil fuels while remaining cognizant of resulting costs to households and businesses.
2. Support increased use of environmentally friendly alternative fuels on Moloka`i with consideration of the impact to the environment.
3. Support programs that provide incentives to use more efficient vehicles, appliances, lighting, and other energy consuming devices.
4. Encourage services and facilities to be energy efficient and utilize renewable energy, where possible.
5. Support efforts to keep main utility transmission and distribution lines robust and resilient enough to withstand severe storm effects.
6. Promote the under-grounding of utilities in new areas of development and in existing areas, where economically feasible and culturally appropriate.
7. Support development of micro-grids for critical infrastructure and key resources to promote the integration of renewable energy and system resiliency.

8. Encourage amending the Maui County Building Code to recommend the use of energy conservation devices in both new construction and renovations.
9. Support the installation of photovoltaic charging stations as necessary.

**Actions**

<b>Table 8.6 Infrastructure - Energy Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
8.6.01	Continue to participate in the Integrated Resources Planning Advisory Group and support efforts to develop a diversified energy strategy and smart grid for Moloka'i.	Energy Office	State Energy Office, MECO
8.6.02	Provide loan programs and tax incentives to encourage individuals and businesses to install renewable energy systems and use energy saving devices.	Energy Office	State Energy Office, MECO
8.6.03	Develop an ordinance that would require all new County buildings and facilities to achieve specific energy efficiency standards such as LEED certification.	Energy Office	State Energy Office Hawaii Energy
8.6.04	Encourage the use of vehicles powered by renewable energy.	Energy Office	State Energy Office

## 8.7 Telecommunications

### A. EXISTING CONDITIONS

The *Maui County General Plan 2030 Telecommunications Assessment* (January 2007) found that wireless telephone and internet service deficiencies exist on Moloka`i due to the dispersed nature of development. The study found that urbanized areas had moderate service coverage, while non-urbanized areas had limited coverage. Another assessment conducted in 2012 by the State of Hawai`i Department of Commerce and Consumer Affairs indicated Moloka`i residents were dissatisfied with cable and internet service and pricing.<sup>75</sup> At that time, system performance was limited since it was provided by microwave feed from Lahaina rather than by undersea fiber optic cable, even though much of the on-island distribution was by fiber cable. However, in 2013 Oceanic Time Warner Cable successfully negotiated a lease of the existing undersea fiber optic cable and, since then, download speeds reportedly have improved.<sup>76</sup>

### B. ISSUES

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- Issue 1: Limited access to high-speed internet and telecommunications services presents challenges for education, health care, residents, and businesses.
- Issue 2: Moloka`i has extremely poor cellular/mobile telephone service and numerous dead zones.

### C. GOAL, POLICIES, AND ACTIONS

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**Goal**      **Moloka`i will have a robust, resilient, and reliable telecommunications network that will meet the growing demands of education, healthcare, residents, and businesses.**

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<sup>75</sup> *Community Ascertainment and Related Activities, Results as of 5/30/13*, State of Hawai`i Department of Commerce and Consumer Affairs.

<sup>76</sup> "Oceanic Internet Upgrade", *The Molokai Dispatch*, July 22<sup>nd</sup> 2013, <http://themolokaidispatch.com/oceanic-internet-upgrade/>.



**Policies:**

1. Encourage and support the expansion of the mobile cellular network that respects natural and cultural resources.
2. Encourage and support the expansion of high-speed internet services.
3. Support the provision of high-speed internet services to all schools.
4. Encourage increased telecommuting (working from home) activities for residents.
5. Encourage cell tower installation and backup generators to be located out of special flood hazard areas and tsunami inundation zones.
6. Encourage telecommunications providers to expand coverage and provide more reliable service throughout the island.

**Actions**

<b>Table 8.7 Infrastructure – Telecommunications Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
8.7.01	Work with telecommunications providers to expand coverage and provide more reliable service throughout the island.	OED	All service providers
8.7.02	Work with internet providers to expand high-speed internet service throughout the island.	OED	All service providers
8.7.03	Provide high-speed internet at all County meeting facilities.	PR	All service providers
8.7.04	Encourage more provision of wireless "hotspots" in Moloka`i's country towns.	OED	All service providers

## **9 | PUBLIC FACILITIES AND SERVICES**

### **9.1 PARKS AND RECREATION**

This chapter covers Moloka`i's public facilities and services, including parks and recreation, police, fire and public safety, education, health and social services, and cemeteries. Map 9.1 depicts Moloka`i's public facilities and services. The County of Maui PR is responsible for the development, operation, and maintenance of County park facilities. The DLNR has jurisdiction over State beach parks, natural area reserves, small boat harbors and other managed lands. The National Park Service manages Kalaupāpā (See Map 9.1).

Moloka`i's developed parks and open spaces include tot lots, sports courts, a gymnasium, pool, and athletic fields. The facilities range in scale from just under an acre to over 200 acres.

One of the most significant issues facing the County's park system on Moloka`i is the lack of an overall plan for parks and recreation facilities. It will be difficult to meet the needs of current and future residents without a master plan that documents the island's needs and provides a direction for planning, maintenance, and development. Another notable issue that was raised by the community is public access to shoreline areas.

#### **A. EXISTING CONDITIONS**

Moloka`i currently has 14 County parks and facilities, including the Cooke Memorial Pool, three community centers, six community parks, and five neighborhood parks. Despite an abundance of park space, most parks do not provide park amenities that are typically found in developed parks. This may be because many existing parks are designed to serve beach park requirements rather than community needs for recreation. Maui County also manages the use of community centers which are available to the public for meetings, social gatherings, or other events. The community centers are public and Americans with Disabilities Act (ADA) accessible.

Park and recreation facilities on the East End's south shore include two public access rights-of-way to the beach, three day-parks, an athletic field with a community center, and two access trails to public hunting areas. There are a number of privately owned beach accesses that are in general public use that do not qualify as publicly managed facilities.

Despite miles of shoreline on the East End, public access with adequate facilities is very limited. Even though there is a relatively low population in

the East End, island residents, as well as a growing number of tourists, use this area for coastal recreation. The only public boat ramp is over ten miles away at the Kaunakakai Wharf.

**Figure 9.1 Moloka`i Public Parks**

<b>NAME OF PARK</b>	<b>LOCATION</b>	<b>OWNER SHIP</b>	<b>PARK TYPE</b>	<b>SIZE (acres)</b>
Pala`au	Central	State	State Park	233.70
Cooke Memorial Pool	Kaunakakai	County	Community Park	.50
Duke Maliu Regional Park	Central	County	Regional Park Low Intensity	10.00
Halawa Park	East End	County	Beach Park Low Intensity	1.00
Kakahaia Park	Central	Federal	Beach Park Low Intensity	0.80
Kaunakakai Ball Park	Kaunakakai	County	Community Park	6.47
Kaunakakai Lighthouse/Malam a Park	Kaunakakai	County	Special Area	3.35
Kilohana Community Center	East End	County	Community Park/Community Center	7.60
Kualapu`u Park & Community Center	Central	County	Community Park/Community Center	6.77
Maunaloa Subdivision Park	West end	County	Neighborhood Park	2.00
Maunaloa Community Center	West end	County	Neighborhood Park/Community Center	3.00
Mitchel Pauole Community Center	Kaunakakai	County	Community Center	8.78
One Ali`i Park	Kaunakakai	County	Beach Park Low Intensity	11.00
Papohaku Beach Park	West end	County	Beach Park Medium Intensity	10.40
Pu`u Hauoli Park	Kaunakakai	County	Neighborhood Park	1.30

Mapulehu Glass House	Mapulehu	County	Historical/Cultural	8.915
<b>TOTAL ACRES</b>				<b>315.59</b>

Source: "Public Facilities Assessment Update County of Maui." March 9, 2007. R.M. Towill Corporation, Honolulu, Hawai'i.

One of the most critical issues is the PR does not have a comprehensive park and recreational facilities plan. Without such a plan, it is difficult to prioritize projects or initiate improvements in a systematic way. The Parks Department typically initiates development projects based on its annual six-year capital program budget. Development of a parks and recreation master plan would identify community needs and priorities, provide a vision for the future, and produce a capital improvement program that is based on a rational assessment of long-term community needs.

The DLNR manages approximately one million acres of land, which can be divided into roughly three categories: (a) land that the public is actively invited to recreate in such as State parks; (b) land that the public is not actively invited to recreate in, but openly utilizes such as forestry area reserves and unencumbered State land; and (c) land that the public does not enter, such as inaccessible watershed areas. Through the Na Ala Hele Trail and Access Program, the State makes many of its conservation lands available to residents and visitors. These trails invite the public to enjoy some of the most intimate and pristine places of the County. There is 1 trail on Moloka'i, 4 trails on Lāna'i, and 16 trails on Maui.

## B. ISSUES

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- Issue 1: It is difficult to plan for future park and recreation improvements because there is no current assessment of community needs.
- Issue 2: There is a need for more community involvement, such as coaches and volunteers, to support recreational youth programs.
- Issue 3: Some of Moloka'i's parks and recreational facilities are in disrepair and in need of regular maintenance and improvements to meet the community's needs. Currently, there are only two staff positions responsible for maintenance and repair of all of Moloka'i's facilities and parks.

- Issue 4: Moloka`i has a wealth of open spaces, trails, parks, and cultural sites, but access to some sites is difficult or blocked.
- Issue 5: Malama Park has the potential to be a key cultural and community place but is now in disrepair.
- Issue 6: There is currently only one boat ramp on Moloka`i.
- Issue 7: The Kaunakakai Gym is old and in need of repair.

### **C. GOAL, POLICIES, ACTIONS**

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**Goal** Moloka`i will have a full range of public facilities, recreational opportunities, and programs that meet the current and future needs of the island's residents and visitors.

#### **Policies**

1. Support a systematic approach to planning and improving the island's parks, facilities, and recreation programs.
2. Support expanding access to recreational opportunities and community facilities to meet the present and future needs of residents of all ages and physical abilities.
3. Support improving the quality and adequacy of community facilities to ensure they are clean and well maintained, and there is an adequate supply of public restrooms in convenient locations.
4. Require the dedication of land and development of usable park sites as part of the approval of development of new residential and mixed-use areas.
5. Ensure access to the island's parks, trail systems, open spaces, shoreline, and cultural sites, where appropriate, and with government agencies working with private landowners to address issues of liability.
6. Support the improvement of recreational vessel boat ramp launch infrastructure as needed by the community.

7. Support improvements to Malama Park.
8. Support public-private partnerships to provide park access and facilities.
9. Support and expand the State Na Ala Hele Trail and Access Program by considering such designation for all traditional trails, including a coastal trail system.
10. Evaluate the impact that public and recreational facility improvement and expansion will have on natural and cultural resources, cultural practices, and Native Hawaiian burials.
11. Encourage the State to install cabins mauka on State lands on Moloka'i along each ahupua`a or ahupua`a cluster (e.g., Pua`ahala – Ka`amola; `Ohia - `Ualapu`e; Kalua`aha; Mapulehu – Puko`o; etc.). These cabins would be multi-purpose. Cabins could be used by hunters who need to access areas with a high concentration of ungulates they cannot reach within a day's hike, and who need to stay overnight to continue the hunt and bring the animals down the mountain. The second purpose is to conduct conservation work, such as monitoring and removing invasive species, establishing new strands of native plants, and maintaining trails and cultural sites.

**Actions**

<b>Table 9.1 Public Facilities and Services - Parks and Recreation Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
9.1.01	Develop, adopt, and regularly update a parks and recreation district plan that incorporates public facilities, parks, other recreational opportunities and a financial component.	PR	Private landowners, Community
9.1.02	Amend development regulations to ensure the construction of adequate parking with pathways near public shoreline access points.	PD	
9.1.03	Adopt a beach/mountain access dedication ordinance using Transfer of Development Rights addressed in Chapter 46, HRS, if appropriate, to improve access along the shoreline and mountains.	PD	
9.1.04	Develop a master plan that defines a unified vision for recreational public and private land in Kaunakakai, including a financial component.	PD	Private landowners
9.1.05	Provide shade for One Ali`i Park's playground area.	PR	
9.1.06	Coordinate planning, design, and construction of a new Kaunakakai Gymnasium and Athletic building that meets Moloka`i's unique sports' needs, serves as a	PR	EMA

	hardened EMA community shelter for disasters, and is located outside of the flood zone.		
9.1.07	Explore land acquisition and development of park facilities at Kumimi Beach.	PR	Landowners
9.1.08	Explore State or County land acquisition and development of park facilities at Kapukauahi (Dixie's).	PR	Landowners
9.1.09 0	Work with County, State, and Federal agencies, and the community to resolve Malama Park issues.	PR	Federal, State, community, DHHL



## 9.2 POLICE

### A. EXISTING CONDITIONS

The County of Maui Department of Police (MPD) has only one main police station located in Kaunakakai. The entire island of Moloka`i comprises MPD District V. This police district is served by the Moloka`i Station, with a total of 29 budgeted uniformed patrol officers and civilian personnel. There is an estimated share of 12 investigative officers. The district is divided into two motorized beats and each beat is patrolled by a single officer.

Based on population alone, the Moloka`i Island Community Plan region's current need is estimated at approximately 9 officers. However, given the remoteness of this island and large area requiring police coverage, it is necessary to field more officers to ensure adequate police service. The current number of officers slightly exceeds the estimate of need in the *Public Facilities Assessment* published in 2007. The district has a projected need for 13 additional patrol officers by the year 2035. Currently, the greatest challenge for the MPD is recruiting new officers.

The Moloka`i Station received 7,357 calls in 2016 as compared to 7,106 in 2015. There were 1,098 criminal arrests during the year. The district issued a total of 2,194 citations in 2016 as compared to 1,857 in 2015.<sup>77</sup> Animal control is aided by the Moloka`i Humane Society, a non-profit community services organization that provides spay/neuter services, transport of animals, and humane education.

### B. ISSUES

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- Issue 1: There is a lack of police response capabilities and facilities in the outer reaches of Moloka`i's East and West Ends.
- Issue 2: More police presence in the form of bicycle or foot patrol is needed in Kaunakakai.
- Issue 3: Substance abuse and domestic violence is a continuing problem on the island.
- Issue 4: The existing police station is presently located in a special flood hazard area and tsunami evacuation zone. The current police

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<sup>77</sup> Maui Police Department Annual Report 2013, p 25

station location also necessitates emergency response through, and in close proximity to, congested areas such as elementary schools, areas of heavily used parks and recreation facilities, and Kaunakakai.

Issue 5: There is no animal holding facility on Moloka`i.

### **C. GOAL, POLICIES, ACTIONS**

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**Goal**            **An effective and efficient police force to help maintain a safe, peaceful, and friendly community.**

**Policies**

1. Support an expanded police presence in the East and West Ends of Moloka`i.
2. Encourage the development, adoption, and implementation of programs that address substance abuse.
3. Encourage maximizing and expanding the island's police resources to properly enforce substance abuse laws.
4. Support the placement of bicycle and/or foot patrol officers in Kaunakakai, as needed.
5. Support the maintenance and development of police facilities on Moloka`i that meet the MPDs and community's needs.
6. Encourage police involvement in the community.
7. Encourage and support recruitment of police officers through the junior police officer program.
8. Support the provision of Moloka`i community and cultural sensitivity training for new police recruits and transferred personnel.
9. Encourage State hunter safety courses and the development of a shooting range.

10. Encourage the establishment of an animal holding facility on Moloka`i.

**Actions**

<b>Table 9.2 Public Facilities and Services - Police Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
9.2.01	Coordinate with community organizations in their prevention and treatment efforts to reduce substance use and abuse.	MPD	Community Organizations
9.2.02	Continue working cooperatively with the Prosecuting Attorney and the Drug Enforcement Agency (DEA) to enforce substance abuse and drug trafficking and distribution laws.	MPD	Prosecuting Attorney DEA
9.2.03	Coordinate land acquisition, planning, design, and construction of a new Moloka`i Police Station at a location that meets the unique needs of the MPD for Moloka`i, out of the special flood hazard area and tsunami evacuation zone, that promotes practical and safe emergency response for the entire Moloka`i community.	MPD	
9.2.04	Collaborate with community organizations and other appropriate groups to provide Moloka`i community and cultural sensitivity training for new recruits and transferred personnel.	MPD	Community Organizations
9.2.05	Expand police presence in the East and West Ends of Moloka`i.	MPD	
9.2.06	Explore the possibility of collaborating with an animal rescue organization to establish an animal holding facility on Moloka`i.	MPD	Animal rescue organizations
9.2.07	Encourage the implementation of a Police Bicycle Patrol Program on Moloka`i.	MPD	

### 9.3 FIRE AND PUBLIC SAFETY

An adequate fire protection service within close proximity to all populated areas is necessary to protect life and property. The mission of the County of Maui Department of Fire and Public Safety (MFD) is "to protect and preserve life, environment, and property." Its officers and equipment are used to fight and control fires, perform emergency rescue services, and provide community education on fire safety. The MFD is Maui County's first responder to public safety incidents and is often involved with land and water rescue.

#### A. EXISTING CONDITIONS

Three fire stations serve Moloka'i. The Kaunakakai Station replaced the existing facility in 2010, is located on Alanui Ka Imi Ike Street in Kaunakakai, and is responsible for the Kaunakakai area from Kamalo Gulch to Manawainui Gulch. The Ho`olehua Station covers Ho`olehua, Kualapu`u, Kalae, Kaluako`i, and Maunaloa. The Puko`o Station is located on Kamehameha V Highway, at the East End of the island and covers Kamalo to Hälawa Valley. The Puko`o Fire Station is currently a sub-station of Kaunakakai with only two personnel assigned per shift, which is below national and Maui County standards for minimum fire company staffing standards.

<b>Figure 9.3 Fire Protection Facilities</b>		
<b>Name</b>	<b>Type</b>	<b>2005 Population Served*</b>
Kaunakakai Fire Station #4	Tanker, Engine	3,564
Ho`olehua Fire Station #9	Engine	1,782
Puko`o Fire Station #12	Engine	1,782

Source: *Public Facilities Assessment Update County of Maui 2007*

\*Note: population split is 50 percent to Kaunakakai, 25 percent to Ho`olehua, and 25 percent to Puko`o

The MFD completed the "Maui Fire Department Standards of Cover 2016" report to assess the adequacy of the current level of fire service coverage. This is the first time that such a report has been compiled. This research will address the expectations of the citizens, the MFD, and County government in the level of fire service needed. Another factor critical to providing adequate fire service is the level of funding available.

With regard to fire service for the East End, the MFD has a memorandum of understanding with the State of Hawai`i to lease the parcel where the Puko`o Fire Station is located. The facility is over 80 years old, is in disrepair, and sits in a tsunami and hurricane inundation zone.

## **B. ISSUES**

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- Issue 1: A large number of residential areas of Moloka`i are not covered by existing fire stations.
- Issue 2: The southern and southwestern facing slopes of the entire island are at high risk for fire, especially in developed areas.
- Issue 3: There will be a lack of fire coverage on the West End if future growth occurs.
- Issue 4: Staffing at the Puko`o Fire Station is below national and Maui County minimum standards.
- Issue 5: The existing Puko`o Fire Station is presently located in a flood and tsunami inundation zone.
- Issue 6: Premises identification addressing is not complete for all applicable areas and properties on Moloka`i, which impacts emergency response and other public and private services.

## **C. GOAL, POLICIES, ACTIONS**

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**Goal**            **Protect life, property, and the environment by providing effective and efficient fire protection and rescue services for the island of Moloka`i.**

### **Policies**

1. Encourage programs and projects that will address fire risk in affected communities.
2. Support locating fire, safety, emergency, and ocean rescue services on the West End as population increases warrant.

3. Support the maintenance and development of fire facilities on Moloka'i that meet the MFD's and community's needs.
4. Ensure MFD minimum staffing levels for Moloka'i meet the same national and County minimum staffing levels as provided at other fire stations in Maui County.
5. Support premises identification addressing efforts to improve enhanced 911 services, emergency response, and provision of other public and private services.

**Actions**

<b>Table 9.3 Public Facilities and Services Fire and Public Safety Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
9.3.01	Develop an islandwide fire risk and vulnerability assessment.	MFD	All major landowners
9.3.02	Explore options for relocating Puko'o Fire Station to a location that is not vulnerable to flooding and tsunamis, and best meets the needs of East End residents.	MFD	
9.3.03	Support the staffing upgrade for the Puko'o Fire Station to meet the same national and Maui County minimum staffing levels as provided at the other fire stations in Maui County. Evaluate the results of the "Standards of Coverage" report and address recommended fire service needs.	MFD	
9.3.04	Implement and maintain the "Centers for Public Safety Excellence" accreditation program.	MFD	
9.3.05	Support the implementation of the accreditation program by creating one full-time position. Minimum level of effort for Moloka'i would be 15 percent.	MFD	

9.3.06	Complete premises identification addressing for all occupied properties and properties with structures on Moloka`i.	MFD	MPD, DHHL, Large landowners, Homeowner Associations, NHOs
9.3.07	Encourage enforcement and incentives for the effective posting of addresses on applicable Moloka`i premises per County Code and public safety recommendations.	MFD	MPD, DHHL, Moloka`i Ranch, Homeowners' Associations, NGOs

## 9.4 EDUCATION

The Hawai`i Department of Education is a statewide school district that manages all public schools in the State. The County of Maui does not have any jurisdiction over the public-school system; however, coordination between the State and County is necessary for planning future school locations and acquiring adequate land.

### A. EXISTING CONDITIONS

There are three public elementary schools on Moloka`i: (a) Kaunakakai, (b) Maunaloa, and c) Kilohana, located in `Ualapu`e. There is also a public-private charter school, Kualapu`u Public Conversion Charter School, in Kualapu`u that houses the only K-6 Hawaiian language immersion program, Ke Kula Kaiapuni O Kualapu`u. In Ho`olehua, Moloka`i Middle School is for students in grades 7-8 and Moloka`i High School is for students in grades 9-12. Both schools house `O Hina I ka Malama, the Hawaiian language immersion program which serves students in grades 7-12. All of the public schools, except Moloka`i Middle School, have adequate capacity to accommodate projected 2015 and 2035 enrollment. Moloka`i Middle School's 2035 enrollment is projected to exceed capacity; however, the overage could be accommodated by an increase in classrooms, staff, and facilities.

Moloka`i High School has career pathway programs of study: Arts and Communication, Business, Industrial and Engineering Technology, Health Services, and Agriculture; however, there are no automotive programs, industrial arts, or fine art and musical arts programs. The agriculture program and the Future Farmers of America allow students to enjoy hands-on experiences in commercial, terrace, permaculture, hydroponic, and aquaponic farming. The agricultural program's infrastructure is underutilized.

Moloka`i schools are proud of their Hawaiian language and culture. Hawaiian Language Immersion programs are available to support students from preschool through high school. Moloka`i High School also offers Hawaiian language immersion, English as a second language, advanced placement, gifted and talented, honors, an alternative learning center, and special education programs.<sup>78</sup> 21<sup>st</sup> Century Community Center Learning Center Grants currently support a variety of enrichment programs at schools across the island.

Aka`ula School is a private school with students in grades 5-12 located in Kualapuu. Aka`ula School offers an alternative to public school that provides a multi-age, transitional environment for Moloka`i students in grades 5-12.

<sup>78</sup> Hawaii State Department of Education, [www.hawaiipublicschools.org](http://www.hawaiipublicschools.org)



They focus on a learning, leading, and decision making as fundamental collaborative processes.<sup>79</sup>

The UHMC-Moloka`i is located in Kaunakakai. UHMC-Moloka`i offers access to a wide array of classes (face-to-face and distance education), certificate and degree programs. There is a library and facilities for distance learning through Hawai`i Interactive Television System and Skybridge. The Skybridge allows two-way interactive learning for students located on Moloka`i, Kahului, Hana, Lāna`i, and Lahaina. There is also access to education through cable TV and the internet.

The CTAHR Cooperative Extension Services (CES) is located in Ho`olehua. It has a demonstration research farm in the Moloka`i Agricultural Park that shares facilities with UH Maui College Moloka`i Farm. CES programs focus on outreach and continuing education in agriculture, cooperative and leadership development, and DHHL farm development. The Kuha`o Business Development Center provides technical assistance and entrepreneurship.

## **B. ISSUES**

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- Issue 1: Some people on Moloka`i have limited relevant technical knowledge or skills to enter the 21<sup>st</sup> century workforce, acquire skilled jobs, or start their own business.
- Issue 2: Many college applicants need remedial courses as they are unable to place in college level English and math based on college entrance test scores.
- Issue 3: Many students are unaware of the Career Pathway programs and funding opportunities that are available to them.
- Issue 4: Hawaiian is the official State language, yet it is not taught in public schools and not recognized by most colleges for entrance requirements.

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<sup>79</sup> The Aka`ula School, [www.akaula.org](http://www.akaula.org)

## C. GOAL, POLICIES, AND ACTIONS

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**Goal**            **Moloka`i will have high-quality educational facilities and programs that accommodate the community's diverse learning needs.**

### **Policies**

1. Support the expansion of facilities and programs at the Moloka`i Education Center based on the current Long-Range Development Plan (LRDP) to include approximately 15 total acres in Kaunakakai for expansion.
2. Support an expanded array of adult education, post-secondary, vocational, English as a second language, business, technical, professional, early college high school programs, and career counseling programs that prepare Moloka`i residents for future occupations and business opportunities.
3. Support adequate and affordable preschool facilities and programs.
4. Support expansion of high school vocational programs and development of a fine arts and cultural program.
5. Support teaching the Hawaiian language in public schools as part of the core curriculum and its recognition by colleges as a foreign language to satisfy college entrance requirements.<sup>80</sup>
6. Support college and vocational career training beginning at the elementary school level.
7. Support STEAM (Science Technology, Engineering, Arts and Math) programs for K-12.
8. Support standards-based education and grading for grades K-12 to enable academic success and ethical treatment of all students.
9. Support the development of a performing arts center on Moloka`i.

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<sup>80</sup> Hawaiian is not a foreign language; this is for college entrance requirements only

10. Encourage all educational institutions to participate in energy and resource audits to help the schools be greener and environmentally responsible and lead the community in using resources wisely.
11. Support adult and post-secondary education programs.
12. Support English as a second language classes.
13. Support programs to explore career path options, including vocational and mentoring programs.
14. Support opportunities to increase enrollment in post-secondary education.

**Actions**

<b>Table 9.4 Public Facilities and Services - Education Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
9.4.01	Assist with accreditation of pre-school and child care center providers via professional services.	DHHC	DOE
9.4.02	Continue workforce development programs and internships.	OED	Employers
9.4.03	Provide training for job preparedness, such as proper work ethic, responsibility, resume writing, and interviewing.	OED	DOE UH Maui College
9.4.04	Continue to assess and provide recommendations and funding to eliminate achievement gaps in education for Native Hawaiian students.	OED	DOE UHMC MEDB

## 9.5 HEALTH AND SOCIAL SERVICES

Moloka`i's health and social service needs are intensified due to conditions on the island that include: (1) geographic isolation and the high cost of off-island travel; (2) low measurements of economic health, socio-economic stability, and food security; (3) high unemployment rates; and (4) language barriers.<sup>81</sup> Moloka`i has been designated a Medically Underserved Area and a Health Professional Shortage Area for Primary Care, Dental Care, and Mental Health by the U.S. Public Health Service. This designation brings some financial support to help provide a broader array of services.

### A. EXISTING CONDITIONS

#### Healthcare Services

Moloka`i's community is served by one hospital, two health centers, a Native Hawaiian health clinic, and a full-service pharmacy. The hospital and clinics work in partnership to provide inpatient and outpatient medical and dental care, health education and screenings, mental and behavioral health services, remote rural service, translation, and social services.

Moloka`i General Hospital (MGH) is a critical care hospital located in Kaunakakai with 15 beds, an emergency room, and an out-patient clinic. The hospital provides diagnostic and therapeutic imaging services through a CT scanner and ultrasound. In addition, the MGH provides community outreach through health fairs, health screenings, and a Meals on Wheels program. A 2004 demand analysis indicated no need for additional hospital beds through 2030 beyond the 2004 licensed levels. MGH no longer accepts long-term care patients. The MGH coordinates with Hawai`i Life Flight critical transport to take the critically ill to Honolulu.

Many of the hospital's preventive services to the Hawaiian community are offered in partnership with Na Pu`uwai, Inc., a community-based nonprofit Native Hawaiian organization. Na Pu`uwai, Inc. was founded in 1985 and is dedicated to betterment of the health conditions of Native Hawaiians.<sup>82</sup>

In 2002, the Moloka`i Community Health Center (MCHC) applied for and received funding to develop a freestanding, centrally-located community health center providing core primary health care services.<sup>83</sup> MCHC provides

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<sup>81</sup> Molokai Ohana Health Care Inc., referencing 2002 & 2003 Hawaii Health Surveys; <http://www.Molokaichc.org/content/population-served>

<sup>82</sup> Na Pu`uwai, Inc., <http://www.napuuwai.com/>

<sup>83</sup> Ibid, Molokai Ohana Health Care Inc.

services that focus on the health care needs of a target population that is 200 percent below Federal poverty guidelines.

The Moloka`i Family Health Center provides family and general practice, and internal medicine services. There are also private medical offices offering service in medicine, dental care, optometry, and chiropractic care. The hospital, clinics, pharmacy, and offices are all located within Kaunakakai, with some services to remote rural areas.

In 2017, Moloka`i experienced a spike in suicides, particularly among Native Hawaiian men. The death rate due to suicides on Moloka`i in 2001-2005 was already over twice as high as the State's rate. The lack of mental health care providers contributes to the island's mental health burden, and there are inadequate resources available for residents with substance abuse problems.<sup>84</sup>

### **Social Services**

The Maui County Department of Housing and Human Concerns (DHHC) provides four main areas of social services. These are Early Childhood, Immigrant Services, Aging, and Senior Services. Early childhood resource and referral information, as well as technical assistance, are provided to any person or organization. The County also provides grants that support childhood services, including MEO's Head Start program, Maui Family Support Services, and Imua Family Services on Moloka`i. These programs provide early childhood learning and development that support the child, and those involved in the child's life, to ensure a better transition into kindergarten.

DHHC's immigrant social services are located in Kaunakakai and help immigrants achieve and preserve lawful permanent residence, apply for citizenship, and secure and maintain employment. Immigrant families are reunited and strengthened through assistance with petitions, acculturation, and integration.

The Maui County Office of Aging employs a full-time Aging and Disability Services Specialist on Moloka`i to help with needed services to remain as healthy and independent as possible. Services are provided in home or through referral and access programs to frail seniors, family caregivers, and individuals with disabilities of all ages. The Kaunoa Senior Services provides programs and services for well, active seniors and frail homebound residents. These include assisted transportation services, Meals on Wheels Program, and the Congregate Nutrition Program for nutritionally balanced meals in a

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<sup>84</sup> Molokai General Hospital Community Health Needs Assessment, March 2013.

social atmosphere. For more active seniors, there are informational, volunteer opportunities, and a wellness program.

## **B. ISSUES**

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- Issue 1: An increasing older and elderly population will increase health and social service needs, including long-term care.
- Issue 2: The island has immigrant communities with limited English language skills that need health and social services in multiple languages.
- Issue 3: Behavioral and mental health, alcohol and substance abuse, obesity, domestic violence, child abuse and neglect, and sexual abuse are concerns.
- Issue 4: The suicide death rate in Moloka'i is double the State's rate and is far from meeting the Healthy People 2020 Target.

## **C. GOALS, POLICIES, ACTIONS**

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**Goal**            **Have a comprehensive, integrated healthcare and social services system that provides for the community's health and well-being.**

### **Policies**

1. Encourage the provision of enhanced medical, dental, behavioral, and mental healthcare, and social services for the community through qualified professionals located on Moloka'i.
2. Encourage partnerships in healthcare provision to expand healthcare professional access, and diversity in service, resources and locations, including substance abuse treatment centers.
3. Support studies to determine community needs and underserved locations and ensure equitable distribution of services.

4. Support public health education and assessment programs throughout the island.
5. Encourage expansion of full-time mental and behavioral health case management positions, psychologists, and psychiatrists on the island.
6. Support a disabled person's infrastructure system that includes health and social programs, services for the frail elderly, assistance for home modifications to support aging in place, and long-term care facilities.
7. Support enhanced monitoring of care homes and transient facilities that provide services to mentally and physically disabled residents.
8. Encourage multi-modal transportation and recreation planning that increase opportunities for exercise through bike paths and pedestrian improvements.
9. Support wellness and nutrition training for residents.
10. Support traditional cultural practices for community health.
11. Support immigration services to assist new residents to integrate and become productive community members.
12. Support early childhood services for children and their families to provide quality learning and development.

**Actions**

<b>Table 9.5 Public Facilities and Services - Health and Social Services Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
9.5.01	Conduct community needs surveys and allocate funding to expand the number and variety of social services.	DHHC	
9.5.02	Coordinate with transportation and recreation planners to increase bikeways and pedestrian opportunities for exercise.	PR	DPW
9.5.03	Continue to provide social services for immigrants, early childhood, aging, and seniors.	DHHC	DOH, Local Cultural Services
9.5.04	Support and fund alcohol and substance abuse, domestic violence, sex assault, mental health, and families in crisis services, programs, and treatment centers.	DHHC	DHS DOH Nonprofit organizations
9.5.05	Form partnerships and provide assistance to develop a plan for establishing long-term and short-term supportive housing, palliative care, and hospice facilities.	DHHC	DOH Nonprofit organizations



## **9.6 CEMETERIES**

### **A. EXISTING CONDITIONS**

Moloka`i has numerous cemeteries maintained by various entities. The County of Maui Department of Public Works (DPW) maintains three cemeteries including the Veteran's Cemetery in Ho`olehua, `Ualapu`e Cemetery, and Kapa`akea Cemetery. The `Ualapu`e Cemetery is closed and no longer accepting burials. The Kapa`akea Cemetery is nearing capacity, with less than 50 burial sites remaining. Other cemeteries on Moloka`i include Kanakaloloa Cemetery at Ho`olehua and Homelani Cemetery at Manawainui maintained by DHHL, Maunaloa Cemetery owned by Moloka`i Ranch and maintained by the community, and several private cemeteries maintained by families or churches.

### **B. ISSUES**

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- Issue 1: The County DPW is not budgeted sufficient funds to maintain cemeteries on Moloka`i.
- Issue 2: The Kapa`akea Cemetery is nearing capacity and may be affected by flood zone and drainage issues.

### **C. GOAL, POLICIES, ACTIONS**

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**Goal** Moloka`i's cemeteries will be well maintained and meet the needs of the community.

#### **Policies**

1. Provide sufficient cemetery space in location(s) accessible to the community and away from the threat of SLR and flooding.

**Actions**

<b>Table 9.6 Public Facilities and Service – Cemeteries Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
9.6.01	Complete a site selection study to identify a location for a new cemetery.	DPW	Community
9.6.02	Work with the community to develop a map of gravesites at the `Ualapu`e Cemetery.	OED	Community

## **9.7 GOVERNANCE**

The County of Maui is the sole local government for the residents of the three inhabited islands of Maui Nui: Maui, Moloka`i, and Lāna`i. There are no townships or villages with separate municipal governments. The County seat and civic center is in Wailuku, Maui. Maui County has an elected Mayor with a four-year term and a nine-member Council with two-year terms. The term limit for Mayor is two consecutive terms and the term limit for Council is five consecutive terms. Moloka`i is served by the entire County Council and has one resident Council member. All voters in Maui County can vote for all nine Council seats.

### **A. EXISTING CONDITIONS**

Direct participation in Council meetings is difficult for Moloka`i residents. County Council meetings are held on Maui and are scheduled during normal working hours; transportation to and from these meetings for Moloka`i residents is limited by expensive flights. Recent improvements in telecommunications have enabled Moloka`i residents to participate remotely by phone conference.

Section 2.41.080, MCC, states a minimum of one member of the public from Moloka`i is required on a number of County Boards and Commissions. However, it appears this is not widely known throughout Moloka`i. Physical access to County Council and committee meetings and meetings with members of the County Council is also limited since Moloka`i residents have more limited travel options. The peninsula of Makenalua, commonly referred to as Kalaupāpā, is its own Kalawao County. The lands are owned by the Federal government, the State DLNR and DHHL.

### **B. ISSUES**

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- Issue 1: Moloka`i residents are not aware of the opportunities available to them to serve on County boards and commissions.
- Issue 2: Access to County government meetings is limited to teleconferencing, if it is available.
- Issue 3: The governmental structure of Makenalua is unknown once the State DOH relinquishes administrative oversight.

## **C. GOAL, POLICIES, ACTIONS**

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**Goal**     **Government services will be transparent, accessible, cost-effective, and responsive to meet the needs of Moloka`i's residents.**

### **Policies**

1. Support the implementation of Section 2.41.080, MCC, and expanded opportunities for Moloka`i residents to be involved in and affect County government decision-making.
2. Encourage public participation in government among all Moloka`i citizens in order to promote civic engagement.
3. Support a variety of information sources and technological connections such as video conferencing for citizens to participate, communicate, and stay informed about their community and government.
4. Develop improved government communication tools to help overcome existing language barriers.
5. Encourage elected officials at all levels of government to conduct regular public information meetings on Moloka`i to discuss issues of importance.
6. Encourage the convening of a task force to discuss governmental issues of Makaanalua.

**Actions**

<b>Table 9.7 Public Facilities and Services – Governance Actions</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
9.7.01	Continue to improve, promote, and publicize the availability of telecommunications and video conferencing for County services and for participation in County Council, and all board and commission meetings held on Maui.	Mayor's Office	Office of the County Clerk
9.7.02	Provide the MoPC with the Planning Director's annual status reports as described in Chapter 2.80B, MCC.	PD	
9.7.03	Conduct regularly-scheduled public information meetings on-island.	Mayor's Office	Maui County Council Moloka'i Council member
9.7.04	Ensure that a minimum of one Moloka'i resident is a member of each board and commission pursuant to the provisions of Section 2.41.080, MCC.	Mayor's Office	Maui County Council
9.7.05	Continue to support Maui County Community television on Moloka'i.	Mayor's Office	
9.7.06	Provide training to the MoPC on all applicable laws providing the legal framework agencies must follow when engaging in decision making that may impact Native Hawaiian traditional and customary practices. Fulfill new requirement for a Native Hawaiian Cultural Expert on the Moloka'i Planning Commission.	PD	

## 10 | East End Policy Statement

### Introduction and Description

This East End Policy Statement was prepared by the Mana`e community in the belief that the area's planning is best accomplished by the comprehensive and meaningful input of the majority of the people. It is in this light that this document was presented to the 1981 and 2001 East End Policy Statement updates to the Moloka`i Community Plan Advisory Committee for the County of Maui, and in formulating future planning for growth within this area.

The document was compiled from published survey data, tax, and land use maps, various County and State agency information, and extensive East End community input. This East End Policy Statement maintains the spirit and essence of the original East End Policy Statement of 1981. The revisions provided herein respond to the subtle changes that have occurred over the years on the East End. More significantly, it is the community's reaffirmation of the importance of protecting Mana`e as a special place for all of Moloka`i as a pu`uhonua, cultural kīpuka, and a place essential to `āina momona for its abundant fishponds, lo`i kalo, rich forests, streams, and springs.

Mana`e is defined as "to the direction of the east<sup>85</sup>, from where the winds blow", a description predating the western compass. Thus, the definition does not have a "magnetic" or "sunrise" orientation but refers to a definition by locality. The description of the "East End" as applied to this statement includes the areas by ahupua`a place name.<sup>86</sup> The boundaries are from Makolelau to Hālawā along Moloka`i's South Shore and from Pelekunu to Hālawā on the North Shore. These lands have similar use and ownership and match the community lifestyle, which this policy statement is meant to reflect. The three main differences distinguishing Mana`e from the rest of the island are her geography, her environment, and her people.

East Moloka`i includes the island's highest mountain range with Kamakou peak reaching 4,970 feet above sea level. The ridges and valleys sloping off this range provide rugged and natural barriers between the various ahupua`au, and end at the sea with numerous, well-protected, sandy beaches along her winding coastline. The frequency of rainfall supports an environment rich in water, lush tropical vegetation, fertile soils, perennial streams, and important spring lines.

Mana`e once sustained the highest population on the island. It is also where the oldest human settlement sites in the Hawaiian archipelago dating back to

<sup>85</sup> Pukui, Mary Kawena. *Hawaiian Dictionary*, 1971, University of Hawaii Press.

<sup>86</sup> United States Department of the Interior Geological Survey Map, Island of Molokai, 1952.

450 A.D. can be found. Mana`e contains the most important natural resources. Ola i ka wai – the life-giving waters – are evident especially in Mana`e’s pristine north shore valleys that produce 43 million gallons of water per day and are home to important native aquatic and diadromous species, such as `o`opu and hihiwai. Consistent with the principles of ancient land tenure, Mana`e’s native population maintains strong ties between the northeast and southeast valleys and coastline. The abundant resources in the northeast valleys provide a surplus for populations that historically and presently reside in the southeast valleys. Māhele maps from the Kingdom of Hawai`i period and the memories of hoa`āina knowledgeable of their palena indicate the presence of `ili lele, located on the north. These `ili lele are tied to south ahupua`a to functionally meet the subsistence and other cultural requirements of hoa`āina who need access to multiple resources. These connections continue today with many Mana`e families accessing the north shore to fish, farm, and gather.

The natural features of the land and major streams and springs contribute to a long heritage of `āina momona. Mana`e’s major taro producing valleys of Hālawa, Wailau, and Pelekunu are lined from one end of the valley to the other with intact lo`i kalo terraces. These agricultural features, and other traditional infrastructure, produce food in surplus. Ideal ocean conditions also support natural harbors, productive estuaries, and muliwai, that are essential for mariculture for fish and limu cultivation in numerous loko i`a along the southern coastline. These impressive monuments, and critical sources of food production, were engineered and constructed by ancient Hawaiian kūpuna, who hand-carried basalt stones in extensive ten-mile-long human chains that started from the north coast, up steep pali, and down the southern slopes of Mana`e, to the shoreline below. The south facing ahupua`a of Mana`e also boasts an extensive fringing reef that residents depend on for traditional subsistence fishing and gathering.

These natural assets comprise true wealth and are vital to the people’s sustenance and subsistence economy. Centuries-long, multi-generational relationships to `āina, and the regular use and access to natural and cultural resources of Mana`e’s north and south shore for traditional and customary Hawaiian subsistence, religious, and ceremonial practices solidify kama`āina relationships to the land.

Within this geography and environment resides a population living a lifestyle compatible with its surroundings, a uniquely Hawaiian island lifestyle often difficult to express in words, but one that produces a point of view quickly disappearing in many parts of Hawai`i. The continuation of this uniqueness and the assurance it will remain for future generations are the goals of this policy statement.

Moloka`i is home to some of Hawai`i's few remaining rural communities, where despite dramatic political and social change, Native Hawaiian culture and way of life have thrived. Moloka`i, and Mana`e, in particular, have been characterized as a cultural kīpuka, where kua`āina serve as repositories of Native Hawaiian values, knowledge, and practices for present and future generations. Ensuring continued access to, and the health of Mana`e's natural and cultural resources, are critical for the perpetuation of traditional and customary practices, such as fishing, gathering, cultivating lo`i, hunting, mālama iwi kūpuna, and spiritual practices.

There are many factors that threaten food and water security, native traditional practices and rights, and the continued vitality and community cohesiveness enjoyed by Mana`e's long-time residents. These threats underscore the importance of responsible planning to preserve the essence of what makes Mana`e special. Threatening factors include increased land speculation and the loss of ancestral and kuleana lands to adverse possession and quiet title claims. Other factors are the growing construction of luxury homes that serve as illegal transient vacation rentals and short-term rental homes that impact beach access, block traditional fishing trails, encroach on sensitive wetlands, springs, fishponds, old `auwai and lo`i kalo, and elevate property tax assessments.

Mana`e is the heart and life source of Moloka`i. The larger Moloka`i community identifies Mana`e as a pu`uhonua. Mana`e is a gathering place for island residents to enjoy family picnics, swimming, fishing, hunting, and hiking. Public and vehicular access to Mana`e's south-facing coastline is much easier than other parts of the island, which are blocked by fencing and locked gates over large private landholdings. Collectively, Mana`e is a community existing because of its history. The people work to protect that which makes Mana`e unique for themselves, its children, and generations yet to come, by responsibly planning its growth.



## **10.1 Environment and Natural Resources**

Mana`e's environment, rich in natural resources, is a sensitive ecosystem that requires the utmost care in planning for its survival.

### **A. EXISTING CONDITIONS**

The East End is blessed with abundant rain and numerous perennial streams. The north shore valleys exemplify this condition. Management of feral animal populations is required for watershed health; a healthy watershed is necessary to capture rainfall to recharge the aquifer.

The quantity of rainfall and limited human interference has helped to retain much of the fertile soil that was once found in many places on Moloka`i. Responsible land management, including preservation of coastal wetlands, are important to control loss of valuable soil.

The rich environmental characteristics of the land give rise to a pristine ocean ecosystem correspondingly as rich. Both near shore and ocean gathering opportunities are important to maintain the traditional lifestyle of Mana`e's people.

Many areas on the East End contain habitats where indigenous plant life still exists, as on the ridges between Pelekunu and Wailau Valleys. These habitats, whether mountain or coastal, provide unique ecosystems necessary for endangered life to survive, and must be adequately protected and preserved.

There are many wetlands along the coastal regions of Mana`e. Wetlands provide the recycling basins that control environmental pollutants and minimize the impact of sedimentation on ocean systems. These areas are habitats for endangered indigenous birds and are nesting grounds for several migratory bird species.

### **B. ISSUES**

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Issue 1: Overgrazing has exacerbated erosion.

Issue 2: Flooding is common through the many streambeds and low lands.

Issue 3: Tsunami inundation areas are common along the eastern coastal areas.

Issue 4: Mana`e is subject to tidal surges because of the high-water table and the low-lying coast area.

### **C. GOALS, POLICIES, ACTIONS**

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**Goal**            **Preserve, protect, and manage Mana`e's rich natural resources and ecosystems to ensure that future generations may continue to enjoy and protect the natural environment.**

#### **Policies**

1. Support control of grazing domestic and wild ungulates.
2. Support hunting opportunities for Moloka`i residents.
3. Support harsher penalties for the indiscriminate slaughter of wildlife.
4. Discourage intensive use of coastal low lands for resort or multi-family purposes, since the required modifications to the environment to overcome these problems, (i.e., stream diversions, excessive landfill, and sewage treatment), would have destructive ecological effects.
5. Support appropriate sewage disposal to protect groundwater and marine resources.
6. Support planning that would protect Mana`e's unique environment and the natural resources.
7. Review and assess Mana`e's sewage needs and implement appropriate infrastructure.

**Actions**

<b>Table 10.1 East End Policy Statement – Environmental and Natural Resources</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
10.1.01	Adopt recommendations made in the Mana'e GIS Mapping Project (2008) where appropriate. <sup>87</sup>	PD	State Community

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<sup>87</sup> The Mana'e GIS Mapping Project was initiated by Mālama Pono o Ka `Āina, Mana'e kūpuna and community members due to a concern that too much development in wetlands and “wet lands” (including ancient fishponds and lands that were traditionally cultivated in taro and other food crops) were being cleared and filled in for housing development. The project was also commissioned by the Department of Planning with the intent of incorporating it into the updated Plan. It provides GPS maps of important natural and cultural resources that warrant greater protection by the Department of Planning and other land use agencies, as well as the MoPC.

## **10.2 Cultural Resources and Traditional Land Uses**

Mana`e figuratively means “closer to the sun.” Native Hawaiians see the east as symbolic of their beginnings as a people and of their culture. Their hale faced the east, reflecting this orientation. In this perspective, Mana`e was considered more traditional.

It is within this context that an East End plan should be designed. This section serves to describe the cultural resources and traditional land use of the East End, historically and presently. At the same time, the East End plan directs this policy statement towards a more beneficial land use with respect to traditional values.

Mana`e contains a large inventory of traditional lands. Traditional lands are lands that formerly or presently employ traditional Hawaiian uses. It is land that remains ideally suited to embody the concept of Aloha `Aīna, “land care,” rather than “land use.” Traditional lands have fertile soil and are in proximity to adequate water. It is the exchange of aloha between the `āina and the kanaka, each providing the other with all their needs and wants, that sustains traditional lands.

Historically, Hawaiians knew no land ownership. They shared the land. Land was divided by natural geophysical boundaries or through political divisions, and were called ahupua`a. These were areas where Hawaiians built their homes, raised their families, and grew their `uala. These areas are now called kuleana land. These lands were also areas where Hawaiians cultivated their kalo, together, as a community.

Access to the mountains for gathering of materials for building or for medical needs were guaranteed, as was access to and along the shoreline for fishing. In addition, the Hawaiians collectively built, stocked, managed, and shared the resources of their ahupua`a fishponds.

Fresh water was essential for survival - kanaka and ecological. From the kuahiwi, the wai ran into the `auwai that fed the lo`i kalo. The wai would meet up with the stream carrying nutrients from the lo`i kalo down to the ocean. There, the mixing of fresh and salt water created the muliwai necessary for fish to spawn and limu to grow. Hawaiians understood that this was one interconnected system which depended upon each other for life.

Above all, there is a strong sense of community kuleana to create and pass down more than we have today to the next generations. What is given to those tomorrow will be determined by the care we give to the mountains, flatlands, marshlands, fishponds, reefs, and oceans of today.

## A. EXISTING CONDITIONS

Proper management of freshwater resources are necessary to ensure sufficient water for food production, drinking water, native stream life, healthy estuaries, and groundwater recharge. The health of our streams and nearshore estuarine environments depend upon sufficient freshwater discharge. Pursuant to the Hawaii Constitution, Article XI, sections 1 and 7, water is a public trust resource, held in trust by the State for the benefit of the people, for both present and future generations. Public trust purposes, which receive priority over private commercial uses, include domestic uses, Native Hawaiian and traditional and customary rights, appurtenant rights, environmental protection, and reservations for the DHHL Homelands.

Even given the social, economic, political, and environmental conditions of Hawai'i today, and particularly on Moloka'i, one cannot ignore the relative integrity of the East End's cultural resources. There are numerous archeological sites, many yet to be surveyed; perennial streams; marshlands, which were cultivated with kalo; fishponds; bountiful coastal areas; and limited accesses maintained for hunting and fishing. The interconnecting of the environment with the resident for well-being and survival, continues to play a major role in the lives of Mana`e residents. The embodying concept of Aloha `Aina with regards to traditional land use is even more important today considering economic and development pressures. There is a strong identification of Hawaiians with their Mana`e lands, and a supportive community for a subsistence kind of lifestyle and desire for this way of life. This lifestyle is more in keeping with the ways of the kūpuna and the previous occupants of this area.

One of the outcomes that resulted from the Mana`e GIS Mapping Project (2008) was the creation of a Traditional Land Use ("TLU") Overlay. The purpose of the TLU Overlay is to protect Mana`e's cultural and natural resources from one of the most intact cultural landscapes in all Hawai'i. Many Mana`e residents, especially the kama`āina, have a strong interconnection with the land and these resources, including use for subsistence, religious, spiritual, and ceremonial purposes.

The University of Hawai'i Archaeological Training Project, Kamalō, provided an inventory survey of archaeological sites in Kamalō. The sites identified in this survey are all sites referenced in *Molokai: A Site Survey*<sup>88</sup>. Sites identified in this survey, and in any subsequent archaeological reports and cultural impact assessments, should be included for nomination to the State and National Registers of Historic Places.

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<sup>88</sup> Summers, Catherine. *Molokai: A Site Survey* (1971).  
Chapter 10 East End Policy Statement

Halawa Valley is incredibly rich in archaeological and cultural properties. The 1975 Bishop Museum survey, only partially complete, has identified the oldest habitation site found on Moloka`i. The study reveals astounding patterns of pre-historic ecological adaptations by our Mana`e kūpuna. Halawa contains many heiau, pu`uhonua, ko`a, fishponds, habitation sites, lo`i, and `auwai systems, all of which are in an excellent state of preservation. Education is important to ensure proper use of this area, especially when considering its attraction as an excellent surf spot and the private access through Haka`ano for hunting.

Kukui o Lanikaula was the traditional home of Lanikaula, the famous prophet of Moloka`i. In the 16th century, he counseled and prophesied in a manner for which he was respected throughout Hawai`i. His kukui grove is still considered by Hawaiians today as sacred and of religious significance for traditional practitioners.

In recent years, there has been a renewed interest in Polynesian navigation. Theories have been developed and tested by the voyaging canoe Hokule`a that include Pu`u o Hoku as a navigational site, an area where the ancient Hawaiian navigators would study and then teach this navigational skill for the journeys back to Tahiti.

Moloka`i-nui a Hina, is one of the ancient names attributed to our island. Hina is the mother of Moloka`i. It is said that she resided in Kalua`aha. All other islands in Hawai`i, according to tradition, were born from Papa. This mating of Wakea with the goddess Hina has made Moloka`i special for those who can call Moloka`i their ancestral home. The site is located on private lands where cattle ranching operations take place. Kama`āina have reported that the Ka`ena o Hina has collapsed.

As the first settled area on Moloka`i, it is no wonder why so many cultural sites are found in Mana`e. Some sites are associated with heiau. They are still considered sacred places and should be protected, for example, Kakahaku, in Moanui, Paku`i in Manawai, and the areas of Kalua`aha and Mapulehu. Because of their significance, any plans to change these areas should be reviewed to ensure that activities, even if they don't meet the definition of "development," will not affect the integrity and the mana of the area.

## **B. ISSUES**

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Issue 1: Not all archeological sites are protected.

- Issue 2: Access, especially for those gathering for native Hawaiian traditional and customary practices, are not guaranteed.
- Issue 3: Fishponds are under threat of being filled.
- Issue 4: Fresh water is not being properly managed.
- Issue 5: Scientific and formal historical considerations do not necessarily reflect all the cares and concerns of the Native Hawaiian and Mana`e residents.

### **C. GOALS, POLICIES, ACTIONS**

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**Goal**            **Mana`e's rich cultural, historic, and archaeological sites, and cultural practices will be protected and perpetuated for their cultural and historical value, and for enjoyment of and sustainable use by future generations.**

#### **Policies**

1. Support the documentation of all cultural, religious, and archeological sites to support preservation of the cultural integrity of such sites or districts.
2. Support the conservation and preservation of archaeological sites, both large and small.
3. Support the preservation of Mana`e's style of living, traditional in basic philosophy.
4. Support access pursuant to appropriate management plans, guarantee access for practitioners to mauka and makai areas for hunting, gathering, and traditional and customary practices; historic sites, sacred and traditional places, and Wailau.
5. Encourage proper use of Halawa Bay by surfers, boaters and other recreational users.
6. Encourage development of a cultural resource management plan with strong community input for Halawa.
7. Support plans for erosion control and replanting of the kukui tree grove at Kukui o Lanikaula.

8. Support access to Kukui o Lanikaula with the development of a management plan.
9. Support the purchase of Kukui o Lanikaula to facilitate traditional and religious use.
10. Discourage advertising of Kukui o Lanikaula and Ke`ana o Hina by the visitor industry.
11. Support Pu`u o Hoku as a place to be restudied and preserved as a traditional area for observation and teaching.
12. Support the community having access to Pu`u o Hoku.
13. Support the restoration of Ka`ena o Hina.
14. Work with the private landowner to protect the area and institute appropriate protections from physical damages and deterioration from erosion and protection from domesticated and wild ungulates.
15. Support governmental protections through a "Natural Area Reserve" designation or other appropriate measures for Ka`ena o Hina.
16. Support an inventory of access trails and roads as traditional and cultural features.
17. Support access for practitioners to mauka and makai areas for hunting, gathering, ceremonial rituals, and other traditional cultural practices.
18. Support the preservation of fishponds for aquaculture.
19. Protect fishponds to preserve scientific knowledge obtained by supporting research of archaeological and historic concerns before they are reused.
20. Support the preservation and maintenance of any fishpond system complex, such as hatchery, pond, or trap characteristics.
21. Protect areas from tourist-related accommodations or businesses that change the social infrastructure of the area.



- 22. Support proper management of freshwater resources to ensure sufficient water for food production, drinking water, native stream life, healthy estuaries, and groundwater recharge.
- 23. Support the preservation of lands previously used for kalo cultivation for current day kalo cultivation.
- 24. Encourage cultural and traditional land use programs by encouraging development of a cultural resource management plan with strong community input for Halawa.

**Actions**

<b>Table 10.2 East End Policy Statement - Cultural Resources and Traditional Land Uses</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
10.2.01	Support the nomination of appropriate sites to the State and National Registers of Historic Places, including re-nominating all sites that were dropped from the State Register of Historic Places in 1979, if appropriate.	PD	State
10.2.02	Ensure that traditional and culturally significant lands are conserved, preserved, and protected by supporting designations to protect and preserve traditional lands under the DLNR conservation regulations, through County zoning, or other appropriate methods, including the creation of a Traditional Land Use Overlay.	PD	
10.2.03	Review land use policies for all coastal areas, wetlands, and systems engineered for kalo cultivation to preserve those	PD	

	lands for their cultural and environmental purpose.		
10.2.04	Provide appropriate access to the grove at Kukui o Lanikaula.	PD	Pu'u o Hoku Ranch, Community

**10.3 SOCIAL AND ECONOMIC RESOURCES**

Mana`e is made up of people with a variety of backgrounds, origins, and cultures. The majority of the community share a common value system best explained by the following:

1. A profound concern for the land and the care it deserves.
2. An avid interest in the ocean for its recreational value and the bountiful sustenance it can provide.
3. A deep respect for Hawaiian culture, past, and present.
4. A strong sense of community, and aloha for the Mana`e lifestyle.

The 2009-2013 estimated median family income (MFI) for East Moloka`i was \$51,807 which was 65% of the \$79,963 statewide MFI; West Moloka`i MFI was \$44,656 which was 56% of the statewide MFI.<sup>89</sup>

Based upon the previous East End Policy Statement, Mana`e has over 200 households, averaging 3.7 persons each. This limited breakdown suggests growth pattern guidelines must be unusually strict to prevent displacement of the larger portion of this population by commercial development. By income and educational measures, Mana`e residents cannot compete with the average statewide levels and planning; the Plan must reflect this concern. Economic growth must proceed with this value and income system in perspective. The Mana`e community wishes to preserve the traditional lifestyle, and tailor growth, so as not to lose the greater part of it or forfeit the options it leaves for its children.

**B. ISSUES**

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Issue 1: Demand for conformity to the capitalistic model and mounting outside pressures are adversely influencing the traditional lifestyle and value system.

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<sup>89</sup> Hawaii State Department of Labor & Industrial Relations (DLIR), December 2014 Chapter 10 East End Policy Statement

**C. GOALS, POLICIES, ACTIONS**

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**Goal**            **A vibrant economy that is compatible with community members' skills and supports the traditional lifestyle and rural character of Mana`e.**

**Policies**

1. Support economic opportunities that are suited to the skills of Mana`e residents, and responsibly utilize resources of the land to help retain Mana`e's rural lifestyle and aid in the preservation of Mana`e's many unique cultural and natural resources for the next generation.
2. Support economic development plans for Mana`e that focus on ecologically responsible and sustainable agriculture.
3. Support an economic development model that makes use of the present natural and social resources available in Mana`e.
4. Support advancements in aquaculture, agriculture, and cottage industries compatible and consistent with the rural and traditional community values and unique qualities of Mana`e.

**Actions**

<b>Table 10.3 East End Policy Statement – Social and Economic Resources</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
10.3.01	Coordinate with the various State, private, and County agencies to develop an economic strategy for Mana`e.	OED	Community
10.3.02	Support cottage industry laws that foster family-based businesses.	OED	Community
10.3.03	Support community-based agriculture and aquaculture entrepreneurial endeavors.	OED	State Community

**10.4 LAND USE**

## **A. EXISTING CONDITIONS**

Many of the goals meant to help preserve the rural lifestyle of Mana`e relate to land use. Mana`e has many conditions and problems confronting residents in this area. Its problems need to be clearly understood to effectively provide the answers the community seeks to ensure their local lifestyle can continue for future generations. The following concerns can be examined to better understand existing conditions. Many of the specific concerns noted in the 1981 East End Policy Statement are covered by existing State and County laws.

Land ownership in Mana`e is generally held in two size groups, both of which follow boundaries granted in the Great Mahele of 1835-1848. The ahupua`a of the ali`i and konohiki have become the large estates of today, while the small kuleana grants of the tenant farmers have become the agricultural residences of the East End. Historic factors such as natural disasters, economic requirements, military commitments, and educational needs have caused shifts in population to other areas of the State for entire generations at a time. Absentee owners of today do not always know the exact physical location of their lands. Ahupua`a ownership and metes and bounds have remained fairly clear within the large family estates, while kuleana ownership, on the other hand, often has not.

The socio-economic position of the typical kuleana owner over the 130-year period has produced a descendant heir ownership problem that has made some kuleana land untradeable because of unclear title, the cost of quiet title proceedings, and the number of multiple owners on kuleana parcels. The smaller kuleana grants have not been as clearly defined as the larger estates. The peculiar historic arrangement of original boundaries, the inaccuracies of original surveying techniques, as well as sheer numbers all contribute to a descendant heir ownership of kuleana lands that is problematic.

In this respect, both the ahupua`a and kuleana landowners are in the same problem category. The increase in land tax has created financial hardships. The ahupua`a owner is usually able to manage any increase in land taxes; the kuleana owner often is not.

These unique Mana`e situations, combined with the conventional statewide problems of land tax and development, produce hurdles over which responsible land use and land tax assessment becomes a problem. Tax burdens on kuleana lands may be alleviated by assessments based on actual use, rather than potential use.

The physical problems facing responsible land use are another unique aspect of Mana`e. Although statistically, the East End contains one-half of Moloka`i's land area, the actual acreage suitable for intensive land use is well below that figure. The high mountain range and accompanying valleys leave only a small portion available for development. Developments produce far greater long-range impacts than first anticipated because of the limited amount of usable land.

**B. ISSUES**

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- Issue 1: Absentee owners do not always know the exact physical location of their lands.
- Issue 2: The metes and bounds of kuleana lands are not always clear.
- Issue 3: Original boundaries and the inaccuracies of original surveying techniques have contributed to problems with kuleana land title.
- Issue 4: Increased land taxes have created financial hardships.
- Issue 5: Developments produce far greater long-range impacts than might be first anticipated because of the limited amount of usable land.

**C. GOALS, POLICIES, ACTIONS**

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**Goal** Landowners will have clear boundaries for their properties and kuleana land owners will be exempt from real property taxes.

**Policies**

1. Support the accurate identification of property boundaries.

**Actions**

<b>Table 10.4 East End Policy Statement - Land Use</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>

10.4.01	Encourage residents to explore existing kalo and kuleana land tax relief options.	Dept. of Finance, RPT Council	OHA
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**10.5 PUBLIC FACILITIES**

**A. EXISTING CONDITIONS**

Most of Mana`e's population is concentrated in the south coast. Public facilities include two public rights-of-way to the shoreline, three day-parks, an athletic field with a community center, two accesses to public hunting areas, and a substation for fire and emergency services. Many privately-owned beach accesses are in public use but are not designated as public accesses. These facilities are inadequate. The addition of a few key amenities would add to the quality of life in Mana`e, while still preserving its rural character.

As feral ungulates further degrade the native forest ecosystem, it becomes more imperative that watershed protection is made a priority. The DLNR Watershed Partnership Program, several large landowners in Mana`e holding upland and forested properties, and TNC implemented the Kamalo/Kapualei East Moloka`i Watershed Partnership ("EMoWP") in 1999. This consisted of erecting a 5.5-mile long conservation fence to protect 30,000 acres of high montane, native pristine forest from ungulates.

Community hunters are engaged in the conservation work by participating in aerial hunts and accessing lands along foot trails and dirt roads to thin out herds below the fence line. They freely share surplus meat with the community. The EMoWP is currently proposing the expansion of its fencing efforts further east. Subsistence hunters continue to be important in the management strategy. Mana`e Moku provides comprehensive plans that involve ahupua`a-based, mauka-a-makai management involving the native community, including local hunters.<sup>90</sup> Cabins would aid hunters who need to access higher elevations to control ungulate populations, and conservation workers who monitor and repair the fence line, perform forestry work, and remove invasive species.

Initial community dialogue reveals strong opinions for and against creating a public boat ramp and associated improvements for more ocean access. Sentiments were expressed in preliminary discussions hosted by the `Aha Kiolo o Moloka'i. This controversial issue should be handled by the

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<sup>90</sup> The Mana`e Traditional and Customary Practices Report dated January 2017 is an example of such a plan.

community until it is ready to make a definitive statement about the issue of improvements for ocean access.

While the `Aha Kiole o Moloka`i provides expertise on integrating indigenous resource management practices with western management practices and utilizes indigenous governance protocols, it engages as a modern-day best practice the input and participation of all people from all races and ethnic groups who reside on Moloka`i.<sup>91</sup>

## B. ISSUES

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- Issue 1: Emergency medical services response time to Mana`e is a great concern.
- Issue 2: The only public library is far from Mana`e residents.
- Issue 3: There is no provision for storage and display of the many archeological and cultural resources from Mana`e.
- Issue 4: Feral ungulates have degraded the native forest ecosystem.

## C. GOALS, POLICIES, ACTIONS

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**Goal**            **Mana`e will have the appropriate range of public facilities, recreational opportunities, and programs that meet the needs of the area's residents and visitors while preserving its rural character.**

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<sup>91</sup> The consultative and active participation processes described as Free, Prior, and Informed Consent (FPIC) as a protocol recognized in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

[www.un.org/esa/socdev/unpfii/documents/DRIPS\\_en.pdf](http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf)

Also as a reference, legal authority, and guide is the federal Advisory Council on Historic Preservation's (ACHP) advisory issued on "Section 106 and the U.N. Declaration on the Rights of Indigenous Peoples: Intersections and Common Issues: Article 18 and Section 106" for matters that may impact Native Hawaiian historic and cultural sites that are listed or are eligible for inclusion on the State and National Registers for Historic Preservation (e.g., fishponds, underwater heiau, traditional fishing ko`a and shrines), and traditional/cultural landscapes, that may be impacted by the placement of a boat ramp and associated improvements (e.g., shoreline alteration, fishpond destruction, reef dredging, marine benthic excavation, etc.).

**Policies**

1. Support maximizing the responsible use of existing areas and resources while creating the least amount of privacy infringement on adjacent residents.
2. Protect Mana`e’s archeological and cultural resources from being sent to other island display centers.
3. Support watershed protection.
4. Explore the construction of mauka cabins with the dual purpose of hunting and conservation, and support the installation and maintenance of hunting and conservation cabins on the mountain along each ahupua`a or cluster of several ahupua`a.
5. Discourage any action and preemptive action to authorize and/or permit a boat ramp in Mana`e without the free, prior, and informed consent of the Mana`e community.
6. Support the acquisition of easements and/or right-of-entry agreements to erect cabins over private and State lands.
7. Support a community process to determine if a boat ramp in Mana`e is needed and identify an appropriate location and size.

**Actions**

<b>Table 10.5 East End Policy Statement – Public Facilities</b>			
<b>No.</b>	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
10.5.01	Encourage the State to establish a medical/dental/health service installation on the East End.	DHHC	State
10.5.02	Encourage the State to explore the feasibility of a library and cultural center in Mana`e at an appropriate location.	OED	State



10.5.03	Encourage appropriate State agencies and private landowners to install and maintain hunting and conservation cabins on the mountain along each ahupua`a or cluster of several ahupua`a.	DWS	State Private Landowners
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## 11 | WEST END POLICY STATEMENT

### INTRODUCTION AND DESCRIPTION

This West End Policy Statement was prepared by the Maunaloa and Kaluako`i community in the belief that the area's planning is best accomplished by the comprehensive and meaningful input of the majority of the people. It was compiled from published survey data, current tax and land use maps, various County and State agency information, and West End community input over two years. In addition, this Policy Statement includes a significant amount of information from the Community-Based Master Land Use Plan for Moloka`i Ranch, which was compiled by the Land Use Committee, Moloka`i Enterprise Community, in 2005. That document was put together through hundreds of hours of input from over 1,000 community members, and much of it is still accurate in its documentation of background information about the West End, as well as in its reflection of community sentiment.

The description of the "West End" as applied to this statement includes the following areas by place name: the boundaries are Pāpōhaku to Waiakane on the south shore of the West End; Kawahiau to Na`aukahihi on the North shore of the West End; Kawahiau to Pāpōhaku on the West shore; and Kawailoa to Na`aukahihi on the East shore of the West End.

Despite its dry climate, the West End of Moloka`i is rich in natural and cultural resources, which attracted people there. The areas on the leeward side with the most resources and use by the kānaka maoli were the coasts and the summit area surrounding Maunaloa. The North, West, and South coasts of the West End vary dramatically in their topography, and therefore, in their settlement patterns. The North coast tended to be devoid of permanent settlement due to the sea cliffs and its exposure to strong winds and big north swells; Mo`omomi is the only exception. Composed mostly of sand dunes and low coastal vegetation, Mo`omomi was used as a fishing station. In addition, the sand dunes of Mo`omomi were used for burials.<sup>92</sup>

The West coast is exposed to strong winds and big north swells, but protected embayments along it serve as safe places for landing canoes and shelter. Residential clusters were concentrated near these bays, generally below the 50-foot elevation to access marine resources. There are also mouths of gulches strewn up and down the West and South coasts, unlike the North coast. They served as shelter and had sources of fresh water. There is evidence of habitation near these gulches, and fishing villages in the areas of Pāpōhaku, Kepuhi, and Kawakui Iki.

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<sup>92</sup> The Office of Hawaiian Affairs; University of Hawai`i at Mānoa Department of Urban and Regional Planning, Spring 2005 Planning Practicum, *Pāpōhaku Dunes Draft Preservation Plan*, 2005.

The West coast has a very high concentration of cultural sites and its historical uses are well known. Ko`a were found in abundance along the entire coastline, indicating the rich ocean resources found here. Pāpōhaku Beach and the area surrounding it are historically significant. North of the beach is Kaiaka Rock. This major outcropping is home to a heiau facing Pāpōhaku Beach, which had been used as an observation tower for fishing and scouting purposes. Just below Kaiaka Rock is a canoe heiau, which is a rare type of shrine. Its existence indicates the importance of this area for canoe launching and landing. In addition to fishing and canoe access, the beach maintains a spiritual use. The dunes along Pāpōhaku Beach served as burial grounds, as did the sandy areas and dunes of Mo`omomi and Keonelele (Flying Sands). Keonelele is the sandy, inland area that connects the two coastal dune systems. Lastly, to the south of Pāpōhaku is Pu`u Ko`ai, the area where bodies were prepared for burial.

The South coast generally had calmer waters and shallow reef systems that were not found on the West and North coasts. The shallow reef area off La`au Point, called "Penguin Banks," was well known to be a rich fishing area. Along the boulder coastline were habitats for edible mollusks such as `opihi, pūpū`awa, pipipi, and a`ama crab, while the nearshore area had an abundance of algae and edible seaweed such as limu kohu. Several fishponds were constructed on the eastern portion of the South coast, along with two important fishing villages, located at Kapukawahine and Kanalukaha. Situated in the upland area of La`au Point are bell stones, which the kānaka maoli would ring to announce to the village of Kanalukaha the arrival of ali`i by canoe. Also, the area around Hale o Lono has been noted as the fourth extensive burial locality on the west end of the island.

The summit region extends from Maunaloa town on the west, along the ridge, to Pu`u Nānā on the east – all above 900 feet in elevation. Traditional dryland agriculture once thrived in this area with the cooler temperatures that resulted from the elevation and strong winds. There was also believed to be a native forest of kukui, hala, `ie`ie, `iwa ferns, ginger, and hau, which served to break the winds that today blow unabated across Kaluako`i. Crops grown there included sweet potato, dryland taro, and sugarcane.

Site surveys have found evidence that the area was home to numerous adze quarries and adze manufacturing sites. The adzes were used by the kānaka maoli across the island. Both the adze manufacturing and the agricultural areas were intermingled with house sites and rows of stone walls. These archaeological sites indicate significant levels of settlement in the Maunaloa region.

The summit zone, generally thought to be the most sacred, is known for its association with gods. The Maunaloa summit plateau was also the location for games and ali`i recreation. One important wahi pana (sacred place) on the summit region is Ka`ana. It is revered by many hula practitioners as the birthplace of the hula, or ka hula piko (the navel or center of hula).

Today, the majority of land ownership is under Moloka`i Ranch's control. The population is located in Maunaloa town, and in the Kaluako`i area, which includes homes in the Pāpōhaku Subdivision, as well as in the three condominium complexes. Subsistence is an important part of the lives of many Maunaloa residents, as it is a way of survival. For many of the Native Hawaiians who live on the West End, the subsistence activities carried out here are also traditional and customary practices, including fishing, gathering, and hunting.

## **11.1 ENVIRONMENT AND NATURAL RESOURCES**

The West End's environment, rich in natural resources, is now a fragile ecosystem that requires careful planning for its survival.

### **A. EXISTING CONDITIONS**

The majority of the land on the West End is dominated by non-native species. The topography and rainfall patterns indicate that the area used to be lowland dry forest and shrub. The vegetation of this landscape includes mostly grasses and shrubs, with few species of trees. On Moloka`i Ranch land, these native ecosystems were permanently altered by cattle grazing, followed by the cultivation of sugarcane and pineapple. These activities caused severe degradation and erosion of the West End. In addition, large numbers of wild deer exacerbate the erosion. The area is now dominated by invasive species such as the kiawe tree and Christmas berry, which have spread throughout the area.

The northwestern edge of the island has a few remaining pockets of native dominated landscape communities. The Mo`omomi Preserve, which is managed by TNC, is one of the native lowland dry forest and shrubland communities that still exists in the State. Mokuo Preserve is a 1,718-acre parcel that was donated to the Moloka`i Land Trust from Molokai Properties Limited (Moloka`i Ranch). It contains approximately 5 miles of rugged shoreline, remnant native coastal strand and dune ecosystems, seasonal wetland, and several ancient Hawaiian sites, including an adze quarry at Pu`u Kaeo. Lastly, there are a few additional small pockets of the native dominated coastal dry shrubland and grassland communities along the northwestern corner. This landscape community is similar to the Mo`omomi Preserve community but has less species diversity. The West End also has some occurrences of Natural Heritage rare vertebrates and plant species, such as the `akoko. The endangered Hawaiian monk seal frequents the beaches of the West End.

Erosion is one of the most significant problems that needs immediate attention. A substantial portion of the ranch lands near Maunaloa have bare soils that erode during seasonal storms. The worst problems occur along the south shore from Punakou to Halena as the inner reef waters are red from land-based sedimentation. Similar problems occur elsewhere along the coast, but the western and northern coastal waters have huge winter surf that help flush away the seasonal sedimentation.

There is a substantial coral reef protection area that runs along the south shore of the West End. It begins at Hale o Lono and extends east along much of the southern shore of the island. The protected area includes numerous fishponds. The fringing reef along this coastline is a treasured resource of Moloka`i. The inshore areas along this area are also important hatcheries/breeding grounds for many key

subsistence marine fish species. This is confirmed by the many ko`a locations. Inshore marine species still are abundant along the rugged coastline and tidal pool systems. The limited access is the main reason why this northwest coastline has remained unchanged in the past few decades.

One natural resource issue that intersects directly with the Land Use and Housing section is the impact to the Pāpōhaku Dunes by development. Owners of coastal lots along Pāpōhaku Beach have State and County regulations to follow when determining the placement of their homes. However, those regulations are not completely congruent with the recent research that has been conducted along that dune system. The Pāpōhaku Dune Cultural and Natural Resource Preservation Plan, compiled by the UH Mānoa Department of Urban and Regional Planning Practicum in 2005, includes extensive information that demonstrates the need for tighter controls to protect the entire dune system. Policies and actions related to this issue are included in the Land Use and Housing section.

Lastly, the West End has a history of large-scale agriculture, namely sugarcane and pineapple. Unfortunately, those crops were grown in unsustainable ways, leaving the wells on the West End dried up, and the soils filled with pesticides and black plastic. Therefore, agricultural opportunities are now limited, but possible, if agricultural lands are managed properly.

## **B. ISSUES**

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- Issue 1: The West End suffers from severe erosion caused by historical cultivation of sugarcane and pineapple, along with overgrazing of domesticated and feral ungulates.
- Issue 2: Erosion leads to siltation, which regularly causes the coastal waters of the West End to turn red from the land-based sedimentation.
- Issue 3: Coastal waters are impacted by run-off from human impacts, including lawn fertilizers, animal excrement, vehicle waste, as well as run-off from dune systems disrupted by ATV and trucks on near-coastal areas.
- Issue 4: Tsunami and flood inundation areas are common along the Kaluako'i coastal areas.
- Issue 5: Invasive species dominate much of the land.
- Issue 6: Agricultural lands are in need of remediation.

## C. GOAL, POLICIES, ACTIONS

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**Goal**            **Preserve, protect, and manage the West End's rich natural resources and ecosystems to ensure that future generations may continue to enjoy and protect the natural environment.**

### **Policies**

1. Support proper management of grazing domestic and wild ungulates.
2. Support hunting opportunities for Moloka`i residents.
3. Encourage erosion control measures to protect coral reefs from degradation.
4. Encourage replanting areas with native plants, such as wiliwili, a`ali`i, ma`o, pili, akia, `ohi`a, ulei, or other drought-tolerant crops that would remediate and fertilize the soil and boost Moloka`i's economy, such as medicinal marijuana or hemp.
5. Support eradication of invasive limu and fish.
6. Encourage review and assessment of the West End's sewage needs by private facility owners.
7. Clear litter and supply adequate rubbish bins at beach access points.
8. Provide invasive species education and controls for hunters, hikers, residents, and visitors.

**Actions**

<b>Table 11.1 West End Policy Statement - Environment and Natural Resources</b>			
	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
11.1.01	Clear litter and supply adequate rubbish bins at County beach access points. Create and post clear signage about the detrimental effects of leaving rubbish, such as plastic bags and other litter, near coastline.	PR	Moloka'i Ranch, West Moloka'i Association
11.1.02	Provide educational opportunities regarding protection of mauka lands, coastal lands, dunes, and native species for residents and visitors.	Office of the Mayor, Environmental Program	MVA, West Moloka'i Association, DLNR, MoPC



## **11.2 CULTURAL RESOURCES AND TRADITIONAL LAND USES, INCLUDING SUBSISTENCE**

### **A. EXISTING CONDITIONS**

There are numerous cultural sites, including burials throughout the West End, though some areas have higher concentrations. Archaeological maps, coupled with oral history interviews provide insight as to the types of sites, hence the cultural land uses that may be found here.

Evidence suggests that Mo`omomi, to the north, was an ancient fishing station and burial ground. The area is also noted for the presence of the Kalaina Wāwae, which prophesized the arrival of the boot-wearing Caucasian. The area along the west coastline, between `Ilio Point and Pāpōhaku Beach, has a high concentration of remnant shelters, caves, and mounds. This area includes the Kawākiu Iki Complex and the Kawākiu Nui North that are believed to have been utilized for habitation.

Oral history accounts confirm that this area was used for temporary fishing villages, which explains the remnants of ancient homes and fishing shrines along the coast. A historical trail, Ke alapūpūkea Moloka`i (the shell road at Moloka`i), runs from Mo`omomi, around `Ilio Point, and to the south, through Pāpōhaku Beach, to La`au Point, east to Iloli in the south. This coastal trail was constructed with white shells (pūpūkea) to ensure safe nighttime travel under the direction of Maui Island Chief Kiha-a-Pi`ilani. Po`olau, the area immediately south of Pāpōhaku, is an area rich with habitation, agricultural and natural communities.

The entire area is dotted with burials, especially those areas composed of sand, since this was a common material in which burials were placed. The main burial sites include the dunes of Mo`omomi and Pāpōhaku, and Keonelele, the area where sand is believed to blow southwest from Mo`omomi towards Pāpōhaku. There are also numerous archaeological sites located in the La`au Point area. The majority of sites in this region are of fishing villages and ko`a.

Another area with a high concentration of cultural sites is located to the east of Maunaloa. Along the southeast edge of the abandoned pineapple fields are numerous ko`a, heiau, and petroglyphs, as well as remnants of enclosures and platforms that were once used for agriculture and habitation. This area also has evidence of adze quarries and adze manufacturing. This summit zone is the location of the head of major gulches, which explains its association with the gods. It is also where Kā`ana is situated, which is believed to be the birthplace of hula. Kā`ana remains significant in traditional and cultural hula practices today. Unfortunately, the area has been degraded by grazing cattle and deer. The native forest has nearly disappeared. Access is only permitted with the permission of Moloka`i Ranch. Some residents have expressed concern that this highly sacred site is promoted as a tourist attraction.

Below is a summary of each of the main issues that need to be addressed: Cultural Sites, Subsistence Activities, Hunting, Fishing, and Access for Traditional and Customary Practices.

### Cultural Sites

The Community-Based Master Land Use Plan for Moloka`i Ranch proposed the creation of a Kaluako`i Cultural District to protect the historic and cultural sites and resources for current and future spiritual, cultural, and subsistence uses. The West End community still supports this idea, with appropriate management to be determined between the community and Moloka`i Ranch.

Such a Cultural District should be designed to protect the historic and cultural sites and resources for current and future spiritual, cultural practices, and subsistence uses. It should include, but not be limited to, the following historic and cultural sites and complexes:

- Cultural and subsistence use and resource areas.
- A Community-Based Subsistence Fishing Area (CBSFA) of one-fourth mile on the North and West shore and to the outside of the reef surrounding the remainder of the West End.
- Punakou, which is inclusive of Ka`ana, Pu`u Nānā, and Ho`olehua.
- Paka`a trail, which is located in the entire Kolo Gulch.
- Paka`a cultivation fields in the uplands of Kopala.
- Kalaipahoa-`Amikopala and Kukui adze quarry sites.
- Kamaka`ipō complex of sites in the entire gulch.
- Kahualewa Heiau, mauka of Waikāne Gulch.
- Heiau, mauka of Halena Road and between Kahinawai and Oneohilo gulches.
- Kawakiu Iki and Kawakiu Nui village sites and burials.
- Dunes of Keonelele.
- Various fishing ko`a along the shoreline.
- Burial Sites located west of Kaluako`i water tank in Kaka`ako Gulch.
- All sites identified in the Community-Based Master Land Use Plan for Moloka`i Ranch.<sup>93</sup>

Additional surveys should be conducted so all sites can be properly documented and protected.

### Subsistence

In summer 1993, the Governor's Moloka`i Subsistence Task Force met with subsistence practitioners in focus groups to map sites important for fishing, ocean

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<sup>93</sup> Moloka`i Enterprise Community & Townscape, Inc. *Community-Based Master Land Use Plan for Moloka`i Ranch*. 2005, page 57-58.

gathering, hunting, forest and stream gathering, gardening, raising animals, and trails to access the resources. The map was published in the final report of the Task Force. Practitioners identified sites that had been used in the past, were currently used, and sites where they would want to go if access were opened. The map shows that the entire coastline of the West End is important for subsistence fishing and ocean gathering. It also indicates that the mauka lands are very important for subsistence hunting and forested areas are accessed for subsistence gathering.<sup>94</sup>

Today, subsistence continues to be an essential and viable sector of the overall island economy, especially on the West End. Subsistence fishing, hunting, and gathering not only provides food, but contributes to a healthy diet. Obtaining equivalent food items, such as fish, from stores can be costly and families on fixed incomes are known to purchase cheaper, less healthy foods. Subsistence activities require physical exertion and provide opportunities for relatively inexpensive recreation that contributes to better health. For these reasons, the community supports policies that protect and encourage subsistence activities.

### Hunting

Long-time West End hunters have noted there are currently too many deer on the West End, which has numerous detrimental effects. First, it puts the entire deer population at risk, as high concentrations of such animals bring an increased chance of disease and a potential weakening of the overall herd health. It also causes negative impacts to the land, as unmanaged ungulates loosen soil and create erosion. In addition, large deer populations pose dangers to drivers passing through deer crossings.

The community agrees that appropriate management is needed to control the population numbers to prevent disease and keep the herd strong. If management is not implemented and deer do get sick, then there may become a need to eradicate, which is NOT wanted.

Moloka'i Ranch currently leads paid hunts for tourists. The community understands that the Ranch needs to make money, and they are not against such hunts, but they would like to ensure such practices are balanced with community subsistence needs and access. They currently have access to hunting grounds with Ranch permission but would like increased access.

While the County generally does not have regulatory authority over hunting on private lands, the desire is that a full management plan for subsistence deer hunting and population control be developed and implemented by community and Moloka'i Ranch. The plan should include:

- Boundaries on hunting areas, such as a one-half mile buffer around residential areas/homes.

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<sup>94</sup> Matsuoka, McGregor, and Minerbi. *Governor's Moloka'i Subsistence Task Force Final Report*. 1994

- Required hunter education, including the need to limit the number of bucks shot (no trophy hunting), and only hunting what is needed for your family and community.
- The younger generation should hunt for kūpuna and others who are not able to hunt. In the old days, people took care of community; that needs to continue.

The overall goal is to continue the tradition of subsistence hunting and providing for our families. Access for hunting by community should be increased with permission by Moloka'i Ranch.

### Fishing

Local fishermen have noted an overall decline in the numbers of fish along the West End coastlines. They say that access to various areas is limited (northwest and southwest corners) to those who can walk in and should be maintained as such until more management is implemented. The recommendation is that a Community-Based Subsistence Fishing Area (CBSFA) be implemented for the West End, and for the entire island.

### Fishponds

There are several fishponds along the south coastline of the West End. The community would like to see these fishponds restored for production of fish, as well as for cultural and educational purposes.

## **B. ISSUES**

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- Issue 1: There are currently too many deer, which puts the entire deer population at risk, creating a higher chance of disease.
- Issue 2: Moloka'i Ranch limits access to hunting grounds for residents.
- Issue 3: Lack of proper management of deer population and subsistence hunting.
- Issue 4: Insufficient protection of our nearshore fisheries. A Community-Based Subsistence Fishing Area for the West End and the entire island should be developed.
- Issue 5: West End fishponds are in disrepair.
- Issue 6: Cultural sites need more survey, documentation, and protection.
- Issue 7: Lack of education for residents and visitors for subsistence and culturally appropriate hunting, fishing, gathering, and visiting of cultural sites.

### C. GOAL, POLICIES, ACTIONS

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**Goal**        **West End's rich cultural sites and practices, including subsistence hunting, gathering, and fishing, will be protected and perpetuated for sustainable use by future generations.**

**Policies**

1. Support sustainable agricultural and forestry management to protect Moloka'i's land, water, and marine resources.
2. Support the development of a "West End Subsistence Management Plan for Deer" between owners of Moloka'i Ranch and community members.
3. Support the establishment of the island as a community-based subsistence fishing area (CBSFA) pursuant to Section 188-22.6, HRS, to preserve marine and nearshore resources for generations to come.
4. Support the documentation of all cultural, religious, and archaeological sites to preserve the cultural integrity of such sites.
5. Support the conservation and preservation of archaeological sites, both large and small.
6. Support the development of a cultural resources management plan with strong community input.
7. Support access, pursuant to appropriate management plans, for practitioners to mauka and makai areas for hunting, gathering, and traditional and customary practices; as well as historic sites, and sacred and traditional places.
8. Support an inventory of access trails and roads as traditional and cultural features.

9. Support the preservation of fishponds, along with any parts of a fishpond system complex such as hatchery, pond, or trap characteristics.
10. Support access to Mount Kā'ana with permission from Moloka'i Ranch, along with reforestation of the area with native and indigenous plants, to facilitate traditional and cultural use. Reinforce the surrounding fence to protect replanting from deer and cattle.
11. Discourage promotion of Mount Kā'ana by the visitor's industries.
12. Support education for residents and visitors for culturally appropriate subsistence-based hunting, fishing, gathering, and protocol for respecting cultural and historic sites.
13. Support development of Moloka'i's cultural events, such as Makahiki and Ka Hula Piko, and tourism guidelines that protect island culture and natural resources.
14. Encourage the education of property owners regarding the need to prevent damage to, or destruction of, historic and cultural sites.

**Actions**

<b>Table 11.2 West End Policy Statement - Cultural Resources and Traditional Land Uses, Including Subsistence</b>			
	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
11.2.01	Nominate important sites to the State Register of Historic Places where appropriate.	PD	SHPD
11.2.02	Fund additional cultural and traditional land preservation and enhancement programs on the West End.	OED	Community
11.2.3	Support designations to protect and preserve traditional and culturally significant lands under the DLNR conservation regulations during the County zoning process, or other appropriate methods, including the creation of a Traditional Land Use Overlay.	PD County Council	Community DLNR

## **11.3 SOCIAL AND ECONOMIC RESOURCES**

### **A. EXISTING CONDITIONS**

The West End consists of two primary population centers, the town of Maunaloa and the residences at the Kaluako'i Condos and Pāpōhaku Ranchlands. The majority of land ownership is under Moloka'i Ranch's control. According to the most recent US Census in 2010, the West End (zip code 96770) consists of 691 residents, with 376 located in Maunaloa town. The 2009-2013 estimated median family income (MFI) for West Moloka'i was \$44,656, which was 56% of the Statewide MFI.<sup>95</sup> However, the median income for the average Maunaloa resident is estimated to be closer to \$15,000.<sup>96</sup> Many of these residents receive government assistance and live in Federal and State-subsidized housing.

Maunaloa town, where Moloka'i Ranch is headquartered, has many buildings that formerly housed local businesses owned and run by the Ranch, such as a movie theater, gas station, restaurant, and hotel (The Lodge). Most of these buildings have fallen into disrepair and are safety hazards that the community dreams of seeing reopened. The former Kaluako'i Resort is located along the western coastline, and houses Ranch-owned dilapidated buildings that the community would like to see reopened, such as the restaurant and bar, and small stores within the Kepuhi Condo complex.

Overall, the West End community would like to see an economic development scheme suited to the skills of the residents, the resources of the land, and one providing employment opportunities that can combine pride, a sense of accomplishment, possibilities for expansion, and a general sense of well-being on the part of the community.

### **B. ISSUES**

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- Issue 1: Lack of economic opportunities that fit the West End's rural character and cultural values.
- Issue 2: Developed areas/buildings, especially Kaluakoi Resort and The Lodge at Maunaloa, have been severely neglected, creating a safety issue.
- Issue 3: A lack of locally owned businesses that create sustainable, culturally appropriate jobs.

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<sup>95</sup> Hawaii State Department of Labor & Industrial Relations (DLIR), December, 2014

<sup>96</sup> Maunaloa Vista Recertifications, 2016.



## **C. GOAL, POLICIES, ACTIONS**

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**Goal:**            **A vibrant economy that is compatible with community members' skills and supports the traditional lifestyle and rural character of the West End, especially the Kaluakoi Resort and The Lodge at Maunaloa.**

**Policies:**

1. Support economic development that fits with the rural character of West End.
2. Support renovation and repurposing of existing infrastructure for business development, such as the theater, gas station, and restaurants.
3. Support and encourage locally-owned entrepreneurial enterprises.
4. Support and encourage tourism-related businesses that focus on ecotourism and cultural tourism.
5. Support development of a crematorium as a possible business for the West End, which could serve the entire island.
6. Support cottage industry laws that foster family-based businesses.

**Actions**

<b>Table 11.3 West End Policy Statement - Social and Economic Resources</b>			
	Action	Lead County Agency	Partners
11.3.01	Coordinate with the various State, private, and County agencies to develop a strategic economic plan for the West End.	OED	Moloka'i Ranch, Community
11.3.02	Incentivize community-based entrepreneurial endeavors through funding, as available, and education for the West End business community.	OED	DBET, Moloka'i Ranch, Community, MEO

## 11.4 LAND USE AND HOUSING

### A. EXISTING CONDITIONS

The West End has numerous issues related to its current land use and housing situation. Balance must be maintained among the community, County, State, and Moloka`i Ranch to create a win-win situation. The issues need to be clearly understood to effectively provide the answers the community seeks to ensure their local lifestyle and the lifestyles of future generations.

Although the West End contains one-third of Moloka`i's land area, the actual acreage suitable for intensive land use management is well below that figure. The mountain range and accompanying valleys leave only a small portion available. This situation, along with the lack of potable water sources, result in any proposed development having a far greater impact than might be anticipated in most circumstances. In addition, the economy of Maunaloa is severely distressed, as there are currently very few job opportunities. Any proposed development could result in increased property values and taxes. Thus, the two primary issues to be addressed in this section are affordable housing and future development.

#### Affordable Housing

Overall, the local community wishes to continue living here, no matter what growth is proposed. To do so, the affordable housing rates that exist need to be stabilized at current rates, without increase to fees and/or taxes, until such a time as economic conditions improve. However, Moloka`i Ranch is currently proposing significant rate hikes to the affordable housing that they own and manage.

Affordable housing is defined by the U.S. Department of Housing and Urban Development (HUD) as housing for which the occupants are paying no more than 30 percent of their income for gross housing costs, including utilities.

The median gross income for households in Maunaloa is \$37,750 a year, or \$3,146 a month. The median rent for the city is \$745 a month. Households who pay more than 30 percent of their gross income are considered to be rent overburdened. In Maunaloa, a household making less than \$2,483 a month would be considered overburdened when renting an apartment at or above the median rent. 51.95% of households who rent are overburdened in Maunaloa.<sup>97</sup>

#### Future Development

The community wants to protect that which makes the West End unique for themselves, their children, and generations to come, by encouraging responsibly planned growth. The Policies and Actions below are aimed at enriching and enhancing the West End community through such responsible growth based on community needs and input.

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<sup>97</sup> <https://affordablehousingonline.com/housing-search/Hawaii/Maunaloa>

The community strives to include the concerns of all, regardless of land ownership or economic position, in order to be representative and meaningful. Future development must be made realistically responsible to the people it affects to prevent loss of identity, values, and their precious lifestyle. Current and future owners of Moloka`i Ranch will profit from the valuable natural and social resources the West End has to offer; therefore, it should share in the solution of community problems as well.

## **B. ISSUES**

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- Issue 1: Insufficient stock of truly affordable housing and rate hikes are currently proposed for affordable housing units owned by Moloka`i Ranch.
- Issue 2: Development threatens community access to hunting and fishing grounds for subsistence and wetland/wildlife areas.
- Issue 3: There is a lack of community input to mitigate the impact of proposed development.
- Issue 4: Erosion and the resulting sedimentation causes substantial problems for the nearshore ecosystem.
- Issue 5: Property taxes are a burden to the community.
- Issue 6: Potential construction on lots on Pāpōhaku Beach within the primary dune may cause damage to cultural and/or natural resources.

## **C. GOALS, POLICIES, ACTIONS**

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**Goal**            **Landowners will work with the community to protect the environment and culture of the West End, including providing housing that is affordable to residents.**

### **Policies**

1. Support the construction of truly affordable housing and maintenance of current affordable housing rates.
2. Consider depressed economic standards on Moloka`i when setting property taxes.
3. Recognize and protect subsistence as a major part of the community's livelihood.

4. Encourage developers to work with the community to preserve the rural character of the West End.
5. Encourage developers to provide access to protect the continuation of traditional gathering.
6. Provide better notice and encourage the community to provide input on proposed developments and create opportunities for dialogue between the developer and the community.
7. Educate landowners on proper protocol when grave sites are discovered during construction. SHPD and the Burial Council should be contacted.
8. Encourage at least one-fourth of each individual agricultural lot-owner's property to be under permanent crop cover, such as trees.
9. Encourage the State to consider extending the State Conservation District to include entire Pāpōhaku Dune System.<sup>98</sup>
10. Coastal lots along Pāpōhaku Beach should be built as far back from the ocean as possible to protect life and property, as well as beach and dune resources.
11. Work with the community to hold MoPC meetings at times and locations acceptable to MoPC and the community.
12. Require developers to show infrastructure is adequate or will be updated, prior to starting a project, to minimize development impact.
13. Archaeological, cultural, and historical remains in the large-scale development area or surrounding affected region shall be professionally and traditionally investigated before any construction begins.
14. Support policies requiring setbacks farther from the coastline and primary dune systems.<sup>99</sup>

## **Actions**

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<sup>98</sup> Authors of Pāpōhaku Dune Cultural and Natural Resources Preservation Plan (2005) found that primary dunes are within 17 coastal lots of the Pāpōhaku Ranchlands Subdivision. As a result, land use activities in these privately-owned dunes are not subject to State Conservation District regulations.

<sup>99</sup> Hawai`i Climate Change Mitigation & Adaption Commission

**Table 11.4 West End Policy Statement - Land Use and Housing**

Action No.	Action	Lead County Agency	Partners
11.4.01	Explore appropriate action to limit the height of new buildings on the West End to a maximum of 35 feet.	PD	
11.4.02	Explore appropriate action to require large-scale commercial developers to conduct a social impact assessment for any proposed development, identifying potential impacts on the community and proposed mitigative measures.	PD	
11.4.03	Survey of wildlife on Moloka'i should be continued into the West End area with documentation of traditional lands.		
11.4.04	Establish a community-supported cap on TVRs and STRHs for the West End.	PD	County Council, MoPC

## **11. 5 INFRASTRUCTURE, PUBLIC FACILITIES AND SERVICES**

### **A. EXISTING CONDITIONS**

#### Overview

The West End of Moloka`i lacks numerous public facilities and services, and the basic infrastructure that does exist is in disrepair and/or is inadequate. Public facilities include seven public rights-of-way to the western shoreline, Maunaloa Community Center, Maunaloa Park (baseball/softball fields), Pāpōhaku Beach Park (County park that provides picnic areas, camping spaces, restrooms, and beach access), and Kapukahehu Beach controlled by Moloka`i Ranch (Dixie Maru Beach). Moloka`i Ranch controls access to much of the shoreline, including all coastal areas south of Kapukahehu (Dixie Maru), which means access is limited to those who can walk in, or those who ask for Ranch permission to enter. The addition of a few key amenities would add to the quality of life to the West End, while still preserving its rural character.

#### Emergency Services

The closest fire station to Maunaloa is in Ho`olehua, which is 12 miles away. The main police station is in Kaunakakai, which is 16.5 miles away. This means it takes too long to respond to fires and other emergencies on the West End. Moloka`i Fire Department's record of response times to incidents on the West End exceeds national standards. Furthermore, the 2016 call volume for all incidents west of Mahana is an amount that is comparable to the Puko`o fire substation on the East End.<sup>100</sup> Property and environmental damage, as well as personal welfare would be better protected if there were a fire and police substation in Maunaloa. Lastly, the only shelter on the West End is Maunaloa Elementary School, which is a tsunami shelter, but not a hurricane shelter. The closest hurricane shelter is the Moloka`i High School in Ho`olehua.

#### Water

The water supply for the West End is supplied by Moloka`i Public Utilities and Wai`ola O` Moloka`i. The quality of water provided by utility companies is regulated by the DOH. Regular water quality testing is performed, and water quality requirements are met. However, the community lacks confidence in the safety of the drinking water.

The water supplied to the West End of Moloka`i is regulated by DOH Safe Drinking Water Branch as the Maunaloa-Kaluakoi (PWS231) water system.<sup>101</sup> As of December 26, 2017, the ground water for this water system is pumped from Well 17, disinfected with chlorine and conveyed to the Maunaloa and Kaluako`i communities through a series of closed pipelines, tanks, and pump stations.

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<sup>100</sup> Moloka`i Fire Department (2017).

<sup>101</sup> State of Hawaii, Department of Health, Safe Drinking Water Branch memorandum dated January 29, 2018.

Kualapu`u Reservoir and the Moloka`i Irrigation System surface water are no longer being utilized. If there is an extended outage at Well 17, Moloka`i Ranch may use surface water from the east Moloka`i mountains and treat it through the Ranch's Pu`u Nana Water Treatment Plant. This is an emergency mode of operation.

Between 2013-2017, the Maunaloa-Kaluakoi (PWS 231) water system has received three Tier 2 violations for exceeding the maximum contaminant level ("MCL") for Total Trihalomethanes ("TTHMs").<sup>102</sup> A violation of the MCL occurs when the Locational Running Annual Average at a sample point exceeds 80 micrograms per liter (mcg/L). Following each of the violations, Moloka`i Ranch provided the required public notification to their customers and took steps to reduce TTHM concentrations. These steps included a flushing program to reduce water age, increased testing of TTHMs, purchase of a benchtop TTHM analyzer, conversion of the Maunaloa-Kaluakoi water system to groundwater, and replacement of the Maunaloa 3.0-million-gallon reservoir. The Maunaloa-Kaluakoi water system has met all other Federal and State drinking water standards, which cover over 90 bacteriological and chemical contaminants and is currently in compliance with all Federal and State drinking water regulations.

In exchange for expedited development permission in the 1970s, the Ranch agreed to provide all of the water required for its projects. These contracts with the County of Maui are still in effect and apply to the current owner and to all successors. The Ranch continues to provide water to its properties, but at rates that were approved by the PUC after the Ranch shut down most operations in 2008 and threatened to shut down its water system too. Water rates are now among the highest in the nation. DOH Safe Drinking Water Branch encourages all drinking water utilities to recover all operational costs through rates for long-term sustainable finances to support the delivery of safe drinking water. Moloka`i Ranch is responsible for providing residents with safe, clean, and affordable drinking water.

### Roads

West Moloka`i private roads, owned by Molokai Properties Limited (MPL), are used to access public parks and private residences. They are needed for emergency responders, tsunami evacuation routes, and MEO transportation. Almost all of these private roads are in desperate need of repair.

Moloka`i Ranch repairs its roads as needed and to the extent permitted by its resources. When Kaluako`i and the Ranchlands were developed by the original subdivision developer, Kaluakoi Corporation, rights of way were designed, surveyed, platted, and recorded with County approval. These rights of way are the means for delivery of government services, including emergency responders, tsunami evacuation routes, and MEO transportation. There are additional platted and recorded rights of way, including four-wheel drive roads to Hale O Lono and the Kaluako`i rights of way, which permit public access to remote beach sites.

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<sup>102</sup> Ibid.



Water drainage systems, including culverting and erosion control areas were designed and installed in accordance with County requirements. The platted rights of way include public utility easements with assets owned by MECO, Hawaiian Telephone, Spectrum, and the Water District. These public utilities provide essential health, safety, and community services to the residents of West Moloka`i.

### Public Services

There is a need for medical, dental, vision, and substance abuse services on the West End. Most of these services are located in Kaunakakai, and therefore, not easily accessible for all. Drug abuse is one of the top concerns of the Maunaloa community, and many residents believe having counseling and related services available would help to address the issue.

In addition, the only public library on Moloka`i is located in Kaunakakai, and the community has expressed their desire to create a cultural center to house cultural artifacts from the West End, both for protection/preservation, as well as for educational purposes.

## **B. ISSUES**

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- Issue 1: Emergency service (fire, ambulance, and police) long response time is a great concern.
- Issue 2: Insufficient emergency warning sirens, access, supplies (gas), and shelters.
- Issue 3: Lack of community confidence in safety of drinking water and expensive water rates (no agricultural water available).
- Issue 4: Private roads have been neglected and are in disrepair.
- Issue 5: No access to medical, dental, vision, or much needed drug rehabilitation services.
- Issue 6: The only public library on-island is far from West End residents.
- Issue 7: There is no provision for storage and display of the many archaeological and cultural resources from the West End.

## **C. GOAL, POLICIES, ACTIONS**

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**Goal**        **The West End will have the appropriate range of public facilities, recreational opportunities, and programs that meet the needs of the area's residents and visitors, while preserving its rural character.**

**Policies**

1. Ensure West End residents have access to clean, affordable water through protection, improvement, regular testing, replacement, and enhancement of the existing water supply, and development of new water sources, as needed.
2. Ensure West End residents have roads that are in good condition.
3. Support development of medical/dental/vision/drug rehab center in Maunaloa.
4. Support development of a public library and cultural center for the West End.
5. Support locating fire, safety, emergency and ocean rescue services on the West End as population increases warrant.
6. Support a substance abuse treatment center on the West End.
7. Request exploration of the feasibility of a library and cultural center on the West End at an appropriate location.
8. Support sufficient warning systems, access, supplies, and shelters.
9. Encourage testing by DOH Safe Drinking Water Branch for contaminants at residential faucets of at least seven homes quarterly.

**Actions**

<b>Table 11.5 West End Policy Statement - Infrastructure, Public Facilities and Services</b>			
	<b>Action</b>	<b>Lead County Agency</b>	<b>Partners</b>
11.5.01	Improve disaster warning systems, including more warning sirens in the Kaluako'i/Pāpōhaku area.	EMA	State
11.5.02	Create access through Kulawai Loop from Kapukahelu beach to Maunaloa for emergency evacuation use.	EMA, DPW	Moloka'i Ranch
11.5.03	Explore the feasibility of the County taking over the water system for the West End.	DWS	Moloka'i Ranch
11.5.04	Explore the feasibility of the County taking over the maintenance of the roads on the West End.	DPW	Moloka'i Ranch West Moloka'i Home Owners Association

## 12 | IMPLEMENTATION AND MONITORING

The preceding chapters identify programs, projects, and actions that need implementation to actualize the Moloka`i Island Community Plan’s vision, goals, and policies. Chapter 2.80B, MCC, specifies an implementation program for the Plan’s actions and milestones and requires status reports to monitor the progress of implementation. The implementation program includes a capital improvement element, an implementation schedule, and a financial element.

### A. IMPLEMENTATION

The Plan’s Capital Improvement Program (CIP) element includes the infrastructure systems and public facilities and services that will be needed over a 20-year planning period, in 2-year increments, to implement the Plan’s vision, goals, and policies. CIP projects are included in the implementation schedule to facilitate capital improvement programming and serve as a guide for forthcoming large infrastructure budget items. The list does not include repair and maintenance projects.

The implementation schedule is included in this chapter and includes a description of the project or program, priority, timing, lead implementation agency (County), estimated cost, and potential funding source(s). Actions are identified as Priority 1 through Priority 6, with Priority 1 being the highest priority. Identifying high priority actions helps agencies focus on implementing key actions considering time and budget constraints. Priority 2 actions are still considered important for implementing the Plan. The following questions were used to identify Priority 1 actions:

1. Will the action address an urgent issue?
2. Is the action required for public health and safety?
3. Is the action required by legal mandate?
4. Is the action required to prevent the loss of an irreplaceable resource?
5. Will the action benefit the majority of the community?
6. Will the action significantly improve the quality of life of Moloka`i residents?
7. Is the action required for other actions to be initiated?
8. Is the action already funded?

Actions may be implemented by the lead County agency or by another entity, such as the State or nonprofit organizations, and assisted by the County agency. For actions that are not the primary responsibility of the County, and there is not a cost to the County budget, the estimated cost column in the implementation table is “not applicable” (N/A). The implementation program should provide enough flexibility over the life of the Plan to allow for reprioritization and adjustments to the level of

funding. Implementation of the actions listed in the schedule is subject to available funding.

### **Infrastructure Planning and Finance Policy Framework**

The infrastructure funding strategy provides an efficient and equitable means of planning and financing infrastructure improvements. The County CIP funding strategy is comprised of three policy statements with underlying strategies to effectuate the policies.

#### **1. Infrastructure Services Policy:**

The County is responsible for determining areas where infrastructure and public facilities will be supported.

#### **2. Infrastructure Expansion Policy:**

Developers are generally responsible for public facility and infrastructure expansion costs associated with their projects. As a condition of subdivision or development approval, the County often requires new developments to construct on-site water, roads, wastewater, park facilities, and other infrastructure and public facilities pursuant to County standards. Upon completion of construction, the County may require the developer to dedicate the infrastructure/facilities to the County. Developers may also be required to donate easements or other types of partial rights to the County. In addition, developers are often required to provide financial assurance, such as bonding, to ensure enforcement of needed corrective action(s) or uninterrupted operation (in case of bankruptcy, abandonment, or any other default on financial obligation).

The County has also considered the imposition of impact fees, which are designed to mitigate the impact of new development on infrastructure and public facility systems. These one-time payments are made by the developer. Fees are typically passed on to either the seller of land or homebuyer to pay for the cost of infrastructure caused by new development. While the enabling ordinances for traffic impact fees have been enacted, the required studies that determine the actual fee amounts have yet to be adopted; other impact fee ordinances have been discussed but not enacted.

To ensure that no ambiguities exist regarding infrastructure funding responsibilities, the County may establish an infrastructure funding strategy to ensure that infrastructure improvements are implemented prior to or concurrent with development by the responsible party depending on the nature of the infrastructure project.

### **3. Existing Deficiencies Policy:**

Through its CIP program, the County is responsible for funding operations and capital improvements to address existing deficiencies of County-owned and operated systems.

The Existing Deficiencies Policy shall be implemented by, but not limited to, the following strategies:

**A. *Identify existing service deficiencies and project future operations and maintenance needs:*** Using the CIP program, needs assessment studies, or adopted level-of-service standards, the County will identify existing service deficiencies and projected operations and maintenance needs. The County may provide revenues sufficient to maintain the minimum acceptable level-of-service standards over the 20-year planning horizon. The County will encourage the State to upgrade its facilities to meet the County's level of service (LOS) standards.

**B. *Develop and Utilize Alternative Funding Sources:*** The County could consider alternative funding sources to be used to finance major CIP projects. Some of these sources are currently available while others would require enabling legislation or voter approval before they could be utilized. Such alternatives include: public-private partnerships, which can save time and costs; strategic budget allocations or trust funds to create special funds for specific purposes; special district financing, such as tax districts or redevelopment districts, where revenues are reinvested in the same geographic area; and peak demand pricing, where the charge for the use of public facilities or infrastructure is increased during periods of heaviest use.

### **B. MONITORING**

The Monitoring and Evaluation Program establishes a strategy to track Plan implementation, evaluate the effectiveness of policies and programs, monitor the quality of life on Moloka`i, and allow for periodic program adjustments. This strategy includes establishing and monitoring performance indicators to help implementing agencies attain planned outcomes. Specific benchmarks will be used to measure progress in the implementation of community plan policies and actions. The Department of Planning will coordinate with the appropriate agencies and program specialists to establish benchmarks for major programs and initiatives. Physical, environmental, cultural, and socio-economic indicators will also be used to assess the overall quality of life on Moloka`i.

The Department of Planning will oversee the Monitoring and Evaluation Program, which will include the preparation of a Monitoring Report. The Department may modify or add indicators, as needed, to track the impacts of Plan implementation. The Department will prepare a monitoring report to validate the progress of Plan implementation and provide a portrait of the quality of life on Moloka`i.

Table 12.1 includes a core set of 39 indicators that could be used to monitor progress toward achieving the goals and objectives of the Plan. Many indicators identified in the Plan have been borrowed from existing plans, programs and reports, and are based on available and reliable data to ensure their usefulness throughout the planning horizon. However, they can be modified and updated as new data becomes available.

Furthermore, the quality of life indicators are intended to represent a range of measurements across the various chapters of the Plan. The indicators are regional in nature to focus on the island as a whole. Where possible, commonly used indicators have been chosen to facilitate comparisons between Moloka`i and other jurisdictions. These core indicators provide a snapshot of the quality of life on Moloka`i and track the progress of key issues that the community plan intends to address. Table 12.2 articulates how the indicators relate to the Plan goals and details appropriate sources of data.

**Table 12. 1 Example Core Indicators**

<b>ENVIRONMENT INDICATORS</b>	<i>LAND USE</i>
	1 Building permits by type
	2 Building permits issued in tsunami inundation zones and future SLR (%)
	3 Average density of new developments
	4 New urban developments consistent with Urban and Rural Design Principles (%)
	5 Housing Affordability Index
	<i>TRANSPORTATION</i>
	6 Vehicle miles traveled
	7 Commute mode shares
	8 Annual transit ridership
	9 Dedicated bike lanes (total miles)
	<i>INFRASTRUCTURE</i>
	10 Recycled waste (%)
11 Parks and Open Space per 1000 population (acres)	
12 Energy consumption by source (%)	
13 Energy consumption per capita	
<b>BUILT INDICATORS</b>	<i>ECONOMIC DEVELOPMENT</i>
	14 Cost of Living Index
	15 Employment by sector
	16 Value of agricultural production
	17 Permitted B&Bs and STRHs (#)
	18 Frequency of passenger flights
	19 Food produced and consumed locally
	<i>POPULATION / COMMUNITY</i>
	20 Unemployment rate
	21 Poverty rate
	22 College bound rate
	23 Drug and alcohol arrests
	24 Child abuse and neglect
	25 Sex assault, domestic violence, and mental health
	26 Licensed health care practitioners
	27 Adult residential care homes (# beds)
	<i>CULTURAL HERITAGE</i>
	28 Hawaiian Language students (#)
	29 Subsistence food sources
30 Properties listed on the State or National Historic Registers (#)	
31 Scenic roadways (total miles)	
<b>SOCIAL ENVIRONMENT INDICATORS</b>	<i>WATERSHED SYSTEMS</i>
	32 Reclaimed water use (%)
	33 Watershed health
	34 Drinking water quality
	<i>OCEAN / MARINE ENVIRONMENT</i>
	35 Coastal water quality
	36 Healthy coral reefs (%)
	37 Reef fish biomass
	<i>WILDLIFE AND NATURAL AREAS</i>
	38 Threatened and endangered species (#)
39 Protected and conservation lands (total acres)	
<b>NATURAL ENVIRONMENT INDICATORS</b>	



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	<b>Built Environment Indicators</b>	<b>Objective to Achieve Chapter Goals</b>	<b>Data Sources</b>
	<b>LAND USE AND HOUSING</b>		
1	Building permits by type	Provide housing choices / create mixed-use communities	PD
2	Building permits issued in tsunami inundation zones and future SLR (%)	Reduce risk from coastal hazards	PD
3	Average density of new developments	Create walkable communities / increase housing affordability	PD
4	New urban developments consistent with Urban and Rural Design Principles (%)	Create compact, efficient, human scale communities / enhance historic character	PD
5	Housing Affordability Index	Increase housing affordability	NAR methodology / UHERO / Maui County Data Book
	<b>TRANSPORTATION</b>		
6	Vehicle miles traveled	Reduce fossil fuel consumption	Maui County Data Book / HI DOT
7	Commute mode shares	Provide a multi-modal transportation system / reduce fossil fuel consumption	HDOT
8	Annual transit ridership	Provide a multi-modal transportation system / reduce fossil fuel consumption	County DOT
9	Dedicated bike lanes (total miles)	Provide a multi-modal transportation system / reduce fossil fuel consumption	HDOT
	<b>INFRASTRUCTURE</b>		
10	Recycled waste (%)	Minimize solid waste / divert solid waste to recycling	Department of Environmental Management
11	Parks and Open Space per 1000 population (acres)	Expand opportunities for recreation	PR
12	Energy consumption by source (%)	Reduce fossil fuel consumption / increase use of renewable energy	DBEDT
13	Energy consumption per capita	Reduce fossil fuel consumption	DBEDT

**Table 12.2 Core Indicators, Objectives, and Data Sources (continued)**

	<b>Social Environment Indicators</b>	<b>Objective to Achieve Chapter Goals</b>	<b>Data Sources</b>
	<b><i>ECONOMIC DEVELOPMENT</i></b>		
14	Cost of Living Index	Quality of life indicator	County of Maui Data Book
15	Employment by sector	Economic diversification	County of Maui Data Book
16	Value of agricultural production	Support agricultural economy	UHERO
17	Permitted B&Bs and STRHs (#)	Diversify the tourism industry	PD
18	Frequency of passenger flights	Reliable air transportation	County of Maui Data Book
19	Food produced and consumed locally	Increase locally grown food	DOA, CTAHR
	<b><i>POPULATION / COMMUNITY</i></b>		
20	Unemployment rate	Economic resilience	UHERO / U.S. Dept. of Labor, Bureau of Labor Statistics
21	Poverty rate	Economic resilience	US Census Community Survey via DBEDT
22	College-bound student rate	Increase post-secondary education	Kids Count Data Centre, Annie E. Casey Foundation
23	Drug and alcohol related arrests	Effective support services for individuals and families	Crime in Hawaii, Uniform Crime Reports
24	Child abuse and neglect	Effective support services for individuals and families	State DHS and Child Welfare and Adult Protective Services
25	Sexual assault, domestic violence and mental health	Effective support services for individuals and families	State DHS and Child Welfare and Adult Protective Services
26	Licensed healthcare practitioners	Comprehensive health care system	County of Maui Data Book
27	Adult residential care homes (# beds)	Strengthen the eldercare infrastructure system	County of Maui Data Book
	<b><i>CULTURAL HERITAGE</i></b>		
28	Hawaiian language students (#)	Protect the diverse island culture and local traditions	State DOE
29	Subsistence food sources	Protect the diverse island culture and local traditions	County of Maui Data Book
30	Properties listed on the State or National Historic Registers (#)	Protect historic cultural resources	State DLNR, Preservation Division
31	Scenic roadways (total miles)	Protect scenic vistas	PD

**Table 12.2: Core Indicators, Objectives, and Data Sources (continued)**

	<b>Natural Environment Indicators</b>	<b>Objective to Achieve Chapter Goals</b>	<b>Data Sources</b>
	<b>WATERSHED SYSTEMS</b>		
32	Reclaimed water use	Decrease pollution, sustainability indicator	DOH, Safe Drinking Water Branch
33	Watershed health	Protect and enhance native eco-systems	DLNR, DOH, University of Hawaii, DWS
34	Drinking water quality	Increase water quality, basic quality of life	State DOH, Safe Drinking Water Branch, DWS
	<b>OCEAN AND MARINE ENVIRONMENT</b>		
35	Coastal water quality	Decrease pollution	DOH, Clean Water Branch
36	Healthy coral reefs (%)	Improve reef health	DLNR, Division of Aquatic Resources
37	Reef fish biomass	Increase reef health, preserve biodiversity	DLNR, Division of Aquatic Resources
	<b>WILDLIFE AND NATURAL AREAS</b>		
38	Threatened and endangered species (#)	Preserve biodiversity	Pacific Region US Fish and Wildlife Service
39	Protected and conservation lands (total acres)	Protect sensitive lands	County of Maui

**Moloka'i Island Community Plan Implementation Actions**

<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
<b>Capital Improvement Projects (CIP)</b>								
Water	8.1.09	Develop improved water transmission and/or storage systems to provide better fire protection.	CIP	1	On-going	DWS	100	County
Stormwater Management	8.3.02	Build dispersion and retention facilities to address dirt road runoff.	CIP	1	2022-2023	DPW	TBD	County, State, Private
Stormwater Management	8.3.03	Implement the Kaunakakai Master Drainage Plan.	CIP	1	2018-2037	DPW	1,000 per year	County
Stormwater Management	8.3.08	Complete the Kaunakakai drainage system.	CIP	1	2018-2020	DPW	TBD	County
Stormwater Management	8.3.09	Reconstruct culverts to 100-year flood specifications on all County roads.	CIP	2	2022-2023	DPW	TBD	County
Transportation	8.5.13	Fund and construct a public parking area in Kaunakakai to relieve existing parking requirements on businesses wishing to expand or improve.	CIP	1	2022-2023	DPW	TBD	County, Private
Parks & Recreation	9.1.07	Coordinate planning design, and construction of a new Kaunakakai gymnasium and athletic building that meets Moloka'i's unique sports needs and serves as a hardened EMA community shelter for disasters and is located outside of the flood zone.	CIP	1	2020-2021	PR	35,000	County, State

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Police	9.2.03	Coordinate land acquisition, planning, design, and construction of a new Moloka'i Police Station at a location that meets the unique needs of the MPD for Moloka'i, out of the special flood hazard area and tsunami evacuation zone and promotes practical and safe emergency response for the entire Moloka'i community.	CIP	1	2018-2020	MPD	TBD	TBD
<b>CHAPTER 3 NATURAL, HERITAGE AND SCENIC RESOURCES</b>								

**Moloka'i Island Community Plan Implementation Actions**

<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
Natural Resources	3.1.01	Assist with conferences or workshops of key Federal, State, and local agencies, and community and nonprofit leaders to discuss, plan, and prioritize actions to address environmental and natural resource issues.	Project	1	2018-2023	OED	5	County
Natural Resources	3.1.02	Compile GIS data and traditional ecological knowledge to map the highest value ecological areas and natural resources.	Program	2	2018-2023	PD	50	County, Federal, Private
Natural Resources	3.1.03	Compile GIS data to map primary and secondary groundwater recharge areas to help prioritize protection and restoration efforts.	Project	1	2018-2023	DWS	2	County, Federal
Natural Resources	3.1.04	Assist in conducting workshops with stakeholder groups to	Project	1	2018 - 2023	OED	N/A	N/A

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		develop an integrated natural and heritage resources management system including traditional ecological knowledge.						
Natural Resources	3.1.05	Assist in conducting or coordinating public education and involvement events to build community-based stewardship and implementation capacity.	Program	2	On-going	OED	N/A	N/A
Natural Resources	3.1.06	Assist in the development of a West Moloka'i dry native forest and lowland shrub restoration program.	Program	2	2018-2023	OED	N/A	N/A
Natural Resources	3.1.07	Consult with UHMC, Moloka'i Education Center to develop and manage a native plant nursery for community restoration projects.	Program	2	2018-2023	OED	5	County
Natural Resources	3.1.08	Conduct outreach to agricultural, ranching, and development interests to implement BMPs to reduce excess sediment loss, herbicide, and pesticide use.	Program	1	2018-2023	OED	20	County
Natural Resources	3.1.09	Work with Federal, State, and County agencies to initiate a program to provide education and support for community stewardship of the coastal areas, including conducting baseline studies on coastal water quality and coral reef conditions.	Program	1	2018-2023	OED	100	County, State
Natural Resources	3.1.10	Develop a toolbox of green infrastructure BMPs and conduct workshops for consultants, designers, developers, and builders.	Project	2	2018-2023	DPW	50	County, State

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Natural Resources	3.1.11	Develop a toolbox of BMPs for use by residents and businesses to improve ecosystem health and water quality in urban and coastal areas. Provide assistance or workshops on BMPs and education to change business and household practices. Maintain a website for public education on water quality pollution prevention and BMPs.	Program	2	On-going	DWS	10 annually	County
<b>Moloka'i Island Community Plan Implementation Actions</b>								
<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
Natural Resources	3.1.12	Assist with development of a community-based game management plan, including BMPs.	Project	1	2018-2023	OED	150	County, State
Natural Resources	3.1.13	Continue to support organizations that eradicate invasive species.	Program	On-going	On-going	DWS	N/A	N/A
Natural Resources	3.1.14	Encourage the State to establish a quarantine treatment facility on Moloka'i.	Project	1	2018-2023	OED	N/A	N/A
Natural Resources	3.1.15	Assist in developing educational materials to educate visitors, including visitors engaged in hunting and fishing, about the importance of natural and cultural resources to the cultural and subsistence practices of Moloka'i's residents, and how they may prevent damage to these resources.	Project	1	2018-2023	OED	15	County

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Natural Resources	3.1.16	Work with the State, County, private landowners, and cultural practitioners to ensure that watershed protection, as well as other conservation measures provide appropriate access, through fencing and other means, for cultural and subsistence activities.	Program	1	On-going	DWS	N/A	N/A
Heritage Resources	3.2.01	Complete and regularly maintain a GIS inventory of cultural, archaeological, and historic resources and trails assembled from existing inventories and databases to be used for project review.	Program	1	On-going	PD	N/A	N/A
Heritage Resources	3.2.02	Identify other significant cultural property types, including rural historic landscapes and traditional cultural properties and take action to include appropriate sites on the National Register of Historic Places.	Project	1	2022-2035	PD	10	County, State
Heritage Resources	3.2.03	Establish archaeological and historic districts where high concentrations of sites exist.	Project	1	2018-2023	PD	10	County, State
Heritage Resources	3.2.04	Provide education and incentives to encourage property owners to nominate structures and sites to the State and National Registers of Historic Places.	Program	2	2018-2023	PD	N/A	N/A
Heritage Resources	3.2.05	Coordinate with cultural practitioners and State agencies to develop public education programs on the proper gathering and use of subsistence resources.	Program	2	2018-2023	Mayor's Office (Environmental Coordinator)	N/A	N/A



**Moloka'i Island Community Plan Implementation Actions**

<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
Heritage Resources	3.2.06	Develop educational materials addressing heritage and natural resources impacts from unpermitted ground altering activities; disseminate educational materials widely, including to private landowners and visitors; provide instructions for reporting unpermitted activities. Train Moloka'i Development Services Administration (DSA) personnel to immediately respond to complaints.	Program	1	2018-2023	DPW	5	County, State
Heritage Resources	3.2.07	Pursue State and County cooperation to update and implement the Mālama Cultural Park master plan.	Project	2	2022-2035	PR	TBD	County
Heritage Resources	3.2.08	Explore options to protect cultural sites listed in Appendix 3.3.	Project	1	2018-2023	PD	N/A	N/A
Heritage Resources	3.2.09	Establish a comprehensive historical interpretive program including historical markers, maps, and brochures identifying ahupua'a and significant historical sites that are appropriate for public interpretation.	Program	2	2018-2023	OED	25	County
Heritage Resources	3.2.10	Coordinate with kūpuna knowledgeable in north shore protocol to hold community meetings to educate people about	Project	2	2018-2023	Mayor's Office (Environmental	N/A	N/A

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		the history and cultural significance of Wailau and Pelekunu and to encourage pono cultural practices while on the north shore.				Coordinator)		
Heritage Resources	3.2.11	Encourage the Governor to appoint members to the Moloka'i Burial Council so that regular hearings by this body may resume.	Project	1	2018-2023	PD	N/A	N/A
Heritage Resources	3.2.12	Promote Moloka'i cultural events that do not have an adverse effect on natural resources. Develop Moloka'i cultural event and tourism guidelines that protect island culture and natural resources.	Program	2	2018-2023	OED	N/A	N/A
Heritage Resources	3.2.13	Provide educational training to applicable County agencies on the role that the County permit process plays in historic preservation.	Program	2	On-going	PD	N/A	N/A
Heritage Resources	3.2.14	Educate property owners regarding the need to prevent damage to, or destruction of, historic and cultural sites.	Program	1	On-going	PD	N/A	N/A
Heritage Resources	3.3.01	Develop BMPs for land and development uses to protect identified priority view corridors or viewsheds.	Project	2	2018-2023	PD	TBD	County
Heritage Resources	3.3.02	Complete the visual inventory, analysis, and mapping of key scenic view corridors, ridgelines, and viewsheds.	Project	1	2018-2023	PD	TBD	County
Scenic Resources	3.3.02	Complete the visual inventory, analysis, and mapping of key	Project	1	2018-2023	PD	TBD	County

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		scenic view corridors, ridgelines, and viewsheds.						
Scenic Resources	3.3.03	Develop and implement the Scenic Roadway Corridors Management Plan and Design Guidelines.	Project	2	2018-2023	PD	20	County
<b>Moloka`i Island Community Plan Implementation Actions</b>								
<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
Scenic Resources	3.3.04	Provide educational workshops for design consultants and developers on scenic resource BMPs.	Program	2	2018-2023	PD	N/A	N/A
Scenic Resources	3.3.05	Integrate scenic resource planning into natural and heritage resources strategies and plans.	Program	1	2018-2023	PD	N/A	N/A
<b>CHAPTER 4 HAZARDS</b>								
Hazards	4.01	Continue the development of Moloka`i Incident Command Post in coordination with County EMA.	Program	2	2018-2023	EMA	150	County, State
Hazards	4.02	Identify and submit flood and pre-disaster mitigation projects that qualify for funding under the FEMA Pre-Disaster Mitigation Program, Hazard Mitigation Assistance Program, NFIP Severe Repetitive Loss Program and other FEMA funded mitigation and NFIP grants consistent with the Maui County HMP.	Program	1	On-going	EMA	TBD	Federal

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Hazards	4.03	Develop programs and distribute materials for public outreach and education to better educate the community and visitors on disaster preparedness, hazard mitigation, multi-hazard risks and vulnerabilities, and post disaster recovery. Target materials and programs that will provide information on steps to take to protect lives and strengthen property against natural and human-related disasters.	Program	2	On-going	EMA	TBD	County, State, Federal
Hazards	4.04	Seek community information on possible hazardous waste sites buried decades ago; investigate and remediate if needed.	Program	1	2018 – 2023	DEM	TBD	County
Hazards	4.05	Identify critical infrastructure, lifelines, roads, and structures that are vulnerable to coastal hazards, including SLR, and develop a more coordinated emergency response system of well-defined and mapped evacuation routes.	Project	1	2018-2023	EMA	N/A	N/A
Hazards	4.06	Identify critical infrastructure, lifelines, roads, and structures that are vulnerable to wildfires and develop a more coordinated emergency response system of well-defined and mapped evacuation routes. Formalize existing practices on the use of heavy equipment during fires.	Project	1	2018-2023	MFD	10	County

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Hazards	4.07	Develop a wildfire information campaign and signage to build public awareness of wildfire hazards. Improve community awareness of the human, economic, and environmental costs associated with wildfires caused by negligence or accident. Engage the community in creating and maintaining fire breaks.	Program	2	2018-2023	MFD	15 annually	County
Hazards	4.08	Support wildfire mitigation activities, such as green belts around subdivisions and vegetation control around power poles that will minimize risk of wildfire susceptibility to properties and subdivisions.	Program	2	On-going	DPW	TBD	County
<b>Moloka'i Island Community Plan Implementation Actions</b>								
<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
Hazards	4.09	Complete an inventory of vulnerable critical facilities and infrastructure. Include this information in the Maui County HMP for future mitigation project funding.	Project	1	2018-2023	EMA	TBD	Federal, State
Hazards	4.10	Map SLR projections for specific geographic areas on Moloka'i, utilizing data from the NOAA Digital Coast SLR and Coastal Flooding Impacts Viewer. Map other climate-related coastal hazard areas.	Project	2	2018-2023	PD	20	County

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Hazards	4.11	Continue work with FEMA to update FIRMs that incorporate best available information on climate change and SLR.	Project	1	On-going	PD	N/A	N/A
Hazards	4.12	Implement additional CRS activities to improve class ratings and discounts on flood insurance premiums.	Project	2	On-going	PD	TBD	County
Hazards	4.13	Conduct erosion analysis of Moloka'i's shoreline to determine rate of erosion and use the results to determine setback calculations that also factor in incremental effects of SLR.	Project	1	2018-2023	PD	100	County
Hazards	4.14	Coordinate with Federal, State and County agencies to obtain current SLR information and maps. Plan phased relocation of critical structures and roadways. Plan long-term strategic retreat of buildings. Identify priority planning areas where resources and planning efforts should be focused. Identify how and where to use adaptation strategies such as retreat, accommodation, and protection.	Program	2	2022-2035	PD	1,000	County State Federal Private

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Hazards	4.15	Per the HMP, update the HAZUS MH model to incorporate detailed data on state and county bridges located in Moloka'i.	Project	1	2018-2023	EMA	50	County State Federal
Hazards	4.16	Support development of a cultural archive of the kūpunas' knowledge of traditional hazard mitigation practices.	Project	2	2018-2023	PD	TBD	County
Hazards	4.17	Evaluate, update, and prioritize shelters on Moloka'i.	Program	1	2018-2023	EMA	50	HMGP
Hazards	4.18	Immediately seek funding and develop an implementation plan to move critical infrastructure and emergency services out of flood and tsunami inundation zones.	Program	1	2018-2023	EMA	75	County
Hazards	4.19	Support the relocation of the Puko'o Fire Station on the East End.	Project	1	2022-2035	EMA	TBD	County

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<b>CHAPTER 5 ECONOMIC DEVELOPMENT</b>								
<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
Economic Development	5.01	Identify, target, and recruit new industries and businesses such as agricultural operations, aquaculture, cultural trades and arts, and information technology.	Program	1	2022-2035	OED	100	County
Economic Development	5.02	Continue to assess potential shipping options.	Project	2	2018-2023	OED	N/A	N/A
Economic Development	5.03	Continue to work with inter island airlines to keep airfares affordable and service frequency adequate to accommodate the needs of Moloka'i visitors, residents, and businesses.	Program	2	On-going	OED	N/A	N/A
<b>Moloka'i Island Community Plan Implementation Actions</b>								
<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>



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Economic Development	5.04	Develop a Moloka'i Agriculture Strategic Plan for all farms.	Project	1	2018-2023	OED	50	State
Economic Development	5.05	Continue to provide business courses to farm owners and agricultural entrepreneurs that include education about State and Federal loan and grant opportunities.	Program	2	On-going	OED	2,500	County
Economic Development	5.06	Encourage the development of cooperative agricultural development programs between the County and the DHHL to support diversified agricultural pursuits.	Program	2	2018-2023	OED	N/A	N/A
Economic Development	5.07	Create a survey of Moloka'i's population to determine the reasons for the high rate of "discouraged workers."	Project	2	2018-2023	OED	20,000	County
Economic Development	5.08	Continue and enhance educational opportunities for Moloka'i's students in areas such as STEM education, business management, leadership, agriculture, and vocational training.	Program	1	On-going	OED	10,000	County Private

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Economic Development	5.09	Assess how environmental impact, invasive species, feral ungulates, natural resources, and other factors will negatively or positively impact Moloka'i's present and future.	Project	2	On-going	OED	25	County State Private
Economic Development	5.10	Develop a permanent appropriate site for the farmer's market in Kaunakakai to promote locally grown fresh produce and products.	Project	2	2018-2023	OED	TBD	County
Economic Development	5.11	Identify economic opportunities for the use of targeted plant and animal species for value added products.	Project	1	2018-2023	OED	20	County Private
Economic Development	5.12	Assess which development regulations are going to discourage investors from making improvements on Moloka'i.	Project	1	2018-2023	OED	10	County Private
Economic Development	5.13	Explore the possibility to provide incentives to landowners to help bring MCC legacy issues into compliance for the purpose of maintaining affordable rental rates.	Project	1	2018-2023	PD	N/A	N/A

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Economic Development	5.14	Support workforce development efforts to help improve Moloka'i's economy.	Program	1	On-going	OED	N/A	N/A
Economic Development	5.15	Develop opportunities to get more local agricultural products into local markets.	Program	1	On-going	OED	N/A	N/A
<b>Moloka'i Island Community Plan Implementation Actions</b>								
<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
Economic Development	5.16	Support the traditional use of Hawaiian farming systems and the growth of traditional Hawaiian crops.	Program	1	On-going	OED	N/A	N/A
Economic Development	5.17	Support workforce development efforts targeted at sectors poised to revive Moloka'i's economy.	Program		On-going	OED	N/A	N/A

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CHAPTER 6 LAND USE AND HOUSING								
Land Use	6.1.01	Adopt a comprehensive zoning map for Moloka'i. Conduct a comprehensive review of interim zoned lands to identify and adopt zoning that is consistent with the Plan.	Project	1	2018-2023	PD	TBD	County
Land Use	6.1.02	Amend the zoning code to facilitate the development of mixed use, pedestrian oriented communities.	Project	1	2018-2023	PD	300	County
Land Use	6.1.03	Implement County responsibilities under Part III, Chapter 205, HRS, to designate and establish IAL and the incentives therein.	Program	2	2018-2023	PD	500	State
Land Use	6.1.04	Review the SMA boundary and make changes as necessary to comply with the objectives and policies defined in Section 205A-2, HRS, and incorporate best available information on Climate Change and SLR.	Project	1	2018-2023	PD	TBD	County

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Land Use	6.1.05	Research and review poor or highly sloped agricultural lands for conversion to different designations.	Project	2	2022-2035	PD	N/A	N/A
Land Use	6.1.06	Study viable options for transitioning Moloka'i's commercial and population center away from the threat of SLR and coastal inundation.	Project	1	2018-2023	PD	TBD	County State Federal
Land Use	6.1.07	Identify important subsistence use, lands, and resources.	Project	1	2022-2035	OED	TBD	County State
Land Use	6.1.08	Research and develop a climate change policy and adaptation plan to address rising sea levels and beachfront housing and development.	Project	1	2018-2023	PD	TBD	County State Federal
Land Use	6.1.09	Adopt a "Traditional Land Use" (TLU) Overlay into the Community Plan Designations. The County PD should look at existing Community Plan Designations and County Zoning in Mana'e and recommend zoning adjustments based on current land use suitability analysis methods, as				PD		`Aha Kiole o Moloka'i Moloka'i Communi ty

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		well as on the community recommendations included in the Mana`e GIS Mapping Project (COM, 2008) and the Traditional and Cultural Practices Report for Mana`e (OHA, 2016).						
Land Use	6.1.10	Research and conduct viable options to alleviate tax burdens on kuleana land owners, potentially by basing assessments on actual use rather than potential use value. Also, review Section 3.48.554, MCC, for possible amendments.				PD	<u>Aha Kiole o Moloka'i</u>	
Housing	6.2.01	Establish partnerships to develop and continue to implement a comprehensive affordable housing plan for Moloka'i that addresses both ownership and rental affordability.	Project	1	On-going	Housing & Human Concerns (DHHC)	N/A	N/A
Housing	6.2.02	Establish partnerships to support and implement a housing rehabilitation program including loans, grants, technical assistance and community outreach.	Program	1	On-going	DHHC	N/A	N/A
Housing	6.2.03	Amend the zoning code to allow a greater variety of housing types to address affordability, including mixed use, mixed housing types, co-housing, prefabricated homes, and small lots.	Project	1	On-going	PD	Possibly with 6.1.02 (TBD)	

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Housing	6.2.04	Work with developers to support their efforts to provide assistance with securing/leveraging grants, new home buyer tax credits, low income housing tax credits, and other resources that support affordable housing, such as housing models that can be built affordably.	Program	1	On-going	DHHC	N/A	N/A
<b>Moloka'i Island Community Plan Implementation Actions</b>								
<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
Housing	6.2.05	Investigate whether a community land trust would consider operating on Moloka'i.	Project	2	2018-2023	DHHC	N/A	N/A
Housing	6.2.06	Establish a cap on TVRs and STRHs.	Project		2018-2023	PD	N/A	N/A
<b>CHAPTER 7 COMMUNITY DESIGN</b>								

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Community Design	7.01	Amend the 1993 <i>Design Guidelines For Country Town Business Districts Molokai-Hawaii</i> .	Project	1	2018-2023	PD	50	County
Community Design	7.02	Develop sub area development plans for Kaunakakai, Maunaloa, Kaluako'i, Kualapu'u / Ho'olehua, and the East End of Moloka'i.	Project	1	2018-2023	PD	TBD	County
Community Design	7.03	Develop a pedestrian linkage between Malama Park and Kaunakakai through streetscape improvements.	Project	2	2018-2023	PD	TBD	County
Community Design	7.04	Develop and adopt rural and small-town street design standards that are appropriate for Moloka'i and within Department of Public Works standards.	Project	2	DPW See Transmittal Letter "Agency Comments"	PD		
Community Design	7.05	Create a funding source or mechanism for small business owners to renovate businesses in the island's small towns.	Program	2	2018-2023	OED	50	County



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Community Design	7.06	Develop incentives to promote the use of sustainable green building and development practices.	Program	2	2022-2035	Mayor's Office (Environmental Coordinator)	TBD	County
Community Design	7.07	Develop practicable incentives for Moloka`i businesses and property owners to implement sub-area development plan projects purposed to preserve, maintain, and enhance buildings, structures, sites, viewpoints, pedestrian ways, and streets.	Program	2	2022-2035	PD	TBD	County
Community Design	7.08	Conduct a study to improve walkability in Kaunakakai.	Project	2	2018-2023	PD	20	County
Community Design	7.09	Review and update Chapter 16.26B, MCC, relating to indigenous architecture, as appropriate.	Project	2	2018-2023	PD	N/A	N/A
<b>Moloka`i Island Community Plan Implementation Actions</b>								
<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>

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Community Design	7.10	Investigate options to share the cost of BCT guideline requirements for infrastructure upgrades among all Kaunakakai businesses, such as an Assessment District, so that renovations are economically feasible.	Project	1	2018-2023	PD	N/A	N/A
<b>CHAPTER 8 INFRASTRUCTURE</b>								
Water	8.1.01	Support the development of a Moloka'i Water Use and Development Plan that is consistent with the goals, policies and implementation strategy of the Plan.	Project	1	2018-2023	DWS	200	County
Water	8.1.02	Implement recommendations from the 2013 Update of the Hawaii Water Reuse Survey and Report.	Project	2	On-going	DEM	N/A	County
Water	8.1.03	Promote water conservation programs.	Program	1	On-going	DWS	40 annually	County
Water	8.1.04	Develop, adopt, and implement a wellhead protection strategy and ordinance for County water distribution systems.	Program	1	2018-2023 On-going	DWS	50 adoption TBD implementation	County
Water	8.1.05	Reconvene the Moloka'i Water Working Group and encourage all water purveyors to work together to address future water demand, sustainability, quality, and supply issues.	Program	1	On-going	DWS	10 annually	County
Water	8.1.06	Explore the possibility of encouraging new developments with privately owned public water	Project	2		DWS See Transmitt		

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		systems to meet DWS engineering standards.				al Letter "Agency Comments"		
Water	8.1.07	Explore the possibility of DWS taking over Moloka'i Ranch water systems.	Project	2	On-going	DWS	TBD	Private County
Water	8.1.08	Encourage the acquisition of USGS stream gauges to be placed in Moloka'i's important streams.	Project	1	On-going	DWS	TBD	County Federal Private
Water	8.1.10	Continue to fund watershed partnership on Moloka'i.	Program	1	On-going	DWS	300 annually	County
Wastewater	8.2.01	Assess the feasibility of providing measures to protect the Kaunakakai WWTF against inundation threats or to relocate it out of the coastal floodplain.	Project	1	2022-2035	DEM	200	County
Wastewater	8.2.02	Conduct a wastewater reuse feasibility study that includes the identification of potential recycled water users, necessary wastewater facility upgrades, required infrastructure improvements, estimated costs, and funding sources.	Project	2	2018-2023	DEM	50	County
Wastewater	8.2.03	Explore options and necessary regulation changes to allow graywater reuse systems for irrigation and toilet flushing.	Project	2	2018-2023	DEM	N/A	N/A
<b>Moloka'i Island Community Plan Implementation Actions</b>								
<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
Wastewater	8.2.04	Update the Kaunakakai WWTF facilities plan.	Project	1	2022-2035	DEM	100	County
Stormwater Management	8.3.01	Develop a comprehensive stormwater management plan	Project	1	2022-2035	DPW	500	County

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		that emphasizes use of natural systems drainage where possible.						
Stormwater Management	8.3.04	Inspect, maintain, and if necessary, repair or install new stormwater drainage swales and culverts, and remove blockages from drains and channels.	Program	1	On-going	DPW	500 per year	County
Stormwater Management	8.3.05	Prepare a GIS database which inventories existing stormwater infrastructure.	Project	2	2022-2035	DPW	500	County
Stormwater Management	8.3.06	Evaluate older swales and drains for current functioning and restore, if needed. Add natural drainage storage and filtration to supplement existing system.	Project	2	2022-2035	DPW	TBD	County
Stormwater Management	8.3.07	Improve or restore historic wetlands that help to mitigate the impacts from stormwater drainage systems.	Program	2	2022-2035	DPW	TBD	County
Solid Waste	8.4.01	Expand waste diversion and recycling programs that include appliances, metals, plastic, glass, cardboards, green-waste, and other recyclable materials.	Program	2	On-going	DEM	TBD	County State
Solid Waste	8.4.02	Increase public outreach, education, and incentive programs that improve waste reduction, reuse, and recycling.	Program	2	On-going	DEM	TBD	County State
Solid Waste	8.4.03	Develop and install educational signage along the entry corridor heading to the County recycling site.	Project	2	2018-2023	DEM	TBD	County State
Solid Waste	8.4.04	Implement the ISWMP through programs that include improvements, and upgrades to the solid waste management	Program	2	On-going	DEM	TBD	County

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		system; execute the CIP budget as funds allow.						
Solid Waste	8.4.05	Conduct a survey to determine community preference for the County dump operating hours.	Project	2	2018-2023	DEM	N/A	N/A
Solid Waste	8.4.06	Expand the solid waste recycling center's operating hours as funding and budgets allow.	Project	1	2018-2023	DEM	TBD	County
Solid Waste	8.4.07	Explore the feasibility of placing more trash cans throughout the island.	Project	2	2018-2023	DEM	TBD	County
Solid Waste	8.4.08	Conduct a feasibility study to explore waste-to-energy solutions.	Project	2	On-going	DEM	TBD	County
<b>Moloka'i Island Community Plan Implementation Actions</b>								
<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
Solid Waste	8.4.09	Explore the feasibility of having more transfer stations located throughout Moloka'i.	Project	1	2018-2023	DEM	TBD	County
Solid Waste	8.4.10	Form a partnership with Moloka'i NGOs, State Agencies, and DHHL to remove and recycle junk cars from Moloka'i.	Program	1	On-going	DEM	TBD	County
Solid Waste	8.4.11	Conduct annual reviews of Solid Waste Division contracts to provide over-sight and enforcement.	Program	1	On-going	DEM	N/A	N/A
Solid Waster	8.4.12	Establish a "take it or leave it" station at the recycling center like those that exist on other islands.	Program	2	On-going	DEM	TBD	County
Transportation	8.5.01	Work with HDOT to ensure airport and air services meet the needs of Moloka'i's residents, visitors, and businesses.	Project	2	On-going	OED	N/A	N/A

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Transportation	8.5.02	Support continued air services between topside Moloka'i and Kalaupapa.	Project	2	2018-2023	OED	10	County
Transportation	8.5.03	Identify challenges and propose solutions to transporting Moloka'i agricultural products to Maui and Oahu markets.	Project	1	On-going	OED	N/A	N/A
Transportation	8.5.04	Advocate for increased barge and ferry service to and from Moloka'i.	Project	1	On-going	OED	N/A	N/A
Transportation	8.5.05	Identify harbor and airport improvements designed to further support the agricultural industry.	Project	2	2018-2023	OED	10	State
Transportation	8.5.06	Prepare a plan for an integrated multimodal transportation system with complete streets that serve automotive, public transit, bicycle, pedestrian, wheelchairs, and other land transportation modes.	Project	2	2018-2023	DPW	250	County State
Transportation	8.5.07	Develop and implement a trail, greenway, and open space access plan that utilizes old agriculture roads and trails where appropriate.	Project	2	2018-2023	PD	30	County
Transportation	8.5.08	Integrate a parking study with parking mitigation measures appropriate for Moloka'i into a Kaunakakai Revitalization and Beautification Plan. Explore the concept of centralized parking in Kaunakakai Town and utilize areas such as the former Molokai Electric Company's Kaunakakai Facility.	Project	1	2018-2023	PD	50	County

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Transportation	8.5.09	Evaluate existing MEO transportation services to identify possible improvements to routes and pick up and drop off locations and other supporting facilities.	Project	1	2018-2023	PD	N/A	N/A
Transportation	8.5.10	Support additional access routes located around Kaunakakai to facilitate access to and from town.	Project	1	2022-2035	DPW	TBD	County
Transportation	8.5.11	Explore the possibility of the County acquiring privately owned roads on Moloka`i.	Project	2	2018-2023	DPW	TBD	County
Transportation	8.5.12	Encourage a bikeshare program for Moloka`i.	Program	2	On-going	DPW	N/A	County
<b>Moloka`i Island Community Plan Implementation Actions</b>								
<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
Transportation	8.5.13	Encourage the continued practice of no-fee parking at the Moloka`i Airport.	Project	1	On-going	OED	N/A	N/A
Energy	8.6.01	Continue to participate in the Integrated Resources Planning Advisory Group and support efforts to develop a diversified energy strategy and smart grid for Moloka`i.	Project	1		Energy Office See Transmittal Letter "Agency Comments"		
Energy	8.6.02	Provide loan programs and tax incentives to encourage individuals and businesses to install renewable energy systems and to use energy saving devices.	Program	2		Energy Office See Transmittal Letter "Agency		

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						Comments "		
Energy	8.6.03	Develop an ordinance that would require all new County buildings and facilities to achieve specific energy efficiency standards, such as LEED certification.	Project	2	2022-2035	DPW	N/A	County
Energy	8.6.04	Encourage the use of electric vehicles powered by renewable energy.	Project	2		Energy Office See Transmittal Letter "Agency Comments"		
Telecommunications	8.7.01	Work with telecommunications providers to expand coverage and provide more reliable service throughout the island.	Program	1	On-going	OED	N/A	N/A
Telecommunications	8.7.02	Work with internet providers to expand high-speed internet service throughout the island.	Program	1	On-going	OED	N/A	N/A
Telecommunications	8.7.03	Provide high speed internet at all County meeting facilities.	Project	1	2018-2023	OED	150	County
Telecommunications	8.7.04	Encourage more provision of wireless "hotspots" in Moloka'i's country towns.	Program	1	2018-2023	OED	50	County Private
<b>CHAPTER 9 PUBLIC FACILITIES &amp; SERVICES</b>								
Parks & Recreation	9.1.01	Develop, adopt, and regularly update a parks and recreation master plan that incorporates public facilities, parks, other recreational opportunities and a financial component.	Project	1	2018-2023	PR	30	County



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Parks & Recreation	9.1.02	Amend development regulations to ensure the construction of adequate parking with pathways near public shoreline access points.	Project	1	2022-2035	PD	TBD	County
Parks & Recreation	9.1.03	Adopt a beach/mountain access dedication ordinance using Transfer Development Rights addressed in Chapter 46, HRS, to improve access along the shoreline and mountains.	Project	2	2022-2035	PD	TBD	County
Parks & Recreation	9.1.04	Develop a master plan that defines a unified vision for recreational public and private land in Kaunakakai, including a financial component.	Project	2	2018-2023	PR	80	County
<b>Moloka`i Island Community Plan Implementation Actions</b>								
<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
Parks & Recreation	9.1.05	Provide shade for One Ali`i Park's playground area.	Project	1	2018-2023	PR	30	County
Parks & Recreation	9.1.06	Explore land acquisition and development of park facilities at Kumimi Beach.	Project	2	2022-2035	PR	TBD	County State
Parks & Recreation	9.1.07	Explore State or County land acquisition and development of park facilities at Kapukauahi.	Project	2	2022-2035	PR	TBD	County State
Parks & Recreation	9.1.08	Work with County, State, and Federal agencies, and the community to resolve Malama Park issues.	Project	1	2018-2023	PR	N/A	N/A
Police	9.2.01	Coordinate with community organizations in their prevention and treatment efforts to reduce substance use and abuse.	Program	2	On-going	MPD	N/A	N/A

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Police	9.2.02	Continue working cooperatively with the Prosecuting Attorney and the Drug Enforcement Agency (DEA) to enforce substance abuse and drug trafficking and distribution laws.	Program	1	On-going	MPD	N/A	N/A
Police	9.2.04	Collaborate with community organizations and other appropriate groups to provide Moloka'i community and cultural sensitivity training for new recruits and transferred personnel.	Program	2	On-going	MPD	N/A	N/A
Police	9.2.05	Expand police presence in the East End and West Ends of Moloka'i.	Program	1	2022-2035	MPD	TBD	TBD
Police	9.2.06	Explore the possibility of collaborating with an animal rescue organization to establish an animal holding facility on Moloka'i.	Program	1	2018-2023	MPD	TBD	TBD
Police	9.2.07	Encourage the implementation of a Police Bicycle Patrol Program on Moloka'i.				MPD		
Fire & Public Safety	9.3.01	Develop an island wide fire risk and vulnerability assessment.	Project	1	2018-2023	MFD	30	CWPP Federal
Fire & Public Safety	9.3.02	Explore options for relocating Puko'o Fire Station to a location not vulnerable to flooding and tsunamis, and best meets the needs of East End residents.	Project	1	2018-2023	MFD	N/A	N/A
Fire & Public Safety	9.3.03	Support the staffing upgrade for the Puko'o Fire Station to meet the same national and Maui County minimum staffing levels as provided at the other fire stations in Maui County.	Project	1	2018-2021	MFD	380 annually	County

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Community Plan Chapter	Action No.	Description	Type	Priority	Timing	County Agency Lead	Est. Cost (\$1,000)	Funding Source(s)
		Evaluate the results of the "Standards of Coverage" report and address recommended fire service needs.						
Fire and Public Safety	9.3.04	Implement and maintain the "Centers for Public Safety Excellence" accreditation program.	Program	1	On-going	MFD	8	County
Fire and Public Safety	9.3.05	Support the implementation of the accreditation program by creating one full-time position. Level of effort for Moloka`i would be 15 percent.	Program	1	On-going	MFD	20	County
Fire and Public Safety	9.3.06	Complete premises identification addressing for all occupied properties and properties with structures on Moloka`i.	Program	1	2018-2023	DPW	TBD	County
Fire and Public Safety	9.3.07	Encourage enforcement and incentives for the effective posting of addresses on applicable Moloka`i premises per County Code and public safety recommendations.	Program	1	On-going	DPW	TBD	County
Education	9.4.01	Assist with accreditation of pre-school and child care center providers via professional services.	Program	2	On-going	DHHC	TBD	County
Education	9.4.02	Continue workforce development programs and internships.	Program	1	On-going	OED	N/A	N/A
Education	9.4.03	Provide training for job preparedness, such as proper	Program	1	On-going	OED	N/A	N/A

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		work ethic, responsibility, resume writing, and interviewing.						
Education	9.4.04	Continue to assess and provide recommendations and funding to eliminate achievement gaps in education for Native Hawaiian students.	Program	2	On-going	OED	N/A	N/A
Health & Social Services	9.5.01	Conduct community needs surveys and allocate funding to expand the number and variety of social services.	Project	2	On-going	DHHC	N/A	N/A
Health & Social Services	9.5.02	Coordinate with transportation and recreation planners to increase bikeways and pedestrian opportunities for exercise.	Project	2	On-going	PR	N/A	N/A
Health & Social Services	9.5.03	Continue to provide social services for immigrants, early childhood, aging, and seniors.	Program	2	On-going	DHHC	200	Federal
Health & Social Services	9.5.04	Support and fund alcohol and substance abuse, domestic violence, sex assault, mental health, and families in crisis services, programs, and treatment centers.	Project	1	On-going	DHHC	60	County
Health & Social Services	9.5.05	Form partnerships and provide assistance to develop a plan for establishing long-term and short-term supportive housing, palliative care and hospice facilities.	Project	1	2018-2023	DHHC	N/A	N/A
Cemeteries	9.6.01	Complete a site selection study to identify a location for a new cemetery.	Project	1	2018-2023	DPW	100	County
Cemeteries	9.6.02	Work with the community to develop a map of grave sites at the Ualapue Cemetery.	Project	1	2018-2023	OED	TBD	Private County
<b>Moloka'i Island Community Plan Implementation Actions</b>								

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<b>Community Plan Chapter</b>	<b>Action No.</b>	<b>Description</b>	<b>Type</b>	<b>Priority</b>	<b>Timing</b>	<b>County Agency Lead</b>	<b>Est. Cost (\$1,000)</b>	<b>Funding Source(s)</b>
Governance	9.7.01	Continue to improve, promote, and publicize the availability of telecommunications and video conferencing for county services and for participation in County Council, and all board and commission meetings held on Maui.	Program	1	On-going	Mayor's Office	N/A	N/A
Governance	9.7.02	Provide the MoPC with the Planning Director's annual status reports as described in Chapter 2.80B, MCC.	Project	1	On-going	PD	N/A	N/A
Governance	9.7.03	Conduct regularly scheduled public information meetings on island.	Program	1	2018-2023	Mayor's Office	N/A	N/A
Governance	9.7.04	Ensure that a minimum of one Moloka`i resident is a member of each board and commission per MCC 2041.080 is fulfilled.	Program	1	2018-2023	Mayor's Office	N/A	N/A
Governance	9.7.05	Continue to support Maui County Community television on Moloka`i.	Program	1	2018-2023	Mayor's Office	N/A	N/A
Governance	9.7.06	Provide training to the MoPC on all applicable laws providing the legal framework agencies must follow when engaging in decision making actions that may impact Native Hawaiian traditional and customary practices. Fulfill new requirement for a Native Hawaiian Cultural Expert on the Moloka`i Planning Commission.	Program	2	On-going	PD	N/A	N/A

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Governance	9.7.07	Provide training to the MoPC on all applicable laws providing the legal framework agencies must follow when engaging in decision making actions that may impact Native Hawaiian traditional and customary practices. Fulfill new requirement for a Native Hawaii Cultural expert on MoPC.	Program		On-going	PD	N/A	N/A
<b>CHAPTER 10 EAST END POLICY STATEMENT</b>								
East End Policy Statement	10.1.01	Adopt recommendations made in the Mana'e GIS Mapping Project (2008) and intended for integration as policy and action items within the body of the Moloka'i Community Plan, where appropriate.		1		PD		
East End Policy Statement	10.2.01	Support the nomination of sites to the State and National Registers of Historic Places, including re-nominating all sites that were dropped from the State Register of Historic Places in 1979.		2		PD		
East End Policy Statement	10.2.02	Ensure that traditional and culturally significant lands are conserved, preserved, and protected by supporting designations to protect and preserve traditional lands under the DLNR conservation regulations, through County zoning, or other appropriate methods, including the creation		1		PD		

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		of a Traditional Land Use Overlay.						
East End Policy Statement	10.2.03	Review land use policies for all coastal areas, wetlands, and systems engineered for kalo cultivation to preserve those lands to their cultural and environmental purpose.		1				
East End Policy Statement	10.2.04	Appropriate access to the grove at Kukui O Lanikaula.		1		PD		
East End Policy Statement	10.3.01	Coordinate with the various State, private, and County agencies into a meaningful attempt to develop an economic strategy for Mana'e.		2		OED		
East End Policy Statement	10.3.02	Support cottage industry laws that foster family-based businesses.		2		OED		
East End Policy Statement	10.3.03	Support community-based agriculture and aquaculture entrepreneurial endeavors.		1		OED		
East End Policy Statement	10.4.01	Encourage residents to explore existing kalo and kuleana land tax relief options.		1		Finance RPT Council		
East End Policy Statement	10.5.01	Encourage the State to establish a medical/dental/health service installation on the East End.		1		DHHC		

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East End Policy Statement	10.5.02	Encourage the State to explore the feasibility of a library and cultural center in Mana'e at an appropriate location.		2		OED		
East End Policy Statement	10.5.03	Support the installation and maintenance of hunting and conservation cabins on the mountain along each ahupua`a or cluster of several ahupua`a.		2		DWS		
<b>CHAPTER 11 WEST END POLICY STATEMENT</b>								
West End Policy Statement	11.1.01	Clear litter and supply adequate rubbish bins at County beach access points. Create and post clear signage about the detrimental effects of leaving rubbish, such as plastic bags and other litter, near the coastline.		2		PR		
West End Policy Statement	11.1.02	Provide educational opportunities regarding protection of mauka lands, coastal lands, dunes, and native species for residents and visitors.						
West End Policy Statement	11.2.01	Nominate important sites to the State Register of Historic Places.		1		PD		
West End Policy Statement	11.2.02	Fund additional cultural and traditional land preservation and enhancement programs on the West End.		2		OED		
West End Policy Statement	11.2.03	Support designations to protect and preserve traditional and culturally significant lands under the DLNR conservation		1		PD Council		



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		regulations, during the County zoning process, or other appropriate methods, including the creation of a Traditional Land Use Overlay.						
West End Policy Statement	11.3.01	Coordinate with the various State, private, and County agencies to develop a strategic economic plan for the West End.		2		OED		
West End Policy Statement	11.3.02	Incentivize community-based entrepreneurial endeavors through funding, as available, and education for the West End business community.		2		OED		
West End Policy Statement	11.4.01	Explore appropriate action to limit the height of new buildings on the West End to a maximum of thirty-five feet.		2		PD		
West End Policy Statement	11.4.02	Require large-scale commercial developers to conduct a social impact assessment for any proposed development, identifying potential impacts on the community and proposed mitigative measures.		1		PD		
West End Policy Statement	11.4.03	Survey of wildlife on Moloka'i should be continued into the West End area with documentation of traditional lands.		2				
West End Policy Statement	11.4.04	Establish a community-supported cap on TVRs and STRHs for the West End.		1		PD		

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West End Policy Statement	11.5.01	Create access through Kulawai Loop from Kapukahelu beach to Maunaloa for emergency evacuation use.		1		EMA DPW		
West End Policy Statement	11.5.02	Explore the feasibility of the County taking over the water system for the West End.		1		DWS		
West End Policy Statement	11.5.03	Explore the feasibility of the County taking over the maintenance of the roads on the West End.		2		DPW		

## Appendix 1.1 Moloka`i History Summary

There were two initial land divisions on the island of Moloka`i, the *Ko`olau* and the *Kona* Districts. In 1859, the Hawaiian Government combined the districts as it determined that one district would be more efficiently administered than two. This was done because the population of the island had dropped to 2,864 and increasing numbers of people were beginning to migrate from the windward valleys on the north side of the island to the more accessible leeward coastal regions. Then in 1909, a political division of the island was made to incorporate Moloka`i as one of the districts in the newly formed Maui County, where it remains today. The Kalaupāpā Settlement was administratively separated and became known as Kalawao County, managed by the State Department of Health (DOH).

Throughout its history, the island has been characterized by its rural, agricultural base, first established by the early *kanaka maoli*. Moloka`i's strong sense of traditional, culturally significant history is represented by its many ancient Hawaiian sites, as well as by the impressive ruins of Kalua`aha Church, built in 1844, representing the establishment of the first Missionary station in 1832 and Father Damien's St. Joseph's Church at Wawaia.

One of the earliest settlement dates for Hawai`i, 500-600 A.D., established by carbon-14 testing, was found on the Halawa Valley shoreline along the windward coast of the island of Moloka`i. These deep valleys with their perennial streams, separated one from another by sheer *pali* plunging vertically into the sea, were developed into terraces for intensive taro cultivation. Today, the stone evidence of these extensive irrigation systems, terracing, *heiau*, *ko`a* (fishing shrines), and habitation sites are found in the now largely deserted valleys.

The more forgiving lush, green southeastern portion of this land is thought to have been the home of most early Hawaiians. *Lo`i Kalo* (ponged terraces) were found in every wet valley and ringed the shoreline sides of the numerous stone-walled fishponds stretching almost uninterrupted from Honolewai to Waikāne and beyond. *Mauka* of the ponds, *`uala* (sweet potato) and *wauke* (paper mulberry) plants were cultivated between long shallow terraces, which swept across the lower *kula* slopes. There are 136 recorded *heiau* on the island and of these, 36 are found from Kamalo`o mana`e to Honoulimalo`o, including `Ili`ili`opae *heiau* at Mapulehu, the largest on the island and thought to be the oldest.

At the time of western contact in 1778, the estimated population figure for Moloka`i was 10,500. In 1850, a Hawaiian government census estimated that the island population was 3,540. By 1910, this figure had fallen to 1,006, not including the patients at the Kalaupāpā Settlement.

Although not officially in the planning area being considered, Kalawao played a significant and important part in the history of Moloka`i. During the early 1800's, the Kalawao peninsula on the windward coast held a small thriving community of Hawaiians. Partially due to its strategic location between the deepest valleys and the summer fishing grounds to the west, it served as a

center of the Ko`olau District's activities. Its isolated location was chosen in 1865 by Kamehameha V to serve as the area set aside for those unfortunate victims of leprosy, or Hansen's disease. The Hawaiian residents were relocated and given land either at Kainalu on the east end of Moloka`i or on one of the other Hawaiian Islands. The *pali* trails became the life-lines for food and supplies to the settlement, greatly increasing the need for reliable trails and a cart road from the *pali* to the harbor at Kaunakakai. Access was strictly controlled, and the area was virtually cut off from the rest of the population of the island. There were around 700 patients when Father Damien arrived in 1873 to spend the rest of his life caring for the sick of the peninsula. Moloka`i residents were often employed by the DOH, which administered the Settlement, to keep the trails and road passable. It was during this period that Moloka`i became known as the Lonely Isle, and in 1909, the area was officially separated from Moloka`i as Kalawao County.

In 1859, Kamehameha IV had established a sheep ranch on the west end at Kaluako`i, which his brother Kamehameha V expanded by acquiring additional lands augmented by other types of livestock. This was the founding of Moloka`i Ranch, later purchased in 1897 by a group of Honolulu businessmen when it became known as the American Sugar Company. The sugar enterprise did not last long as their wells, with the sustained pumping required, produced saline water, which soon killed the cane in the fields. The ranch again reverted to a livestock venture.

Various diversified agricultural enterprises had been established during the 1870's, among them three small-scale sugar plantations and mills at Kala`e, Moanui and Kamalo`o. These operations had all shut down by 1900. One of the few remaining significant historical sites on the island is the restored 1878 R. W. Meyer Sugar Mill at Kala`e.

Puko`o was the first town in the western sense and the first County seat with a court house, lock-up, wharf, and several small stores. As Moloka`i developed into a limited market-oriented economy surrounding the plantation and ranching activities to the west, a gradual population shift began to occur, and in 1925 the County business center was moved to `Ualapu`e, where a new hospital had opened. Changes were taking place so rapidly, that only ten years later Kaunakakai had assumed the role of major commercial and political center of the island, and the physical facilities were again transferred westward.

Usually, islands were dependent on their surrounding waters for the transportation of goods and people; however, considering the long, narrow configuration of Moloka`i, it would seem probable that trails became a more practical and convenient means of travel from north to south, windward to kona. These trails were gradually turned to horse paths, later widened to accommodate animal drawn cars, wagons or buggies, and eventually when trucks and the automobile were introduced to Moloka`i, they became western-style roads. This new mode of transportation required not only better roads, but supplies of oil and gasoline for fuel.

As larger ships with deep drafts came to the islands, they required wider openings in the reefs and deeper, well-protected waters for anchorage. On Moloka`i, the harbors were shallow and vulnerable to shifts in the gusty winds. Ships not able to negotiate the reef were forced to anchor

in deeper water or tie up to the government installed buoys. Canoes or whaleboats transported passengers and goods to shore, to be met by ox-carts driven over the shoals or to be later deposited on one of the small wharves. The cattle were forced into the water to swim to the waiting ships and lifted by sling onto the decks.

Contributing to the modernization of transportation on Moloka`i, several wharves were constructed during the early 1880s at Kaunakakai, Puko`o, Kamalo`o, Kalaupāpā and Pelekunu. Of the five original wharves, only Kamalo`o wharf barely survives today and is gradually breaking up. The stones of old Kaunakakai wharf are under water approximately 100 yards west of the present wharf, built in 1899.

In the early 1900's, inter-island steamers began carrying freight, produce and passengers to and from Moloka`i, an increasingly vital link for the economic well-being of the island. The Kaunakakai wharf has been improved and lengthened several times over the years. The harbor has been dredged and cleared of obstructions and the opening in the reef widened to accommodate the larger barges of Young Brothers and slips for fishing and pleasure boats.

Passenger travel by ship became less popular with the opening of Ho`olehua airport in 1928, and in 1929, the Inter-Island Airways inaugurated their first regular air service to Moloka`i's new airport, providing a fast, reliable link with other islands.

The island's population began to increase dramatically in the early 1920s, and by 1930, there were 4,427 people on the island; an increase of 3,421 in ten years. The first change occurred when the Government passed the Hawaiian Homes Act in 1921, resulting in the settlement of Kalama`ulna, Hoolehua, Pala`au and Kapa`kea. The establishment of two pineapple plantations, Libby, McNeill and Libby (later Dole Pineapple) at Maunaloa in 1923, and California Packing Corporation (Del Monte) in 1927 at Kualapu`u, further encouraged the gradual population shift west from the more populated eastern areas of the island. These plantations both closed during the 1970s and 1980s, leaving the island again dependent on diversified agriculture, primarily vegetable farming and cattle ranching. In the late 1970s, resort development at the west end of the island at Kaluakoi became an influence on the islands economy. The population increased during this period to 6,049. The population peaked in 2000 at 7,404 and then declined to 7,255 over the next decade due to closure of the Kaluako`i Hotel and shuttering of Moloka`i Ranch operations. During the same period, biotech seed companies began operations on Moloka`i.

The character of the island of Moloka`i remains a truly *mokupuni kua`aina* (country island) both culturally and geographically, and it is this character that distinguishes it from other islands and makes Moloka`i *Moloka`i*.

## Appendix 1.2 Background Studies for Community Plans

The following list of technical studies was used in the development of the Moloka'i Island Community Plan. The public facilities and infrastructure assessments, and the socio-economic forecast were conducted for the County of Maui General Plan. The economic development and housing issue papers, and the land use forecast were conducted specifically for this community plan update.

- The *Final Public Facilities Assessment Update County of Maui* (March 2007) identifies public facilities and services' (e.g., schools, parks, police and fire protection, hospital, and solid waste disposal services) issues and opportunities in high-growth community plan regions.
- The *County of Maui Infrastructure Assessment Update* (May 2003) identifies infrastructure (e.g., roadways, drainage, water, wastewater, telephone, and electrical systems) issues and opportunities in the community plan regions.
- The *Moloka'i Economic Development Issue Paper: A Discussion Paper for the Department of Planning Community Plan Update* (December 2010 and 2015 Update) discusses current economic conditions and broad alternative economic futures.
- The *Moloka'i Housing Issue Paper, Draft: A Discussion Paper for the Moloka'i Community Plan Update* (December 2010) discusses current issues and projected future needs.
- The *Land Use Forecast, Island of Moloka'i, Maui County General Plan Technical Resource Study* (October 2013) estimates the amount of available land for urban uses and the likely demand for that land between 2010 and 2035.
- The *Socio-Economic Forecast, The Economic Projections for the Maui County General Plan 2030* (September 2014) projects residential, visitor, and employment growth, as well as housing demand. This planning tool is used to predict future growth scenarios for each community plan region.

## Appendix 1.3 Community Engagement

Before the CPAC process began, the County held several public workshops and conducted many interviews with Moloka`i residents during 2010-2011. The purpose of these activities was to hear directly from the people who lived on the island, to listen to their concerns, and to understand what their hopes are.

### **Open House Events: June – October 2010**

#### **June 2010**

The kick-off open house for the Moloka`i Island Community Plan was held on Saturday, June 26 from 10:00 AM to 2:00 PM at the Kaunakakai Elementary School cafeteria. More than 40 residents attended the open house, which was organized to solicit and record as many comments as people were willing to offer. Participants could visit five “stations” in the room. Some stations displayed information about Moloka`i while others asked visitors to write comments in response to specific questions.

#### **October 2010**

Two additional workshops were held in October 2010 to gather comments from Moloka`i residents on a variety of questions and issues. The workshop was organized by the Long Range Division (LRD) staff from the Maui County Department of Planning and its consultant team from Chris Hart and Partners (CHP). It was held from 9:00 AM to 1:00 PM at the Mitchell Pauole Center and about 60+ people participated in the workshop, based on the sign-in sheets and a visual count.

The workshop was designed with three sessions: 1) Vision and Core Values; 2) Issues and Opportunities; and 3) Goals and Strategies. Participants in small groups were asked to respond to specific questions on these three topics.

The methodology used for the third workshop differed from the second. Each group was given a specific topic area to discuss rather than each group covering all topic areas. This methodology was chosen due to the amount of material to be covered. The four topic areas consisted of 1) economic development; 2) heritage resources; 3) land use, development and housing; and 4) infrastructure and public services.

#### **November 2014**

An outdoor open house was held on Saturday, November 15 from 10:00 AM – 1:00 PM at Kaunakakai Elementary School. Because the last event was held several years prior, this open house was meant as a “refresher” of what had been expressed in the three previous community workshops.

**Interviews**

During 2010 and 2011, about 40 interviews with Moloka`i residents were conducted by the County's planning staff. The interviews typically took about an hour and people were asked what their thoughts were on the island's issues, opportunities, ideas for the future, and any other topics that were particularly relevant. Interviews were almost always held at a residence or office and included from one to three of the County's planners.



## Appendix 1.4 Important Framework – Native Hawaiian Traditional and Customary Practices

The following section provides an important framework that agencies are encouraged to follow when engaging in decision-making actions that may impact Native Hawaiian traditional and customary practices. Hawai'i Revised Statutes §1-1 guides agencies to look to Hawaiian judicial precedent, and custom and usage in making their decisions. Agencies are required to protect their kuleana rights of *hoa`āina* or *kuleana*.

### A. The 'Aha Kiolo: The People's Councils and The Eight Realms of Decision Making

According to Kumu John Ka'imikaua, the purpose of the 'aha councils was to utilize the expertise of those with 'ike (knowledge) to *mālama`āina*, to care for the natural resources, and to produce food in abundance not just for the people, but for successive generations. 'Aha council leadership was determined by the people who collectively understood who the experts were in their community.<sup>103</sup>

When you look at Hawaiian custom and usage, the ancient traditions of which Moloka`i's 'āina *momona* was based upon are the eight realms of decision making from the ancient 'aha councils. Historically, the 'aha councils of Moloka`i considered the following eight realms before making their decisions:

1. ***Moana-Nui-Ākea*** – the farthest out to sea or along the ocean's horizon one could perceive from atop the highest vantage point in one's area.
2. ***Kahakai Pepeiao*** – where the high tide is to where the lepo (soil) starts. This is typically the splash zone where crab, limu (seaweed), and 'opihi (limpet) may be located; sea cliffs; or a gentle shoreline dotted with a coastal strand of vegetation; sands where turtles and seabirds nest; or extensive sand dune environs.
3. ***Ma Uka*** – from the point where the lepo (soil) starts to the top of the mountain.
4. ***Nā Muliwai*** – all the sources of fresh water, ground/artesian water, rivers, streams, and springs, including springs along the coastline that mix with seawater.
5. ***Ka Lewalani*** – everything above the land, the air, the sky, the clouds, the birds, and the rainbows.
6. ***Kanaka Hōnua*** – the natural resources important to sustain people. However, management is based on providing for the benefit of the resources themselves rather than from the standpoint of how they serve people.
7. ***Papahelōlona*** – knowledge and intellect that is a valuable resource to be respected, maintained, and managed properly. This is the knowledge of the kahuna, the astronomers, the healers, and other carriers of 'ike.

<sup>103</sup> Malia Akutagawa, Shaelene Kamaka'ala, Harmonee Williams, et al., OFFICE OF HAWAIIAN AFFAIRS, TRADITIONAL & CUSTOMARY PRACTICES REPORT FOR MANA'E, MOLOKA'I, 47 (2016).

8. ***Ke 'Ihi'ihī*** – elements that maintain the sanctity or sacredness of certain places.<sup>104</sup>

This ancient decision-making matrix honors our ancestral past and wisdom, by looking to the needs of the present and ensuring that our decisions provide for abundance for future generations yet unborn. Any proposed amendments to the Moloka'i Island Community Plan should be analyzed according to the impacts of these eight realms and the decision-making matrix should be applied because these are customary laws from ancient times, which were codified by the Kingdom, and adopted by the State of Hawai'i. These laws are inherent rights of Native Hawaiians to self-determination and sovereignty.

Additionally, international law recognizes the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), which President Obama signed into law in 2010. Since then, various Federal advisory councils that serve as advisory bodies to Federal agencies, have provided guidelines to implement UNDRIP and to implement provisions for free, prior, and informed consent of native peoples. As such, we encourage the adoption of the UNDRIP and its underlying principles as a mandate that the State and County government must adhere to in making land-use decisions in collaboration with native individuals and communities on Moloka'i.

There are certain vested rights of Native Hawaiian ahupua'a tenants (hoā'āina) that have their origins in the ancient land tenure system. This customary law was codified by the Hawaiian Kingdom and later adopted by the State of Hawai'i. The State has reaffirmed these rights in its Constitution and statutes. A unique body of jurisprudence has developed around these laws, which reflect a heightened obligation by the State and its political subdivisions to reasonably protect traditional and customary Native Hawaiian rights on both public and private lands.<sup>105</sup>

The native people of Mana'e and Moloka'i continue to strongly identify with their cultural practices and their relationship to 'āina. For these reasons, this community plan reflects self-determination and the community's right to determine its own autonomy. As a people, the greater Hawaiian community is exploring different avenues to attain sovereignty. However, as the Mana'e and Moloka'i community engages with local government, international, Federal, State, and County laws need to be recognized and upheld.

## B. Sources of Native Hawaiian Rights Law

The Hawai'i State Constitution reaffirms these rights--particularly Hawaiian access rights--which are protected in one's ahupua'a of residence<sup>106</sup> or if shown to be customary, in other ahupua'a without the benefit of tenancy, if shown that this was the accepted custom and long-

<sup>104</sup> Interview with Dr. Kawika Winter, Director, Limahuli Garden and Pres., Hā'ena Makai Watch Coordinator, and former member of the late Kumu John Ka'imikaua's Halau Hula o Kukunaokalā in Honolulu, Haw. (Dec. 10, 2014).

<sup>105</sup> Akutagawa, Kamaka'ala, Williams, et al., TRADITIONAL & CUSTOMARY PRACTICES REPORT FOR MANA'E, *supra* note 4 at 58.

<sup>106</sup> FORMAN & SUSAN K. SERRANO, HO'OHANA AKU, A HO'OLA AKU HO'OLA AKU: A LEGAL PRIMER FOR TRADITIONAL AND CUSTOMARY RIGHTS IN HAWAI'I 9 (2012) [hereinafter FORMAN & SERRANO, HO'OHANA AKU, A HO'OLA AKU] (citing Kalipi, 66 Haw. at 9, 656 P.2d at 750).

standing practice.<sup>107</sup> All State and County agencies and decision-making bodies are obligated under the Hawai'i State Constitution and various statutes to ensure that these Hawaiian rights are not regulated out of existence. There are affirmative obligations to protect Hawaiian custom and usage, and the resources that Native Hawaiians depend upon.<sup>108</sup> State and County agencies must make an independent assessment regarding the impact that a proposed action may have on Native Hawaiian traditional and customary practices, and must consider the following three factors:

- (A) the identity and scope of valued cultural, historical, or natural resources in the petition area, including the extent to which traditional and customary native Hawaiian rights are exercised in the petition area;
- (B) the extent to which those resources—including traditional and customary native Hawaiian rights—will be affected or impaired by the proposed action; and
- (C) the feasible action, if any, to be taken ...by the [State and/or its political subdivisions] to reasonably protect native Hawaiian rights if they are found to exist.<sup>109</sup>

#### C. 'Ohana Values: The Foundations of Hawaiian Traditional and Customary Practices

Dr. Davianna Pōmaika'i McGregor interviewed many kama'āina informants residing in “cultural kīpuka” (rural areas that have maintained cultural understandings and practices)<sup>110</sup> who identified common 'ohana cultural values and customs for subsistence and mālama. It is the essence of these understandings that should be the standard by which to measure whether something is a customary practice or not.<sup>111</sup> According to Dr. McGregor, what distinguishes Hawaiian custom and practice is the honor and respect for traditional 'ohana cultural values and customs to guide subsistence harvesting of natural resources. Such 'ohana values and customs include, but are not limited to, the following:

- 1) Only take what is needed.
- 2) Don't waste natural resources.
- 3) Gather according to the life cycle of the resources. Allow the native resources to reproduce. Don't fish during their spawning seasons.
- 4) Alternate areas to gather, fish, and hunt. Don't keep going back to the same place. Allow the resource to replenish itself.
- 5) If an area has a declining resource, observe a kapu on harvesting until it comes back. Weed, replant, and water, if appropriate.
- 6) Resources are always abundant and accessible to those who possess the knowledge about their location and have the skill to obtain them. There is no need to overuse a more accessible area.

<sup>107</sup> *Pele Def. Fund v. Paty (Pele I)*, 73 Haw. 578, 620, 837 P.2d 1247, 1272 (1992). See FORMAN & SUSAN K. SERRANO, HO'OHANA AKU, A HO'OLA AKU, *supra* note 7, at 13 (citing *Pele I*, 73 Haw. at 620, 837 P.2d at 1272).

<sup>108</sup> *Ka Pa'akai O Ka 'Aina v. Land Use Comm'n*, 94 Hawai'i 31, 7 P.3d 1068, 1083 (2000).

<sup>109</sup> FORMAN & SUSAN K. SERRANO, HO'OHANA AKU, A HO'OLA AKU, *supra* note 7, at 17 (citing *Ka Pa'akai*).

<sup>110</sup> DAVIANNA POMAIIKA'I MCGREGOR, NA KUA'AINA: LIVING HAWAIIAN CULTURE, 21 (2007).

<sup>111</sup> Akutagawa, Kamaka'ala, Williams, et al., TRADITIONAL & CUSTOMARY PRACTICES REPORT FOR MANA'E, *supra* note 4 at 7-58.

7) Respect and protect the knowledge, which has been passed down inter-generationally, from one generation to the next. Do not carelessly give it away to outsiders.

8) Respect each other's areas. Families usually fish, hunt, and gather in the areas traditionally used by their ancestors. If they go into an area outside their own for some specific purpose, they usually go with people from that area.

9) Throughout the expedition, keep focused on the purpose and goal for which you set out to fish, hunt, or gather.

10) Be aware of the natural elements and stay alert to natural signs, e.g. falling boulders as a sign of flash flooding.

11) Share what is gathered with family and neighbors.

12) Take care of the kūpuna who passed on the knowledge and experience of what to do and are now too old to go out on their own.

13) Don't talk openly about plans for going out to subsistence hunt, gather, or fish.

14) Respect the resources. Respect the spirits of the land, forest, ocean. Don't get loud and boisterous.

15) Respect family `aumakua. Don't gather the resources sacred to them.<sup>112</sup>

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<sup>112</sup> DAVIANNA MCGREGOR, THE NATURE CONSERVANCY, CULTURAL ASSESSMENT FOR THE KAMAKOU PRESERVE, MAKAKUPA'IA AND KAWELA, ISLAND OF MOLOKA'I 16-17 (2006).

## Appendix 2.1 Definition of Sustainability in Hawai`i

### Definition of Sustainability from *Hawai`i 2050 Sustainability Plan (2008)*:

*A Hawai`i that achieves the following:*

- *Respects the culture, character, beauty, and history of our State's island communities*
- *Strikes a balance between economic, social and community, and environmental priorities*
- *Meets the needs of the present without compromising the ability of future generations to meet their own needs.*

The updates to the County of Maui's General Plan – which includes the Countywide Policy Plan, the Maui Island Plan, the Lana`i Community Plan, the Moloka`i Island Community Plan, the Kaho`olawe Community Plan, and the Community Plans on Maui Island – embrace this concept of sustainability, along with the guiding principles in the *Hawai`i 2050 Sustainability Plan*.

In 2011, the Hawai`i State legislature established sustainability as a State priority by incorporating the *Hawai`i 2050 Sustainability Plan* Guiding Principles of Sustainability into Chapter 226, the Hawai`i State Planning Act, of the Hawai`i Revised Statutes.

## Appendix 2.2 Sustainability (HRS §226-108)

### **HRS §226-108 Priority guidelines and principles to promote sustainability shall include:**

- 1) Encouraging balanced economic, social, community, and environmental priorities;
- 2) Encouraging planning that respects and promotes living within the natural resources and limits of the State;
- 3) Promoting a diversified and dynamic economy;
- 4) Encouraging respect for the host culture;
- 5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations;
- 6) Considering the principles of the ahupua`a; and
- 7) Emphasizing that everyone, including individuals, families, communities, businesses and government, has the responsibility for achieving a sustainable Hawai`i.

**Appendix 2.3 Climate Change Adaptation Priority Guidelines (HRS §226 - 109)**

**HRS §226-109 Climate change adaptation priority guidelines:**

Priority guidelines to prepare the State to address the impacts of climate change, including impacts to the areas of agriculture; conservation lands; coastal and nearshore marine areas; natural and cultural resources; education; energy; higher education; health, historic preservation; water resources; built environment, such as housing, recreation, transportation; and the economy shall:

- (1) Ensure that Hawai'i's people are educated, informed, and aware of the impacts climate change may have on their communities;
- (2) Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies;
- (3) Invest in continued monitoring and research of Hawai'i's climate and the impacts of climate change on the State;
- (4) Consider Native Hawaiian traditional knowledge and practices in planning for the impacts of climate change;
- (5) Encourage the preservation and restoration of natural landscape features, such as coral reefs, beaches and dunes, forests, streams, floodplains, and wetlands, that have the inherent capacity to avoid, minimize, or mitigate the impacts of climate change;
- (6) Explore adaptation strategies that moderate harm or exploit beneficial opportunities in response to actual or expected climate change impacts to the natural and built environments;
- (7) Promote sector resilience in areas such as water, roads, airports, and public health, by encouraging the identification of climate change threats, assessment of potential consequences, and evaluation of adaptation options;
- (8) Foster cross-jurisdictional collaboration between County, State, and Federal agencies and partnerships between government and private entities and other nongovernmental entities, including nonprofit entities;
- (9) Use management and implementation approaches that encourage the continual collection, evaluation, and integration of new information and strategies into new and existing practices, policies, and plans; and
- (10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.

**Appendix 3.1 Ecosystem Services**

Ecosystem Services is a term for the benefits that humans receive from natural resources and processes. These services are grouped into four categories as shown below. Many of these ecosystem services are essential to human life and are provided free of cost. Examples of ecosystem services are often used to illustrate the value of natural processes and resources, such as forest regulation of air quality. Calculation of financial values to replace ecosystem services ties economic benefit to environmental health. The categories below are from the Millennium Ecosystem Assessment<sup>113</sup>:

<p><b>Supporting Services</b></p> <ul style="list-style-type: none"> <li>▪ Nutrient cycling</li> <li>▪ Soil formation</li> <li>▪ Primary production</li> </ul>	<p><b>Provisioning Services</b></p> <ul style="list-style-type: none"> <li>▪ Food</li> <li>▪ Fiber</li> <li>▪ Genetic resources</li> <li>▪ Biochemicals, natural medicine, pharmaceuticals</li> <li>▪ Fresh water</li> </ul>
<p><b>Regulating Services</b></p> <ul style="list-style-type: none"> <li>▪ Air quality regulation</li> <li>▪ Climate regulation (global, regional, local)</li> <li>▪ Water regulation</li> <li>▪ Erosion regulation</li> <li>▪ Water purification and waste treatment</li> <li>▪ Disease regulation</li> <li>▪ Pest regulation</li> <li>▪ Pollination</li> <li>▪ Natural hazard regulation</li> </ul>	<p><b>Cultural Services</b></p> <ul style="list-style-type: none"> <li>▪ Cultural diversity</li> <li>▪ Spiritual and religious values</li> <li>▪ Knowledge systems</li> <li>▪ Education values</li> <li>▪ Inspiration</li> <li>▪ Aesthetic values</li> <li>▪ Social Relation</li> <li>▪ Sense of place</li> <li>▪ Cultural heritage values</li> <li>▪ Recreation and ecotourism</li> </ul>

<sup>113</sup> The Board of Millennium Ecosystem Assessment, (2003). *Ecosystems and Human Well-Being; A Framework for Assessment*, Island Press, Washington DC.

### Appendix 3.2 Moloka`i Archaeological Surveys

Relatively undeveloped by comparison to other islands, Moloka`i has an abundance of significant cultural and archaeological resources. Most of these cultural sites are stone structures that date back as far as 1,500 years. Hawai`i's second most sacred historic site, the kukui tree grove of the prophet and healer Lanikaula, is located on Moloka`i as one of the largest heiau (religious temples) in the State, `Ili`iliopae Heiau. Moloka`i is renowned in legend as the island where the goddess Laka established the hula, and as the place where the last remaining symbol of the ancient sorcerers' powers was fashioned by Kalaipahoa, a weapon carved from a deadly enchanted tree. These many sites are of great significance to anyone interested in Hawaiian history, and Moloka`i is one of the few places left in Hawai`i where such sites exist undisturbed.

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2001 House of the kama`aina: historical anthropology in a rural Hawaiian valley. Ph.D., University of California – Berkeley.

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Weisler, Marshall, and Patrick V. Kirch

1985 The structure of settlement space in a Polynesian chiefdom: Kawela, Molokai, Hawaiian Islands. New Zealand Journal of Archaeology. 7: 129-158.

Kawela – Weisler, Kirch

Kawakiu – Society for Hawaiian Archaeology

Mokio – Weisler

Kalawao – National Park Service

Manawai – Kawelu



### Appendix 3.3 Cultural Sites to be Protected

The island of Moloka'i was traditionally divided into five districts (moku). There are numerous important cultural sites located in each of these districts. The following are general descriptions of some of the most significant cultural resources in each moku:

#### Pala`au

Makahiki Grounds  
Rain Heiau  
Loko I`a

#### Kawela

Pu`u Honua  
House platforms  
Heiau  
Battleground  
Loko I`a  
`Ili`iliopae Heiau

#### Halawa

First human settlement  
Grove of Lanikaula  
House platforms  
Heiau

#### Kaluako`i

Ka`ana  
Hale mua  
Fishing ko`a

#### Ko`olau

National Park Service surveys

**Appendix 6.1 Comparison of Moloka`i Island Community Plan Land Use Designations and Typical County Zoning Districts**

In lieu of repeating the allowable land uses within the Moloka`i island community plan area, this appendix sets forth each community plan land use designation and identifies the zoning district or districts that would typically allow the uses envisioned by the community plan. If a land use designation does not have a typical matching or corresponding zoning district, a new zoning district(s) will be established in the Maui County Code.

Pursuant to Section 2.80B.030(B), MCC, if a property’s community plan land use designation and zoning do not correspond as listed in the table below, the property’s zoning regulates the uses and standards allowed on the property when only ministerial permits or approvals by government agencies are required. Discretionary actions by government agencies, such as a change in zoning, shall conform to the community plan; during the change in zoning process, the typical zoning districts listed below should be established to correspond with and implement the community plan.

<b>MOLOKA`I ISLAND COMMUNITY PLAN LAND USE DESIGNATIONS</b>	<b>STATE LAND USE DISTRICTS</b>	<b>USES ENVISIONED</b>	<b>TYPICAL COUNTY ZONING DISTRICTS</b>
Agriculture	Agricultural	Envisions agricultural uses and related and compatible uses.	Agricultural District
Airport	Urban	Envisions general and commercial aviation airport facilities and support services, and related and compatible uses.	Airport District

<b>MOLOKA'I ISLAND COMMUNITY PLAN LAND USE DESIGNATIONS</b>	<b>STATE LAND USE DISTRICTS</b>	<b>USES ENVISIONED</b>	<b>TYPICAL COUNTY ZONING DISTRICTS</b>
Business Commercial	Urban	Envisions retail stores, offices, entertainment enterprises, and other commercial services, and related and compatible uses.	B-1 Neighborhood Business District; B-2 Community Business District; B-3 Central Business District; B-R Resort Commercial District; B-CT Country Town Business District; and Service Business Residential (SBR) District
Heavy Industrial	Urban	Envisions major industrial operations with potentially noxious impacts from noise, airborne emissions, or liquid discharges. May also include light industrial and business commercial operations, and related and compatible uses.	M-2 Heavy Industrial District; and M-3 Restricted Industrial District
Hotel	Urban	Envisions transient accommodations and commercial uses predominantly intended to serve guests; includes hotels, condominiums, and apartments having more than two dwellings; single-family, duplex, and 'ohana dwellings;	H-1 Hotel District; H-M Hotel District; H-2 Hotel District; and Hotel District

MOLOKA'I ISLAND COMMUNITY PLAN LAND USE DESIGNATIONS	STATE LAND USE DISTRICTS	USES ENVISIONED	TYPICAL COUNTY ZONING DISTRICTS
		and related and compatible uses.	
Light Industrial	Urban	Envisions warehousing, light assembly, service, and similar industrial operations; also, may include business commercial operations, and related and compatible uses.	M-1 Light Industrial District
Multi-Family	Urban	Envisions apartments and condominiums having more than two dwellings; also includes single-family, duplex, and `ohana dwellings, and related and compatible uses.	Two-family (Duplex) District; A-1 Apartment District; and A-2 Apartment District
Open Space	Urban	Envisions areas that are inappropriate for intensive development because of environmental, physical, or scenic factors, including shoreline and	OS-1 (Passive) Open Space District; OS-2 (Active) Open Space District; and Urban Reserve District

MOLOKA'I ISLAND COMMUNITY PLAN LAND USE DESIGNATIONS	STATE LAND USE DISTRICTS	USES ENVISIONED	TYPICAL COUNTY ZONING DISTRICTS
		landscape buffer areas, drainageways, view planes, flood plains, and tsunami-inundation areas.	
Park	Urban	Envisions recreational uses, including public and private active and passive parks, and related and compatible uses.	General Park (PK) District; and Urban Reserve District
Park/Golf Course	Urban	Envisions golf courses and related and compatible uses.	Golf Course (GC) District
Project District	Urban	Envisions a variety of land uses and development standards that are unique to a particular project; specific uses are established by a project district zoning ordinance.	<i>Implementing the Project District designation requires uses and standards for a particular project district be established in the Comprehensive Zoning Ordinance. Additional project districts may be developed over time.</i>
Public/Quasi-Public	Urban	Envisions schools, libraries, fire and police stations, government buildings, public utilities, hospitals, churches, cemeteries, community centers, and related and compatible uses.	P-1 Public/Quasi-Public District; and P-2 Public/Quasi-Public District

<b>MOLOKA'I ISLAND COMMUNITY PLAN LAND USE DESIGNATIONS</b>	<b>STATE LAND USE DISTRICTS</b>	<b>USES ENVISIONED</b>	<b>TYPICAL COUNTY ZONING DISTRICTS</b>
Rural	Rural	Envisions small farms intermixed with low-density single-family dwellings, and related and compatible uses.	County Rural; RU-0.5 District; RU-1 District; RU-2 District; RU-5 District; and RU-10 District
Single-Family	Urban	Envisions single-family, duplex, and ʻohana dwellings, and related and compatible uses.	R-1 Residential District; R-2 Residential District; R-3 Residential District; R-0 Zero Lot Line Residential District; Two-family (Duplex) District; Service Business Residential (SBR) District; and Urban Reserve District
None	Conservation	Indicates lands designated Conservation District by the State Land Use Commission.	None

**Appendix 10.1 East End Boat Ramp Testimony**

<b>Oppose Boat Ramp</b>	<b>Neutral</b>	<b>Support Boat Ramp</b>
<ul style="list-style-type: none"> <li>• Increased threat of overfishing along Mana'e's reefs and waters. It would especially attract commercial fishermen from Maui since the trip between islands would be much shorter with a Mana'e boat ramp.</li> <li>• Increased traffic and exploitation of Mana'e's reefs and waters from off-island charter tour boats (especially from Maui).</li> <li>• Increased boat traffic from off-island and use of Mana'e reefs and beaches will destroy Mana'e rural character and status as a pu'uhonua (safe refuge)</li> <li>• A boat ramp will create a tourist trap on Moloka'i, similar to Maui and other islands.</li> </ul>	<ul style="list-style-type: none"> <li>• "Entire moku to be included in boat ramp decision."</li> <li>• "Share the ramp already existing in the gated area - like it was before."</li> <li>• "Kamalo is not a deep channel to the shore - flat bottoms launch there."</li> <li>• "We need to malama our fishing and boating community who take care of each other/community."</li> </ul>	<ul style="list-style-type: none"> <li>• "Tired drive my truck in da salt water for launch my boat."</li> <li>• "Let the locals launch at Puko'o. Membership fee? Rules?"</li> <li>• "Needed but, where, how, why? Need to set limits to accommodate Moloka'i residents."</li> <li>• With a boat ramp, the large Moloka'i boats can police and patrol the waters to discourage off-island boats from exploiting Mana'e fishery.</li> <li>• Everyone else is selfish to block Moloka'i commercial fishermen who benefit the community by feeding them with fish they sell.</li> </ul>
<ul style="list-style-type: none"> <li>• Associated improvements for a</li> </ul>	<ul style="list-style-type: none"> <li>Need to think outside the box. Consider</li> </ul>	<ul style="list-style-type: none"> <li>• Boat ramp and deep draft capacity</li> </ul>

<p>boat ramp and deep draft harbor may negatively alter the natural bathymetry through marine excavation; entail the dredging of precious reefs; fill and/or destroy historic fishponds, limu, crab, and fishing grounds; and desecrate underwater heiau (temples).</p> <ul style="list-style-type: none"> <li>• “No boat ramp. Not enough resources. Can’t have other people killing da grounds.”</li> <li>• “No boat ramp east Moloka‘i. Protect resources. No commercial.”</li> <li>• “No problem launching boats now. Kamalo best option for us.”</li> <li>• “NO BOAT RAMP EAST END.”</li> <li>• “Concerned about increased pressure and possible exploitation of ocean resources and increase in commercial activity.”</li> </ul>	<p>private boat ramp, rather than public so that there can be better control of what types of boaters may access private boat ramp.</p>	<p>needed to address safety concerns for entry and exit of big boats.</p> <ul style="list-style-type: none"> <li>• Boat ramp needed for emergency services, rescue, and retrieval operations.</li> </ul> <p>Just need a simple boat ramp to launch and safely return.</p>
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<ul style="list-style-type: none"> <li>• “NO RAMP EAST END”</li> <li>• “No Boat Ramp.”</li> <li>• “No. Unnecessary.”</li> <li>• “Boat ramp will cause over congestion of land and ocean traffic. NO parking to accommodate increased traffic resulting from boat ramp install.”</li> </ul>		
<ul style="list-style-type: none"> <li>• “Boat ramp is unnecessary. Invitation for unwanted amount of ocean recreation over fishing.”</li> <li>• “NO RAMP, NEVER!”</li> <li>• A fireman stated that no boat ramp is necessary for emergency rescue and retrieval operations. Their current boat and jet ski equipment is able to handle launching and returning to natural entry points that are already commonly used in Mana’e.</li> <li>• What is the definition of small-scale to those who want a boat ramp? Look at what happened to Hana,</li> </ul>		

<p>Maui. They wanted a small boat ramp, but after having to comply with multiple regulations ended up getting a big boat ramp that threatens to bring a lot of boat traffic in that sensitive, rural area with important fishing grounds for subsistence. We in Mana'e should be careful about the precedent we might set by asking for a boat ramp, even if we intend to have small-scale, it may be out of our hands in the end after having to meet required government specifications.</p> <ul style="list-style-type: none"> <li>• We need to be concerned about letting a "foot in the door" which threatens to bring not just one big boat, but more and more over time, and suddenly our rural lifestyle is changed forever.</li> </ul>		
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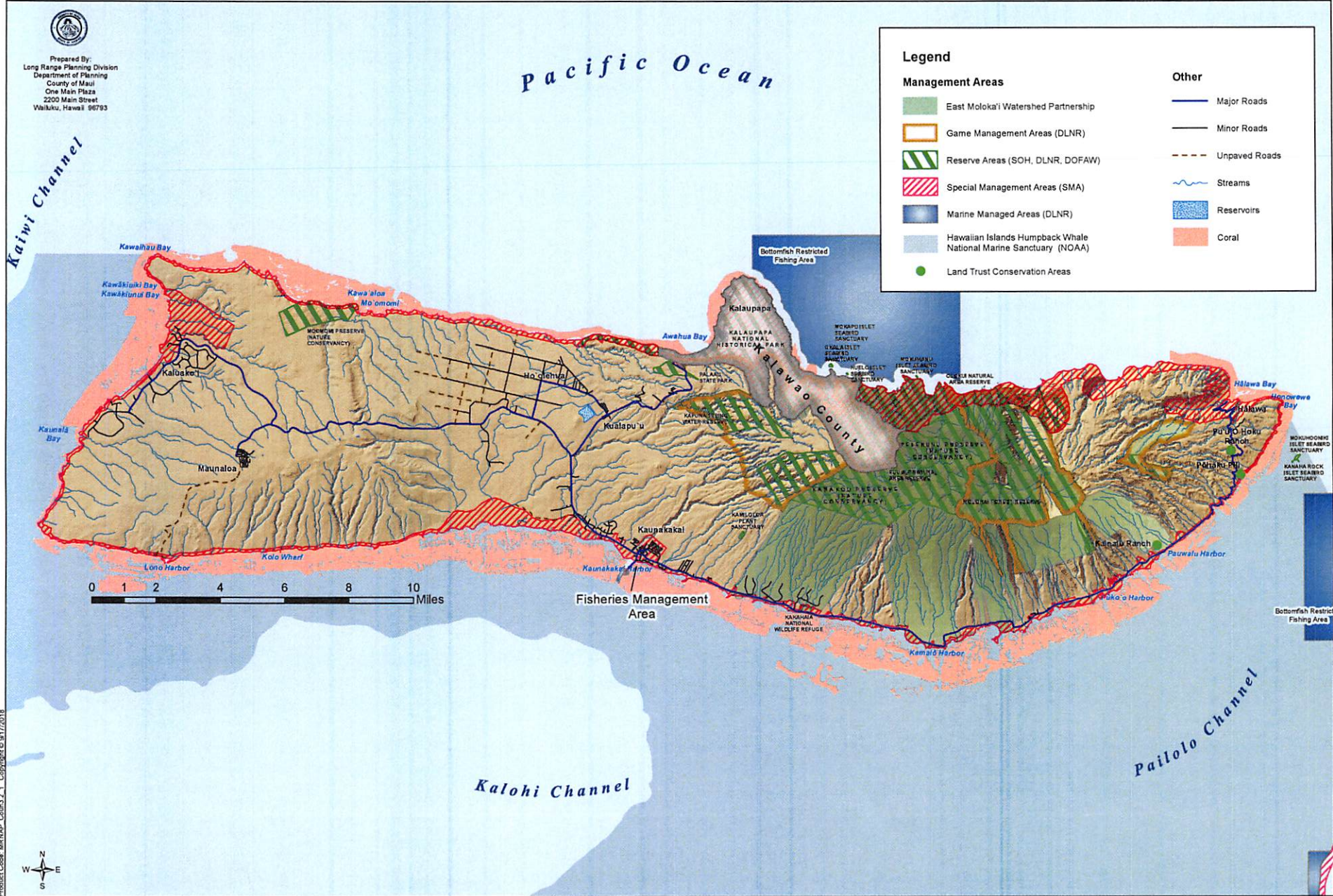


Legend	
<b>Important Natural Resources</b>	<b>Other</b>
Critical Habitat - Plant (USF&W)	Major Roads
Critical Habitat - Moth (USF&W)	Minor Roads
Forest and Plant Resources (Hawaii DBEDT)	Unpaved Roads
Wetlands - Nat'l Wetlands Inventory (USF&W)	Streams
	Reservoirs
	Coral

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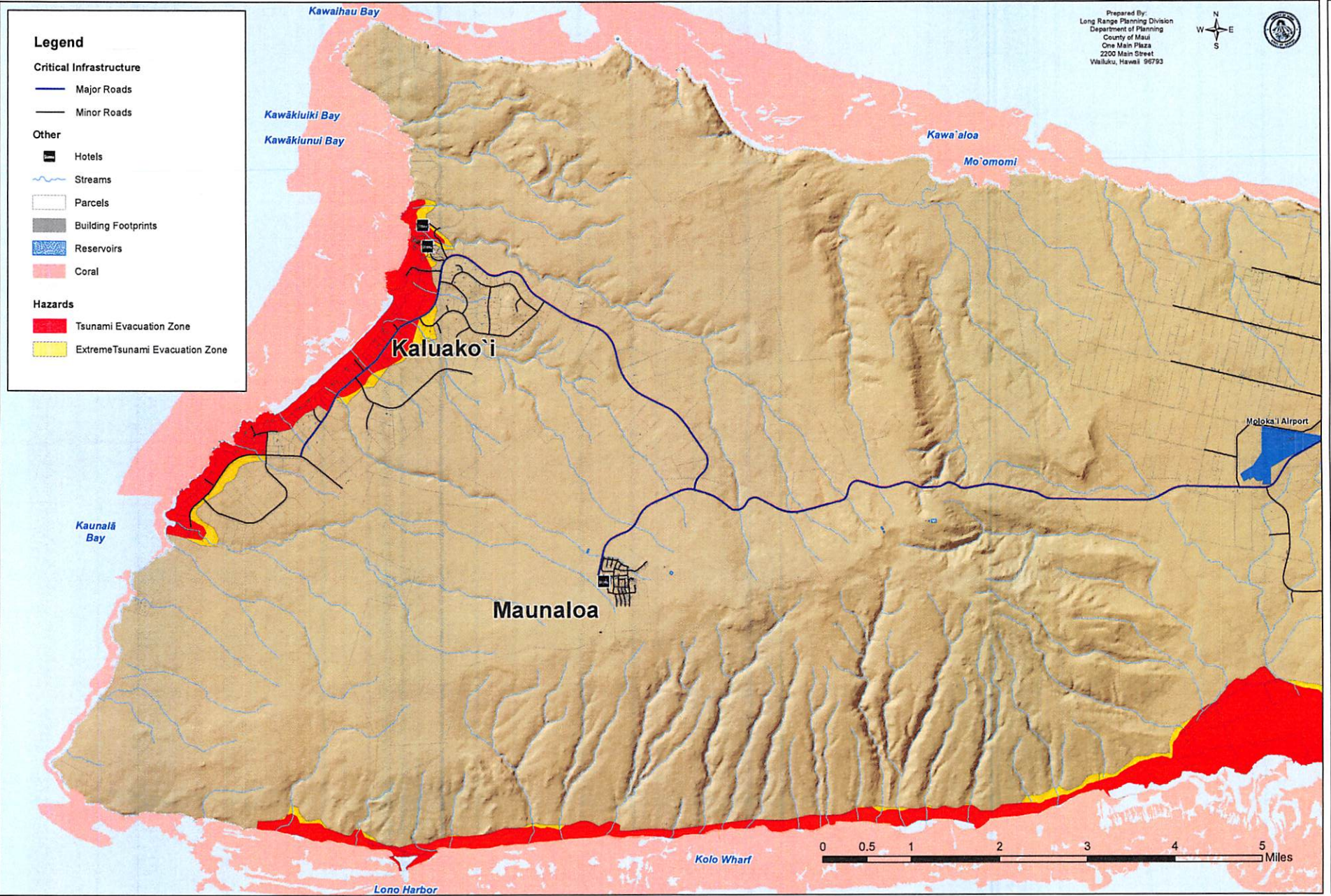


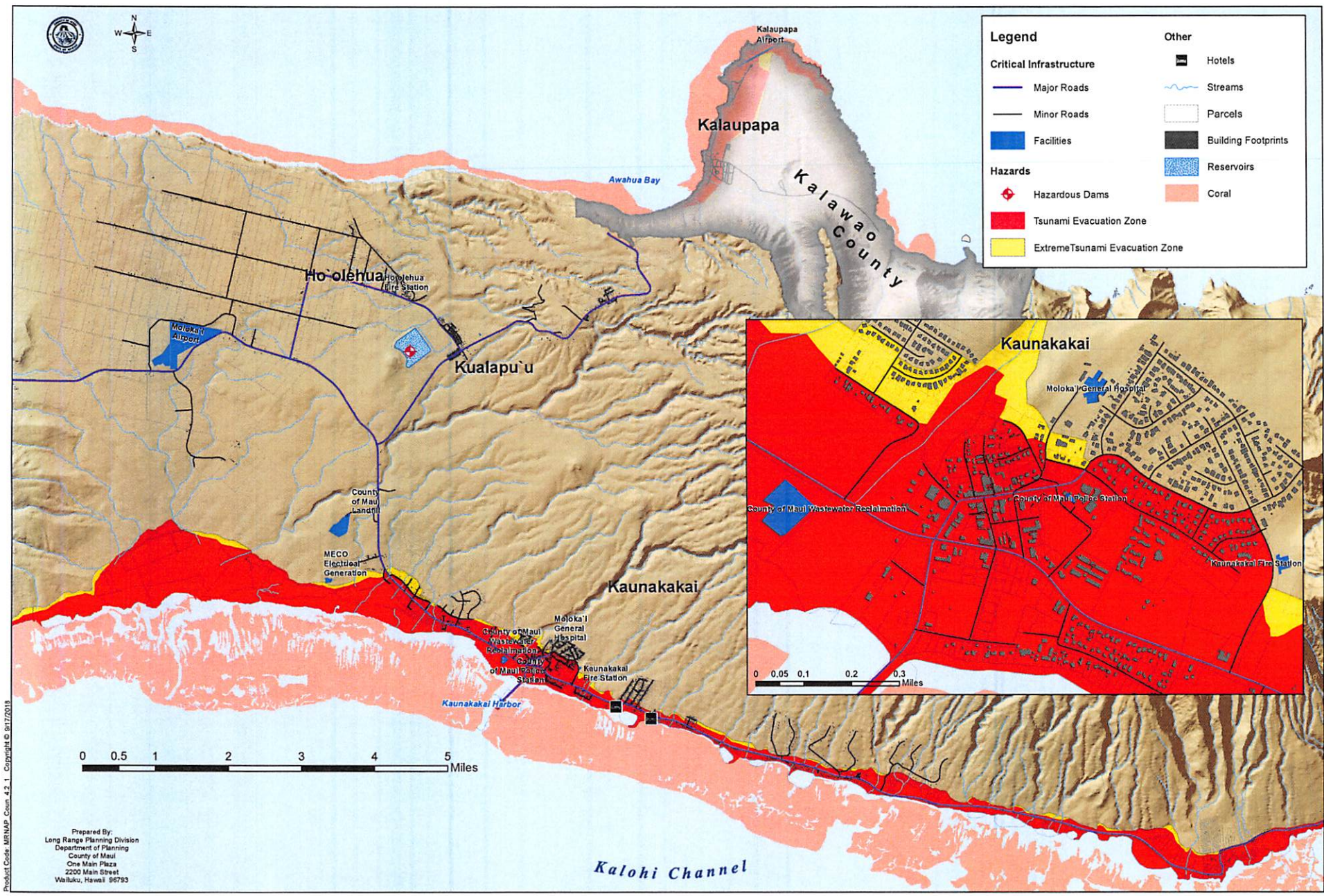
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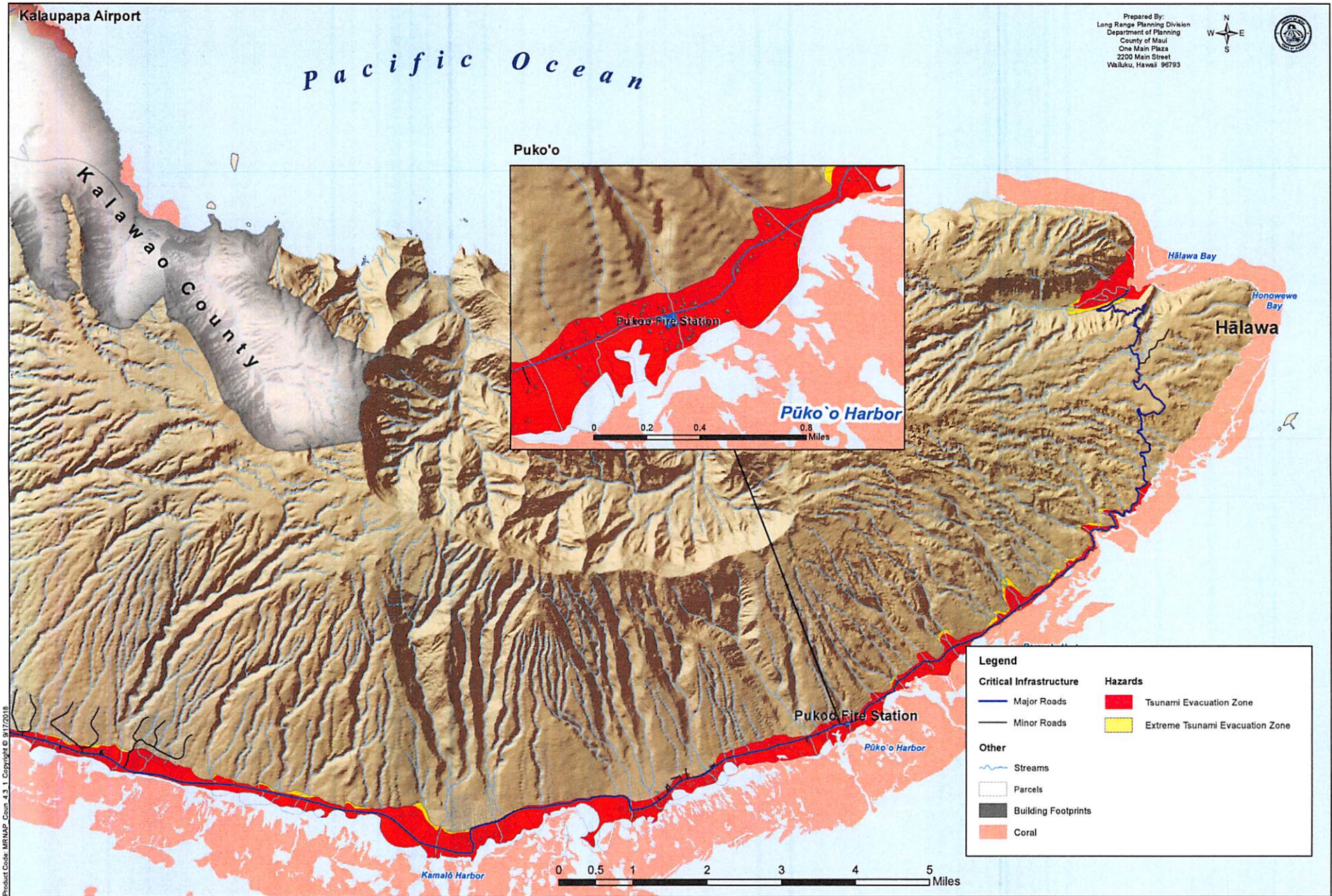






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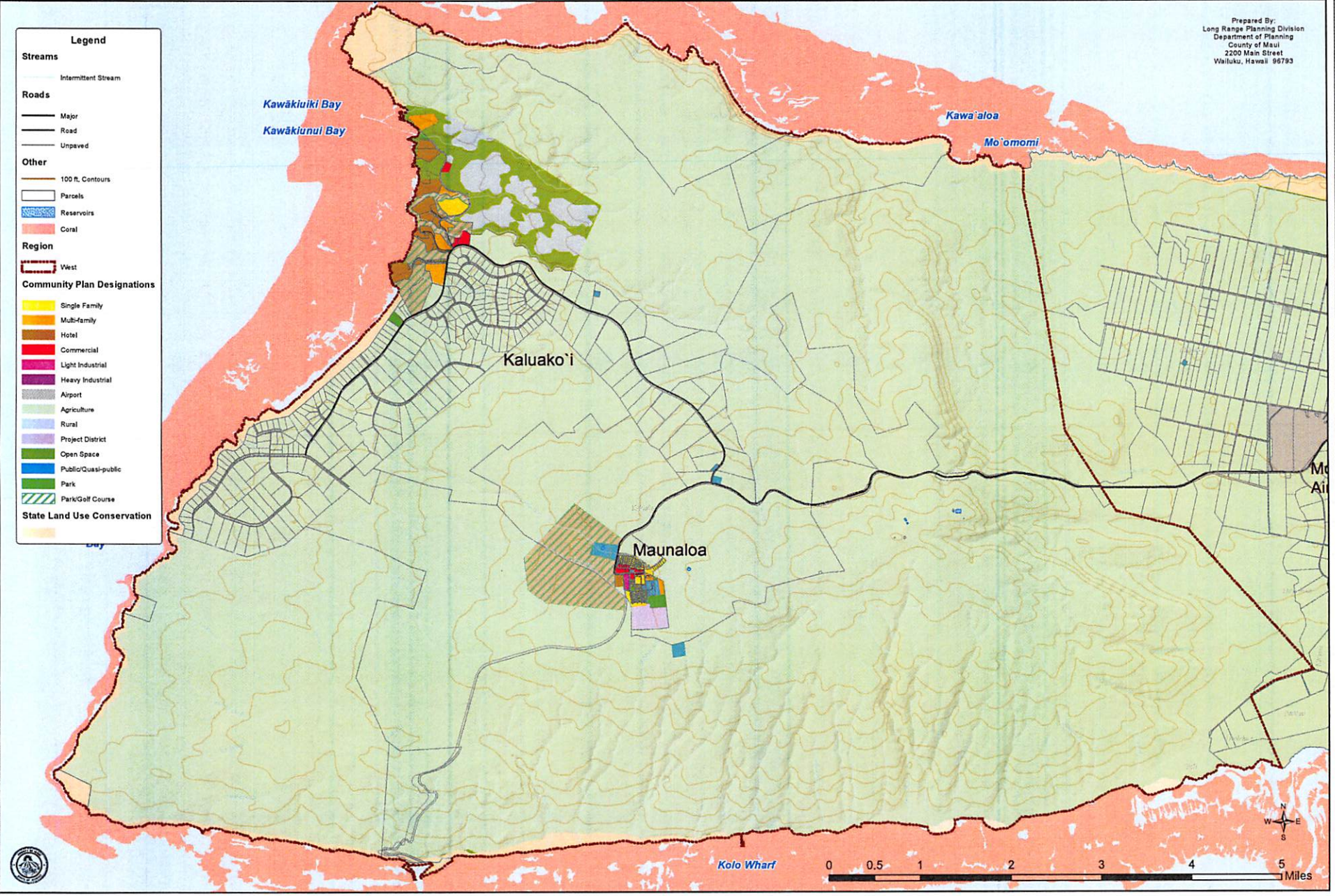
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- Legend**
- Streams**
    - Intermittent Stream
  - Roads**
    - Major
    - Road
    - Unpaved
  - Other**
    - 100 ft. Contours
    - Parcels
    - Reservoirs
    - Coral
  - Region**
    - West
  - Community Plan Designations**
    - Single Family
    - Multi-family
    - Hotel
    - Commercial
    - Light Industrial
    - Heavy Industrial
    - Airport
    - Agriculture
    - Rural
    - Project District
    - Open Space
    - Public/Quasi-public
    - Park
    - Park/Golf Course
  - State Land Use Conservation**
    -

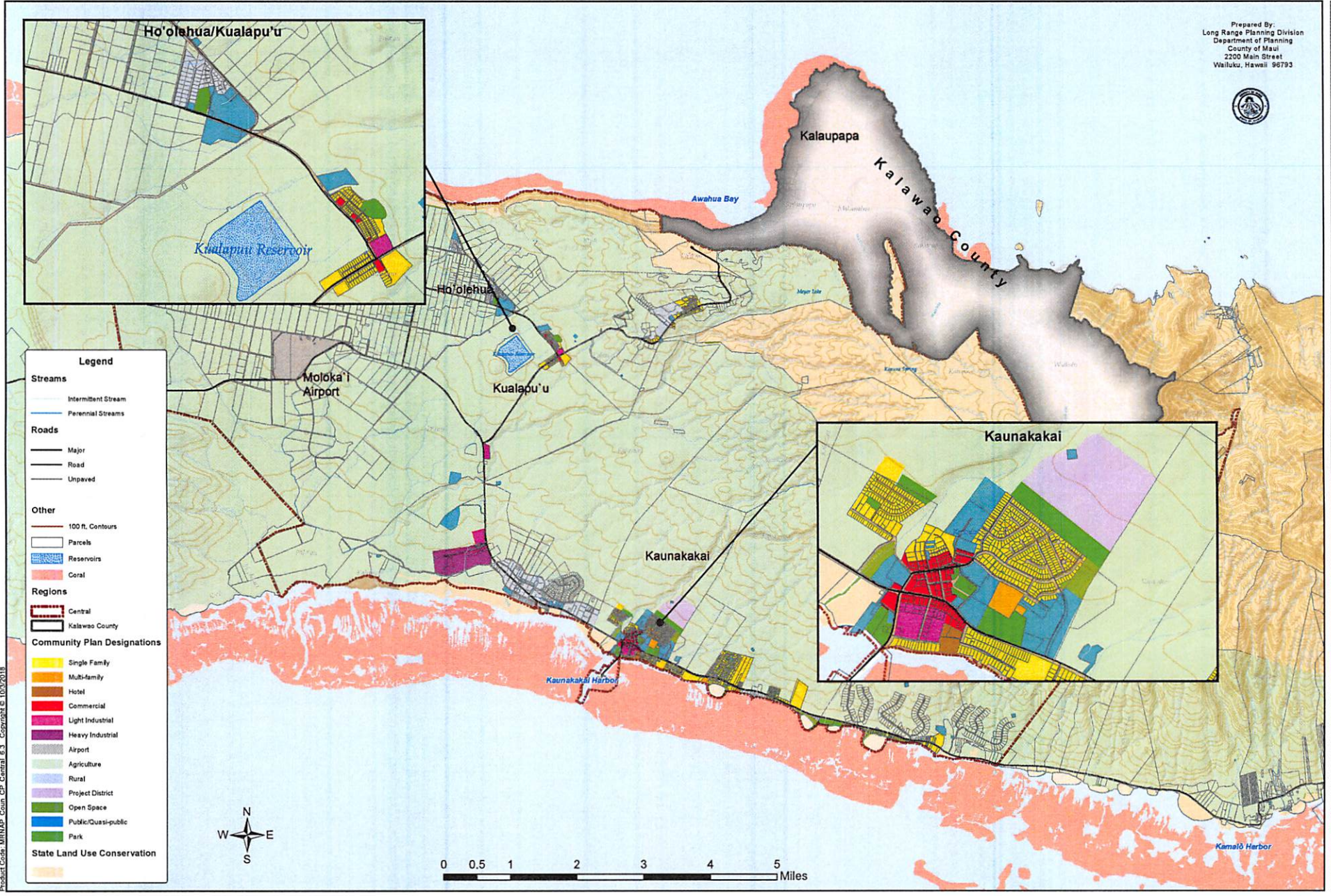
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 County of Maui  
 2200 Main Street  
 Wailuku, Hawaii 96793

**Map 6.2 Community Plan Land Use - West** **Molokai Island Community Plan Update**

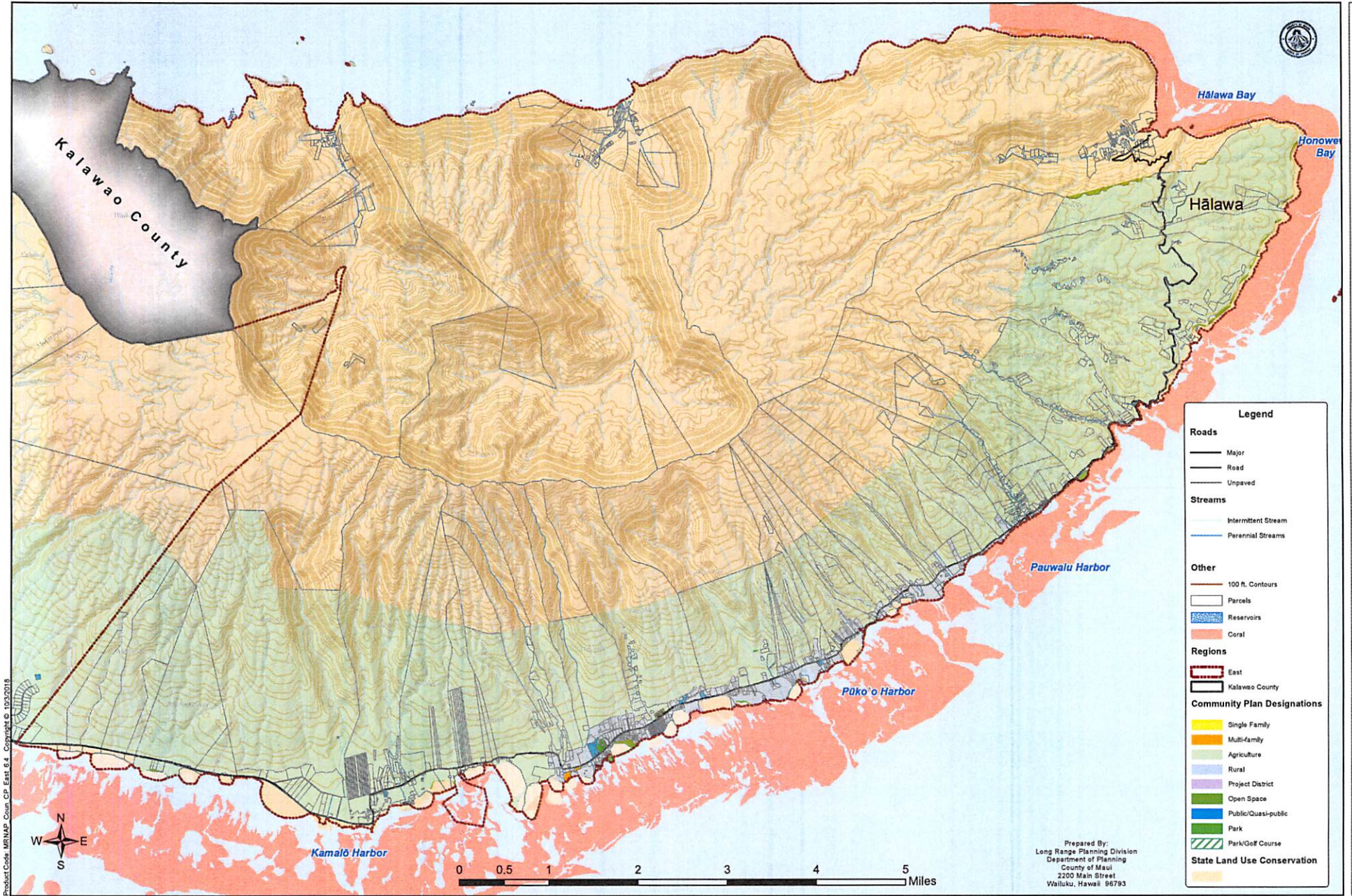
**Maui County General Plan 2030** **Molokai Island Community Plan**

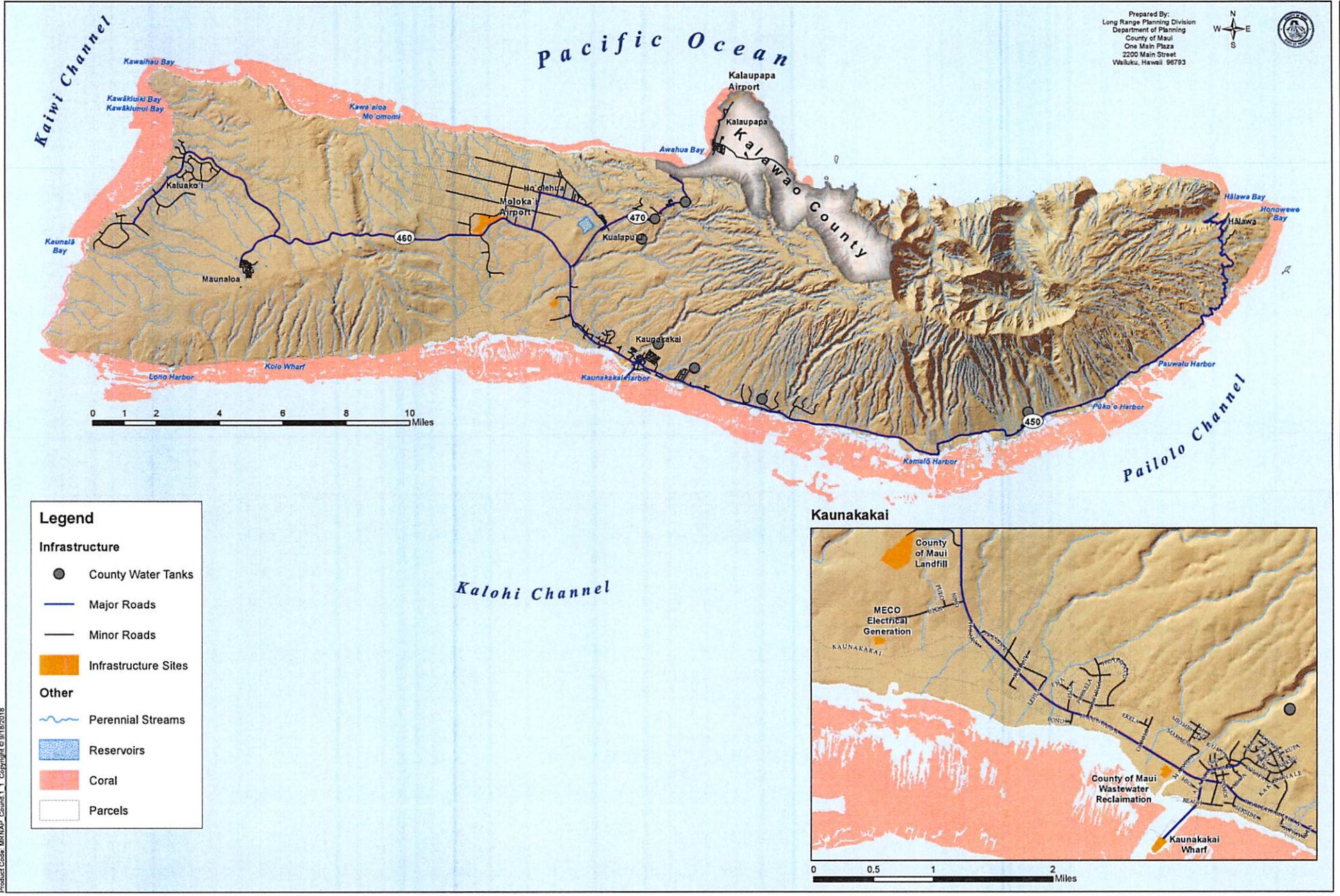
Date: September 17, 2018

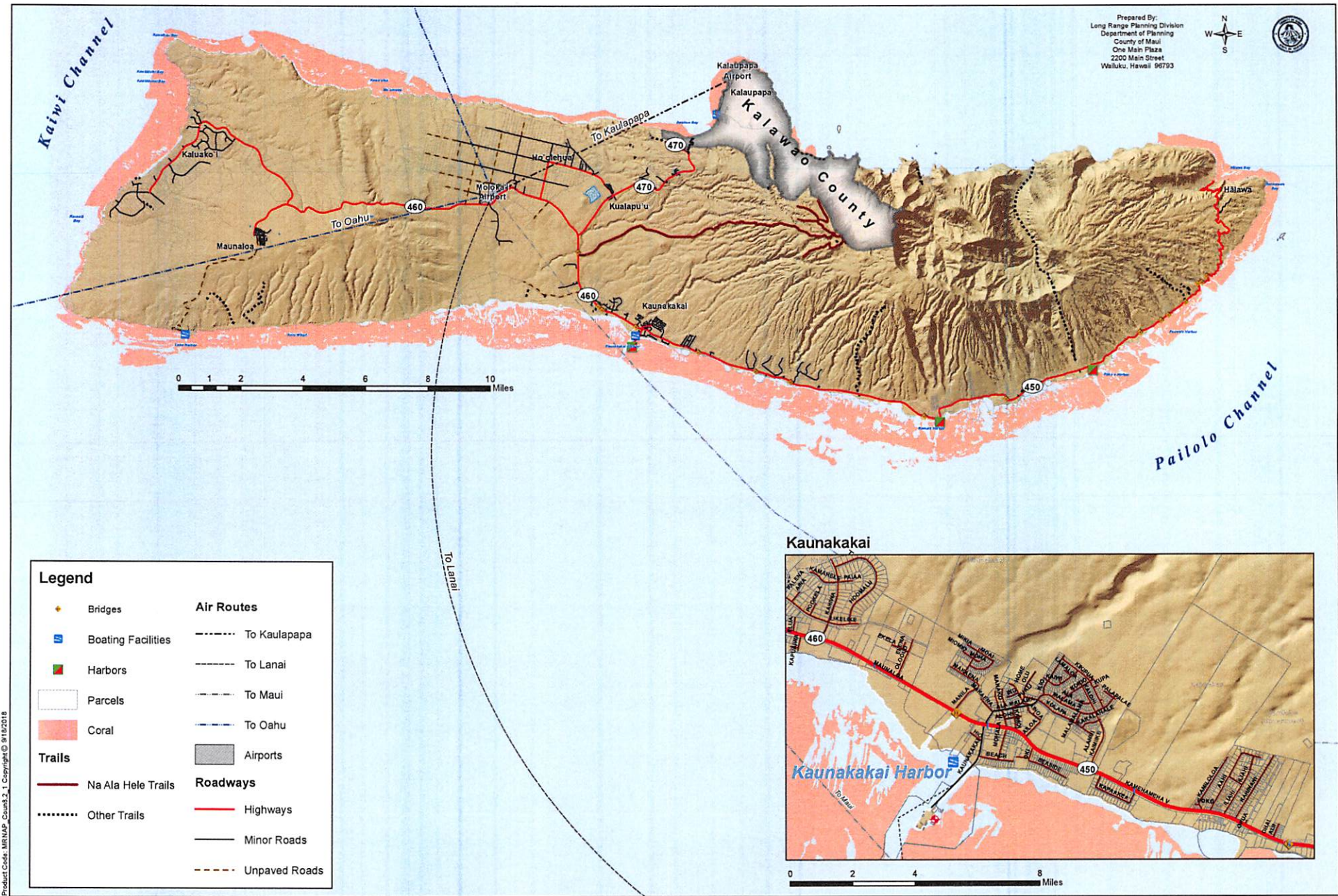
Prepared By:  
Long Range Planning Division  
County of Maui  
2200 Main Street  
Wailuku, Hawaii 96793



Map 6.3 Community Plan Land Use - Central  
Molokai Island Community Plan Update  
Maui County General Plan 2030 Molokai Island Community Plan







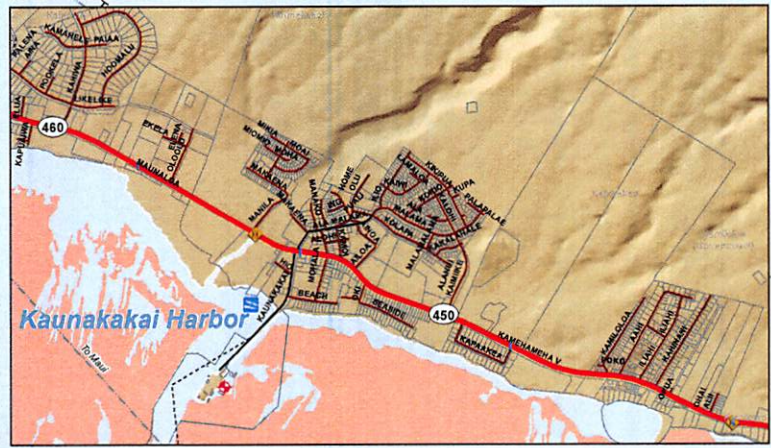
Prepared By:  
 Long Range Planning Division  
 Department of Planning  
 County of Maui  
 One Main Plaza  
 2200 Main Street  
 Wailuku, Hawaii 96793



**Legend**

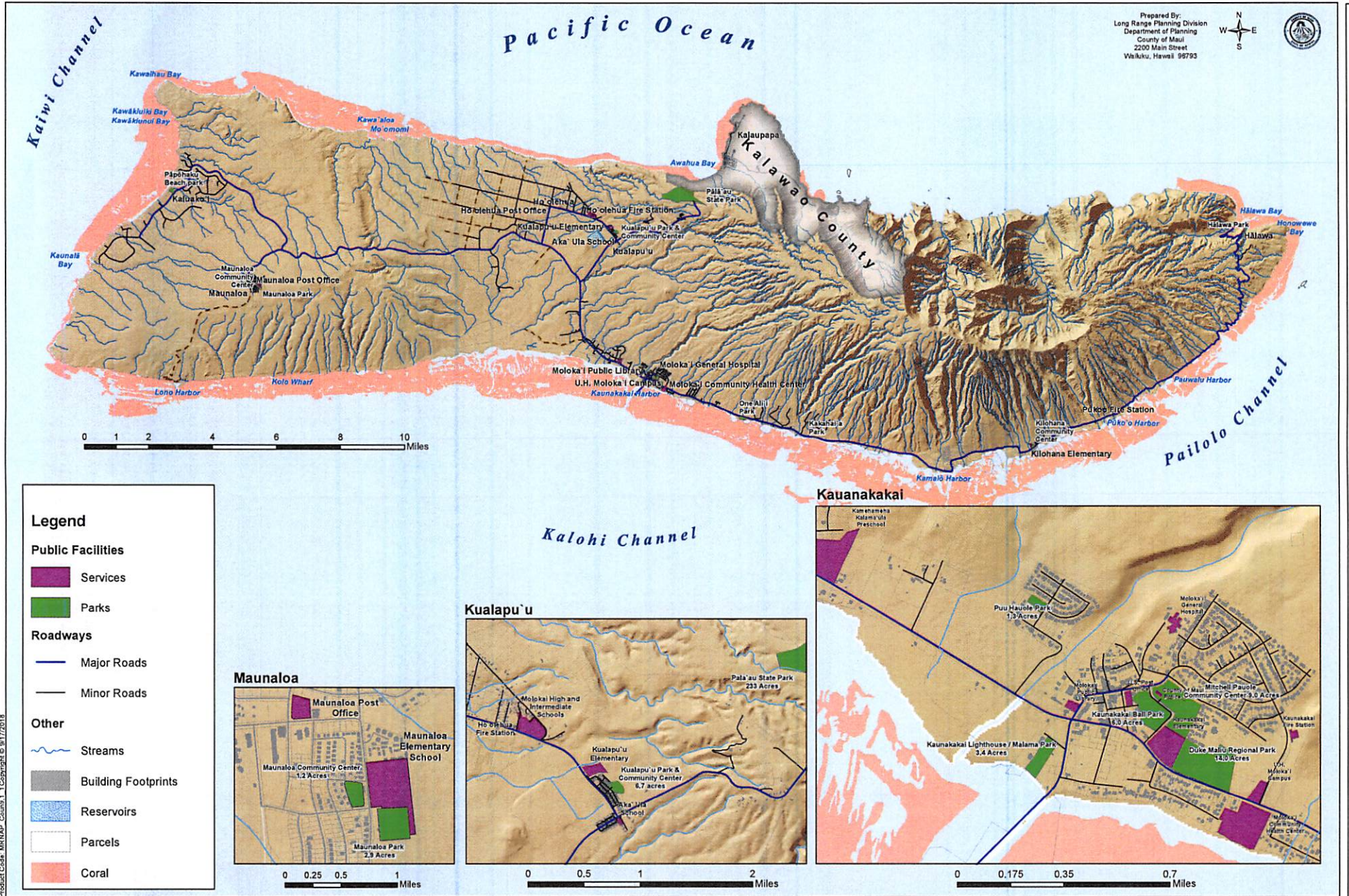
- |                    |                    |
|--------------------|--------------------|
| Bridges            | <b>Air Routes</b>  |
| Boating Facilities | ----- To Kaulapapa |
| Harbors            | ----- To Lanai     |
| Parcels            | ----- To Maui      |
| Coral              | ----- To Oahu      |
| <b>Trails</b>      | Airports           |
| Na Ala Hele Trails | <b>Roadways</b>    |
| Other Trails       | Highways           |
|                    | Minor Roads        |
|                    | Unpaved Roads      |

**Kaunakakai**



0 2 4 8 Miles

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Product Code: MRMAP\_Cover3.1 Copyright © 9/17/2018

WE HEREBY CERTIFY that the foregoing BILL NO. 119 (2018)


1. Passed FINAL READING at the meeting of the Council of the County of Maui, State of Hawaii, held on the 13th day of December, 2018, by the following vote:

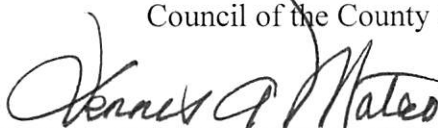
Michael B. WHITE Chair	Robert CARROLL Vice-Chair	Alika ATAY	Eleanora COCHRAN	S. Stacy CRIVELLO	Donald S. GUZMAN	G. Riki HOKAMA	Kelly T. KING	Yuki Lei K. SUGIMURA
Aye	Excused	Aye	Aye	Aye	Aye	Aye	Aye	Aye

2. Was transmitted to the Mayor of the County of Maui, State of Hawaii, on the 14th day of December, 2018.

DATED AT WAILUKU, MAUI, HAWAII, this 14th day of December, 2018.

RECEIVED  
2018 DEC 14 AM 11:16  
OFFICE OF THE MAYOR

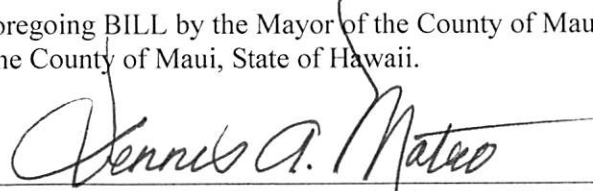
  
 \_\_\_\_\_  
 MICHAEL B. WHITE, CHAIR  
 Council of the County of Maui

  
 \_\_\_\_\_  
 DENNIS A. MATEO, COUNTY CLERK  
 County of Maui

THE FOREGOING BILL IS HEREBY APPROVED THIS 17 DAY OF December, 2018.

  
 \_\_\_\_\_  
 ALAN M. ARAKAWA, MAYOR  
 County of Maui

I HEREBY CERTIFY that upon approval of the foregoing BILL by the Mayor of the County of Maui, the said BILL was designated as ORDINANCE NO. 4920 of the County of Maui, State of Hawaii.

  
 \_\_\_\_\_  
 DENNIS A. MATEO, COUNTY CLERK  
 County of Maui

Passed First Reading on November 16, 2018  
Effective date of Ordinance December 17, 2018

I HEREBY CERTIFY that the foregoing is a true and correct copy of Ordinance No. 4920, the original of which is on file in the Office of the County Clerk, County of Maui, State of Hawaii.

Dated at Wailuku, Hawaii, on

\_\_\_\_\_  
County Clerk, County of Maui

RECEIVED  
2018 DEC 17 AM 9:42  
OFFICE OF THE COUNTY CLERK