

KAUA'I

KAUA'I COUNTY GENERAL PLAN

KĀKOU

SUSTAINABILITY

OPEN SPACE

LAND USE

COMMUNITY

CONSERVATION

ROADS AND TRAFFIC

GROWTH

AGRICULTURE

INFRASTRUCTURE

ECONOMY

HOUSING

DEPARTMENTAL DRAFT
JANUARY 2017



Exhibit 23

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The theme of this General Plan is 'Kaua'i Kākou.'

This theme recognizes that everyone must work together to define and implement a shared vision for our island.

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GLOSSARY OF HAWAIIAN WORDS AND PHRASES

The following list provides Hawaiian words and phrases, and their corresponding definitions, used throughout this document. The translations are taken and adapted as necessary from *Ulukau*, the Hawaiian Electronic Library, available online at <http://wehewehe.org/>.

Ahupuaʻa – land division usually extending from the uplands to the sea, so called because the boundary was marked by a heap (ahu) of stones surmounted by an image of a pig (*Puaʻa*), or because a pig or other tribute was laid on the altar as tax to the Chief. The boundaries of an ahupuaʻa is based on the region's watersheds

ʻĀina hoʻoppulapula – protecting the Native Hawaiian population

Aliʻi – high chief

Aloha – affection, compassion for others

Kākou – we (inclusive, three or more), ours, promotes synergy when developing solutions and alternatives

Ka Poʻe Kahiko – ‘the People of Old’. Ka Poʻe Kahiko is also the name of a literature piece that describes the fundamental principles of Hawaiian life

Kamaʻāina – ‘children of the land’, used to describe Hawaiʻi residents

Kanaka maoli o Kauaʻi – Hawaiian native of Kauaʻi

Kapu – forbidden, sacred

Keiki – child/children

Kuleana – right, privilege, concern, responsibility

Kūpuna – elders

Lōkahi – collaboration or teamwork, unity, agreement

Mahalo – thanks, gratitude

Mālama ʻāina – to care for the land, stewardship of the land

Mālama pono – taking care, doing the right thing

Mākaʻi – ocean

Manaʻo – thought or belief

Mauka – mountain

Moku – traditional land division representing a district or section typically encompassing several ahupuaʻa. Kauaʻi's moku include Puna, Kona, Koʻolau, Haleleʻa, Nā Pali, Niʻihau

Mokupuni – island

ʻŌlelo - language

Pali – cliff

ʻOhana – family, relative, kin group

Wahi Pana – sacred place

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ACRONYMS AND ABBREVIATIONS

The following list provides the acronyms, abbreviations, and their corresponding definitions used throughout this document and is formatted in alphabetical order.

ACS American Community Survey	EIS Environmental Impact Statement
ADA Americans with Disabilities Act	EPA Environmental Protection Agency
ADU Additional Dwelling Unit	FEMA Federal Emergency Management Agency
ADVC Average Daily Visitor Census	FIRM Flood Insurance Rate Map
AIS Archaeology Inventory Study	GE Genetically Engineered
APA American Planning Association	GET General Excise Tax
B&B Bed & Breakfast	GP General Plan
BPH Bike Plan Hawaiʻi	GHG Greenhouse Gas
CAC Citizen Advisory Committee	GIS Geographic Information System
CDP Census Designated Place	GMO Genetically Modified Organisms
CEDS Comprehensive Economic Development Strategy	gpd Gallons Per Day
CHMP Commercial Harbors Master Plan	gwh Gigawatt Hour
CIP Capital Improvement Program	Hazmat Hazardous materials
CPTED Crime Prevention through Environmental Design	HDOT Department of Transportation
CWRM Commission on Water Resource Management	HHPS Hawaiʻi Housing Planning Study
CZO Comprehensive Zoning Ordinance	HiAP Health in All Policies
DBEDT Department of Business, Economic Development, and Tourism	HOME Home Investment Partnership Program
DHHL Department of Hawaiian Home Lands	HPV Human papillomavirus
DLNR Department of Land and Natural Resources	HTA Hawaiʻi Tourism Authority
DOBOR Division of Boating and Recreation	HUD U.S. Department of Housing and Urban Development
DOCARE Division of Conservation and Resources Enforcement	IAL Important Agricultural Lands
DOE Department of Education	ICAC Interagency Climate Adaptation Committee
DOFAW Division of Forestry and Wildlife	ICAP Island Climate Adaptation Policy
DOH Department of Health	IPCC Intergovernmental Panel on Climate Change
DOW Department of Water	ISWMP Integrated Solid Waste Management Plan
DPW Department of Public Works	ITS Intelligent Transportation System
DRR Disaster Risk Reduction	IWS Individual Wastewater Systems
EA Environmental Assessment	KCHA Kauaʻi County Housing Agency

KCHII Kauaʻi Community Health Improvement Initiative

KEDB Kauaʻi Economic Development Board

KESP Kauaʻi Energy Sustainability Plan

KESRP Kauaʻi Endangered Seabird Recovery Project

KIUC Kauaʻi Island Utility Cooperative

KPAA Kauaʻi Planning and Action Alliance

KTP Kīlauea Town Plan

KTS Kapaʻa Transportation Solutions Study

KTSP Kauaʻi Tourism Strategic Plan 2016 – 2018 Update

KVB Kauaʻi Visitors Bureau

LCP Līhuʻe Community Plan

LESP Land Evaluation and Site Assessment

LGBTQ Lesbian-gay-bisexual-transgender-queer

LOS Length of stay

LRTP Long Range Transportation Plan

MGD Million Gallons per Day

MLTP Multimodal Land Transportation Plan

MMA Major Market Area

MMT CO2EQ Million Metric Tons of Greenhouse Gas Emissions

NAICS North American Industry Classification System

NIMS National Incident Management System

NOAA National Oceanic and Atmospheric Administration

NSPA North Shore Path Alternatives

OCCL Office of Conservation and Coastal Lands

PDR Purchase of Development Rights

PHEV Plug-in Hybrid Electric Vehicle

PMRF Pacific Missile Range Facility

PTSA Parent Teacher Student Association

R&D Research & Development

RPS Renewable Performance Standards

SHPD State Historic Preservation Division

SKCP South Kauaʻi Community Plan

SLR Sea Level Rise

SRTS Safe Routes to School

SMA Special Management Area

SNAP Supplemental Nutrition Assistance Program

SPA Special Planning Area

TAM Technical Assistance Memorandum

TDR Transfer of Development Rights

TVR Transient Vacation Rental

TVU Transient Vacation Unit

UDP Urban Design Plan

USDA United States Department of Agriculture

VDA Visitor Destination Area

VMT Vehicle Miles Traveled

WSPA West Side Path Alternatives

GLOSSARY OF TERMS

The following list provides definitions for planning terms used throughout this document and is formatted in alphabetical order.

Boundary Amendment means changes to the Hawai'i State Land Use District boundaries. Boundary amendments are approved by the State Land Use Commission.

Community Plan is a public document that provides specific proposals for future land uses, developments, and public improvements in a given community within the County of Kaua'i. In the 2000 General Plan, Community Plans were referred to as 'Development Plans'. Community Plans are intended to be region specific and capture the community's vision for the area.

Design Standards are specific regulations, such as form base code, within Special Planning Areas. Design Standards are intended to help to achieve the vision and character that is desired by the community.

Development means any building, construction, renovation, mining, extraction, dredging, filling, excavation, or drilling activity or operation; any material change in the use or appearance of any structure or in the land itself; the division of land into parcels; any change in the intensity or use of land, such as an increase in the number of dwelling units in a structure or a change to a commercial or industrial use from a less intensive use; any activity that alters a shore, beach, seacoast, river, stream, lake, pond, canal, marsh, dune area, woodlands, wetland, endangered species habitat, aquifer or other resource area, including coastal construction or other activity (*APA Website, 2016*).

Development Permits (Land use and building permits collectively) means any written approval or decision by a local government under its land development regulations that gives authorization to undertake some category of development, including but not limited to a building permit, zoning permit, final subdivision plat, minor subdivision, resubdivision, conditional use, variance, appeal decision, planned unit development, site plan, certificate of appropriateness, and zoning map amendment(s) by the legislative body (*APA Website, 2016*).

Development Standards means specific regulations, such as lot coverage, building height, and setbacks that guide the placement of development per zoning district. For example, Residential Development Section 8-4.4 of the Comprehensive Zoning Ordinance (CZO) Standards states single family detached dwelling units are subject to density and acreage limitations.

Good Agricultural Practices means voluntary audits that verify that fruits and vegetables are produced, packed, handled, and stored as safely as possible to minimize risks of microbial food safety hazards (*USDA Website, 2016*).

Houselessness means lack of housing. Individuals who are houseless lack permanent housing, and may live on the streets, in shelters, in abandoned buildings or vehicles, or any other unstable or non-permanent situation (*NHCHC Website, 2017*).

Housing Unit means a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters (*SMS Research, 2016*).

Infill Development means building within existing communities. Infill development can expand housing inventory without consuming open space.

Landscape guidelines are design and maintenance guidelines that improve the quality, safety, and cost-effectiveness of street landscaping. They also can be used to aid design standards to achieve the vision and character that is desired by the community.

Missing Middle Housing means housing located within walking distance to shops and amenities, fills the gap between single-family homes and apartment buildings (*Opticos Design Website*, 2017).

Multi-Family Housing means there are two housing units or more within a single building, or there are separate housing units within one housing complex.

Single-Family Housing means a building consisting of only one dwelling unit designed for or occupied exclusively by one family.

Subdivision means the division of land or the consolidation and resubdivision into two or more lots or parcels for the purpose of transfer, sale, lease, or building development. The term also includes a building or group of buildings, other than a hotel, containing or divided into two or more dwelling units or lodging units.

Tsunami Evacuation Zone means any area that should be evacuated when there is a tsunami warning present, as mandated by the Kauaʻi Civil Defense Agency (KCDA). These areas are typically a minimum of 100 feet away from inland waterways and marinas connected to the ocean.

Zoning Amendment means changes or additions to the County of Kauaʻi CZO. Section 8-3.4 of the CZO states amendments may be made whenever the public necessity and convenience and the general welfare require an amendment.

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INTRODUCTION

Kauaʻi is at a Crossroads

Kauaʻi’s beauty – found in its expansive beaches, striking landscapes, and cultural diversity – enriches the lives of its people and draws visitors from around the world. The spirit of aloha imbues our rural lifestyle and spiritual connection to the land and ocean – making our way of life unique and unhurried in an increasingly fast-paced world. However, there is a real threat against maintaining these qualities that make Kauaʻi the place we know and love.

Throughout the eighteen-month community outreach process leading to the development of this plan, many residents expressed that “times are tougher than ever” and that quality of life is burdened by Kauaʻi’s unresolved issues. There is clear frustration at past plans not implemented, a lack of clear direction, and deferred action. Kauaʻi remains vulnerable to overdependence on tourism while the challenges of traffic and housing touch everyone. Our rural infrastructure – aging and with limited capacity, appears to be at a tipping point.

The community’s perception of future threats have cast pessimism about whether Kauaʻi’s treasured identity can be preserved. There are needs, sometimes viewed as competing, in areas like environmental preservation, economic prosperity, traffic congestion, and community health. Concerns brew over agriculture lands, access to education, water quality, social equity, and invasive species. Looming on the horizon is global climate change and its potential effects on our communities, health, and economy. The island is at a crossroads on an array of issues; many attribute this overwhelming sense of vulnerability and insecurity to a common source: growth.

Growth is Happening Whether We Like It or Not

The desire for and need to manage growth is the primary driver behind long range planning. A successful plan relies on the community’s ability to accept factual circumstances, assess future challenges, and craft coherent solutions.

A recurring theme from the 2000 General Plan Update process was the desire to limit growth. Since then, actual growth has followed the high end of the 2000 General Plan’s projections, and not the low-to-middle range many anticipated (see Appendix D). In effect, our island’s growth continues regardless of the community’s desire to see it lessen.

The consequences of under-planning our future leads to inadequate infrastructure, an increase in illegal land uses, and a community that continues to evolve under the weight of more people. Some argue for consideration of policies like limiting the right to travel or allowing only one child per household. Such methods of population control are unconstitutional in the United States.

Projections indicate growth will continue throughout the next twenty years at an approximate rate of one percent a year (see graphic on the following page). Both natural increase of births and in-migration cause growth, but the data also reveals a large out-migration of those born and raised here. The island is at a juncture where we can adequately plan for future growth and opportunity; or we can continue to seeing kamaʻāina leave.

The General Plan’s public process revealed a strong desire to provide opportunities and a home for Kauaʻi’s keiki if they choose to stay on—or return to—Kauaʻi. This plan places particular emphasis on our children, accepting natural growth as positive and healthy for the community. However, the challenge remains how to provide for the type of growth that benefits local residents while also addressing today’s pressing concerns.

In particular, Kauaʻi is in the midst of a housing crisis. Approximately 9,000 homes are needed by the year 2035 (see Appendix D). A key element in encouraging our keiki to remain home depends

on addressing declining affordability and inadequate inventory. Simultaneously, any home that is built on Kauaʻi can be bought and sold on the global market for purposes beyond primary housing use. These competitive forces can and often do outpace those of Kauaʻi's own local resident population. How then do we ensure housing opportunities for our keiki and residents today and tomorrow?

The Urgency of Planning for Kauaʻi's Future

The desire to see a trend reversal in what kind of growth our island sees will largely depend on the outcome and implementation of plans like this one. Despite real and grave concerns about tomorrow, the plan can be viewed as a common call to arms to accept the tough decisions that must be made to steer us on the necessary path. Collective agreement to make hard choices for our future relies on whether the community tenor is accurate and the solutions have buy-in.

Throughout the public process for this General Plan, great effort was placed on “listening” rather than “telling.” Democracy relies on diverse views and respectful discourse, and the eighteen-month public process of Kauaʻi Kākou followed in that tradition. At the beginning, many indicated they did not want to see our communities change in light of what may lie ahead. However, the dissemination of baseline data about current conditions and trends, derived from a series of technical studies, helped build community capacity and a common pool of understanding so discourse could occur.

Thousands of residents touched the process in one way or another, through small group meetings, open house events, pop-up tents, online surveys, visioning workshops, classroom lectures, art and social media contests, and internet outreach (see Appendix C). Large land owners were individually consulted. A Citizen Advisory Committee (CAC) to the administration helped test factual presumptions and policy development. There was a total of 17 CAC meetings and workshops. Keiki participated through art and social media contests, school presentations, and a survey. Agency stakeholders engaged in multi-day, cross-sector workshops and helped develop technical studies. In short, the manaʻo of everyone with a stake in Kauaʻi's future was sought and welcomed.

Upon this foundation of community participation, the General Plan sets in place the vision, goals, policies, and actions to guide County decision-making and partnership efforts into 2035. It describes how we will manage projected growth while preserving our most important resources, places, and qualities.

A Vision Grounded in Reality

Communities around the island concur that the vision for more sustainable living laid out in the 2000 General Plan is correct and provides a firm foundation. But they make note of the many instances where the accomplishments fall short of the vision, things that need “fixing,” and the failure to work on weakness, all of which is contrary to the vision of the island they desire. Faced with this dilemma, the choice to move forward on an updated General Plan for 2035 is layered with questions of what is appropriate to include, to emphasize, and to prioritize.

It was generally concurred that the 2017 General Plan should create policy, actions, measures of progress, a process for regular monitoring and reporting, and systems for greater accountability. Towards that end, an actions chapter is added and tied closely to the policies, and an implementation chapter is expanded. Further, the “Policies to Guide Growth” section identifies 20 key policies for Kauaʻi, discusses the rationale behind the policies, and provides insight on their intended outcomes.

With these additions, the General Plan can continue to serve as the premier document that sets clear policy for the County, for managing growth and for providing guideposts.

Kauaʻi Kākou: Moving Forward Together

In other places, the notion that everyone has a shared responsibility – or kuleana – for defining and implementing the future is often an unfamiliar idea that must be explained or arrived at. Not here.

Kauaʻi's strengths lie in both the individual and collective sense of independence and kuleana that its people share. We must rely on one another, continue to address challenges head on, become more self-sufficient, and protect the physical environment and culture that make Kauaʻi special.

The General Plan encapsulates this spirit in its over-arching theme, Kauaʻi Kākou, and memorializes the conviction that the only way to plan and implement the vision for Kauaʻi is with all of us together, Kākou.



Community members at a meeting of the Citizens Advisory Committee, Līhuʻe District

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The General Plan envisions communities that support and promote sustainability, resilience, health, and opportunity for all people into the future.

Image: East Kaua'i Community Visioning Workshop in Kapa'a

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1.0

VISION, GOALS & POLICIES FOR THE FUTURE

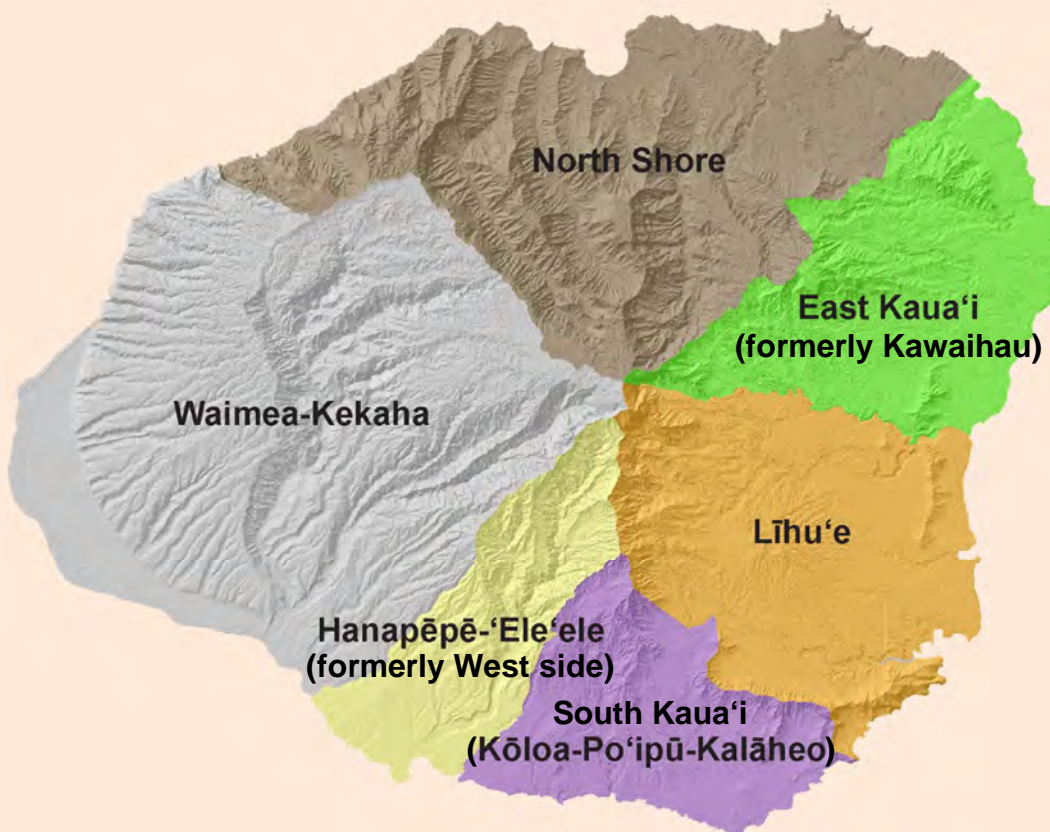
The General Plan Vision & Goals for Kauaʻi are a series of statements that express the community's values and desired outcomes in the year 2035. Policies and actions flow from the Vision & Goals.

1.1 GENERAL PLAN CONTEXT

The General Plan establishes priorities for managing growth and community development over a 20-year planning timeframe. In addition to being required by State Law, the County Charter instructs that the General Plan guide future action concerning land use and development regulations, urban renewal programs, and expenditures for capital improvements. The first General Plan was adopted in 1971. Updates occurred in 1984 and 2000.

The General Plan covers six planning districts on the Island of Kauaʻi: North Shore, East Kauaʻi, Līhuʻe, South Kauaʻi, Hanapēpē-ʻEleʻele, and Waimea-Kekaha (Figure 1-1). The Island of Niʻihau is also part of Kauaʻi County, but is not covered by the General Plan due to its predominantly private ownership and management.

Figure 1-1. Kauaʻi Planning Districts



County Planning System

The planning system is composed of a hierarchical set of activities and plans, as shown in Figure 1-2. The General Plan, the Community Plans, and the Functional Plans set long-term policy directing development of the land use ordinances and the Capital Improvements Program.

The **General Plan**, the top tier in violet on the Figure, sets forth the policy direction for the County through written policies. Spatial policies are depicted on future land use maps and policy maps. This policy is elaborated through the more detailed Community Plans, zoning, and land use regulations.

Community & Special Area Plans, the second tier in blue, establish more detailed policy and maps that are specific to a certain community or geographic areas and establish the basis for zoning controls that are unique to the area.

Functional Plans analyze alternatives and establish policy regarding the future development of specific systems and facilities. Both Community Plans and Public Facility Plans are strategic in character. They define and set forth strategies and courses of action, often involving commitments of resources and developments of physical improvements.

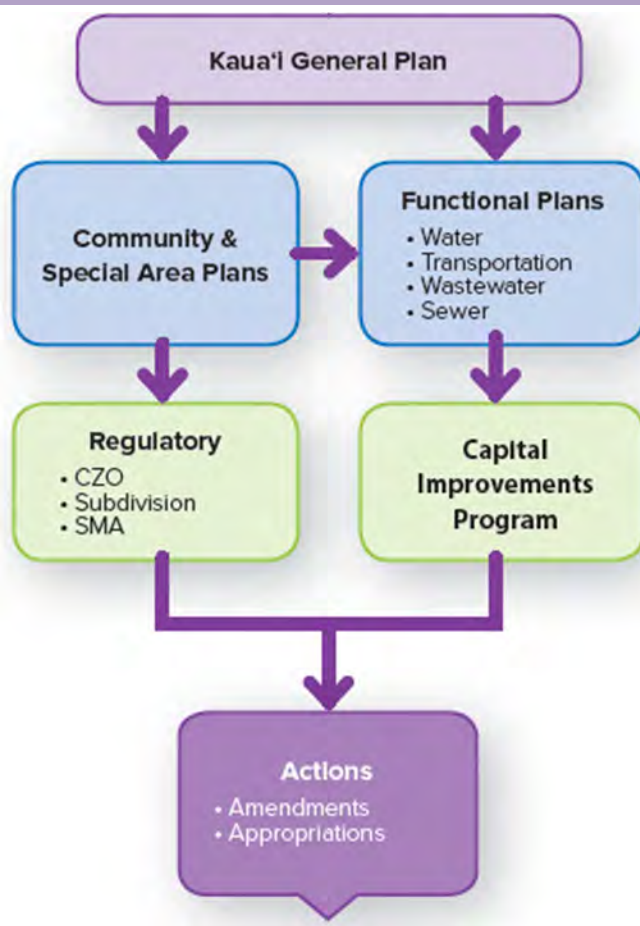
The third tier in green reflects the interface between the policy plans and implementing measures.

The **Capital Improvements Program (CIP)** includes County expenditure and action priorities for six years. It also establishes a financial plan and a general schedule for implementing projects.

Regulatory Ordinances and Administrative Rules including the Comprehensive Zoning Ordinance (CZO), the Special Management Area (SMA) Rules, and the Subdivision Ordinance, set standards for land uses, as well as procedures and criteria for deciding discretionary permits. The CZO and other land use regulations elaborate on General Plan and Community Plan policies. The regulations translate policies (both maps and text) into specific terms, such as permissible uses, building heights, and other requirements.

Zone Amendments apply to a particular land parcel or group of parcels. The General Plan Land Use Map shows only general land uses for an area. Zone changes translate these to the parcel level on the County Zoning Maps. At the time of zoning, decisions need to be made concerning a wide range of issues, including but not limited to the following: potential effects on the use and character of surrounding lands; the specific location of commercial and residential areas; densities of development; the road system; and the adequacy of infrastructure and community facilities.

Figure 1-2. County Planning System



Actions represent what is needed to move policy forward. They include code changes, updated or new plans, partnership needs, and projects.

Performance measures provide a means of assessing progress in relation to the General Plan vision, goals, and policies. Chapter 3 covers performance measures and monitoring in further detail.

Site development and construction regulations such as the building code, grading ordinance, and the drainage standards are also not shown as part of the planning system diagram. These regulations play a significant role in guiding land development and maintaining environmental quality.

Key Growth Trends

To the year 2035, Kauaʻi will continue expanding its resident and visitor population base, thus increasing the demand for new housing and jobs. Total population for the County is projected to increase from 71,735 in 2015 to 88,013 in 2035 (see Table 1-1). That represents a total growth of 22 percent between 2015 and 2035, or close to an average annual rate of growth of one percent (see Figure 1-3). Although growth will be spurred by both natural increase and in-migration, the forecasted growth rate is lower and more stable compared to previous decades. Changing demographics suggest an aging population with limited ability to maintain the levels of natural growth experienced in the last two decades.

Table 1-1. Kauaʻi County Population, Island wide and By District (1990-2035)

	1990	2000	2010	2020	2030	2035
County of Kauaʻi	51,676	58,463	67,091	74,693	83,328	88,013
Līhuʻe	11,169	12,507	14,683	18,017	21,595	23,456
South Kauaʻi	9,600	10,545	11,696	13,623	15,737	16,855
Hanapēpē - ʻEleʻele	3,873	4,362	6,157	6,463	6,860	7,094
Waimea-Kekaha	4,698	5,660	5,561	5,901	6,323	6,566
North Shore	5,913	6,605	8,002	8,286	8,686	8,933
East Kauaʻi	16,192	18,784	20,992	22,403	24,128	25,110

The number of housing units is a function of the total population and assumes that housing production will respond to demand. To accurately determine housing unit demand, household size and increase was forecasted on the district level. As with population, the Līhuʻe Planning District is likely to see a larger increase in total households than the other districts (see Figure 1-4). Assuming that household size will remain stable, the total housing units is projected to increase from 29,793 in 2013 to 39,676 in 2035 (see Table 1-2). That represents a total growth of 33.1 percent between 2010 and 2035, or about 1.2 percent per year.

Figure 1-3. Key Growth Trends (2010-2035)

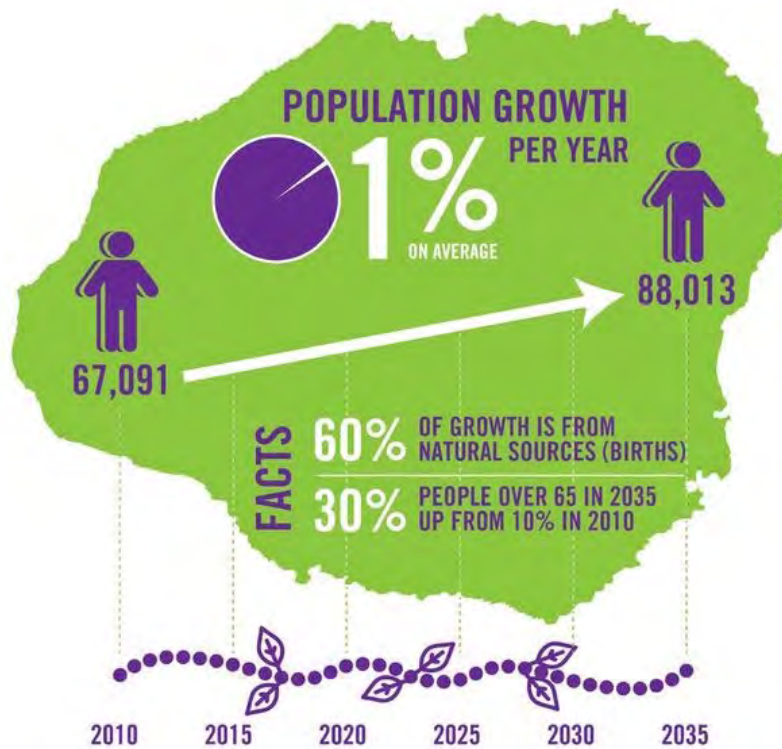


Figure 1-4. Growth Allocations by Planning District (2010-2035)

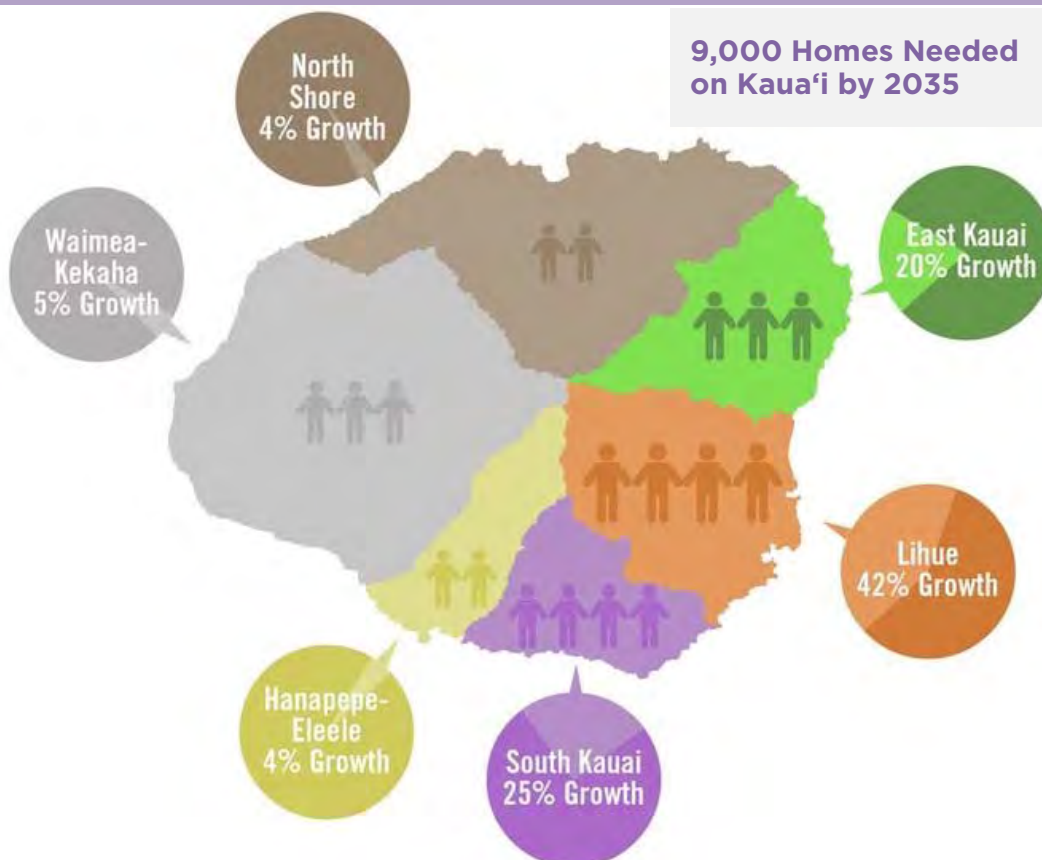


Table 1-2. Housing Unit Demand, Forecast to 2035

	Year					
	1990	2000	2010	2020	2030	2035
County of Kauaʻi , Total Units	17,613	25,331	29,793	33,553	37,519	39,676
County of Kauai, Available Units	16,985	21,398	24,915	28,085	31,379	33,169
County of Kauai, Occupied Units	16,253	20,370	23,240	25,902	28,788	30,349
Average annual growth rate		4.4%	1.8%	1.3%	1.2%	1.1%

Since 1990, a substantial number of jobs have been generated within the visitor industry (arts, entertainment, recreation, accommodations, and food services). Growth in the visitor industry and other sectors will increase total jobs to 34,000 by 2030 (see Table 1-3). Average annual job growth is expected to equal 0.79 percent until 2020. Between 2020 and 2030, job growth is expected to occur at an average annual rate of 0.66 percent. The rate is expected to dip again to 0.53 percent during the period between 2030 and 2035, resulting in 34,900 jobs by 2035.

Table 1-3. Job Growth, Forecast to 2035

	Year					
	1990	2000	2010	2020	2030	2035
County of Kauaʻi	25,250	26,550	28,150	31,900	34,000	34,900
Average annual growth rate		0.51%	0.60%	1.33%	0.66%	0.53%

The visitor arrivals forecast shows an overall growth of about one percent per annum between 2010 and 2035 (see Table 1-4). It decreases very slightly across that period. If history can be trusted, we can expect some form of disrupting event in the visitor industry every five to ten years. That means the real path that visitor arrival counts will take on Kauaʻi is likely to have its significant ups and downs just as it did in the last 25 years.

Table 1-4. Visitor Arrivals, Forecast to 2035

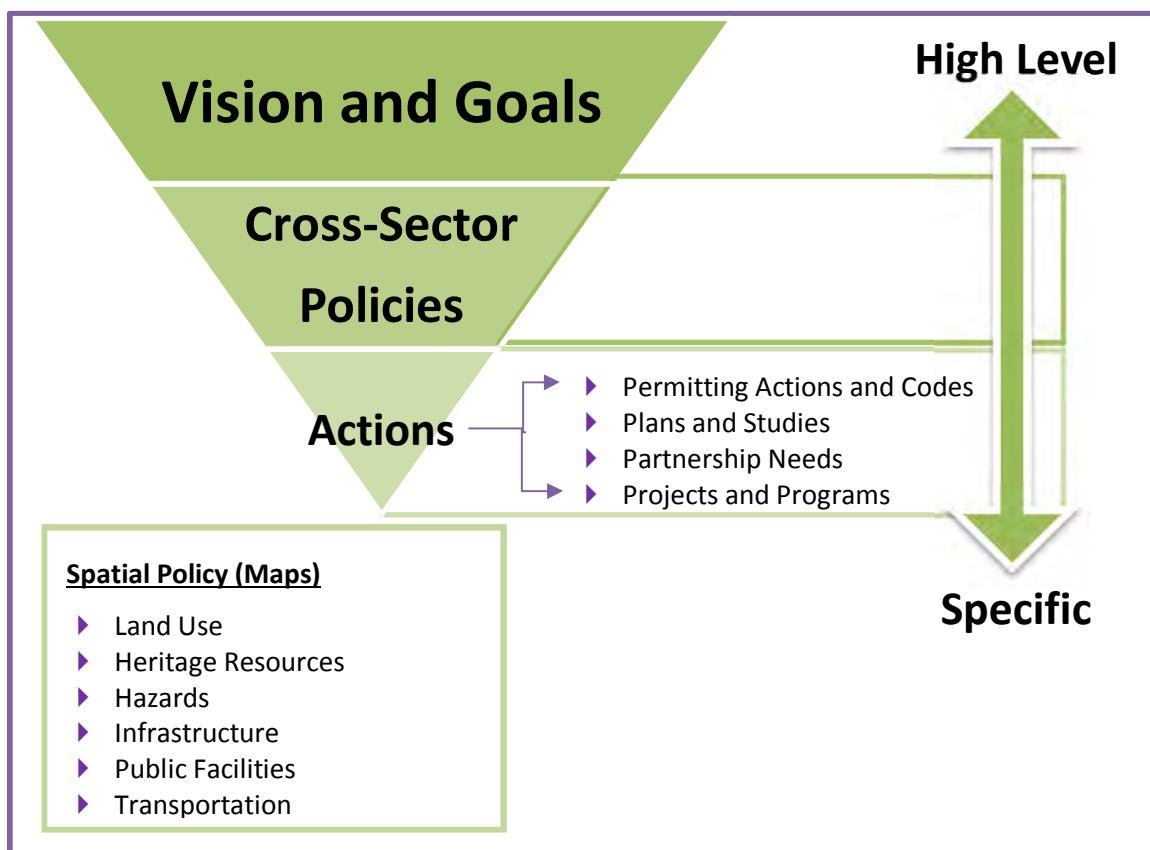
	Year					
	1990	2000	2010	2020	2030	2035
County of Kauaʻi (x 1,000)	1,229	1,075	1,033	1,150	1,270	1,330
Change this decade		-13%	3.8%	11.3%	10.4%	4.7%
Average annual rate of change		-1.3%	-0.4%	1.1%	1.0%	0.9%

General Plan Organization

The General Plan's organization articulates the County's direction through five components: vision, goals, policies, sector actions, and maps. Figure 1-5 shows the framework, with the vision and goals presented in this Chapter serving as the unifying element. Policies articulate the priority direction for the County, and actions are meant to identify specific steps to work toward achieving the vision and goals.

The actions are later reflected in the measurement of progress discussed in the Implementation section of the plan. This organization that integrates all parts of the General Plan reflects public input that progress towards achieving the vision set out in the plan should be monitored regularly, and adjusted when necessary.

Figure 1-5. Organization of the General Plan 2035



The General Plan is organized with the following chapters:

Chapter 1 presents the **vision and goals** for the General Plan. It also presents the over-arching **policies** that were derived from the vision and goals to guide County actions.

Chapter 2 presents the **actions** needed to implement the policies. Actions are organized into ten main sectors, each of which has sub-sections:

- I. The Watershed
- II. Housing
- III. Land Transportation
- IV. Critical Infrastructure
- V. Shared Spaces
- VI. Economy
- VII. Heritage Resources
- VIII. Energy Sustainability
- IX. Public Safety and Hazards Resiliency
- X. Opportunity and Health for All

Chapter 3 provides the framework for **Implementation and Monitoring** of the General Plan. It includes an approach for tracking progress and adjusting course.

Chapter 4 focuses on policies for **Future Land Use**. It describes the approach to updating the land use map from the 2000 General Plan, identifies what has changed, and describes the land use designations. This chapter also includes a preliminary vision and actions for each Planning District.

Chapter 5 presents **Policy Maps**. These are spatial depictions of existing and envisioned land uses, resources, and facilities across the island. The maps show the locations of existing resources, constraints, and settlements. They also identify areas which may be appropriate for future development.

Chapter 6 includes a list of **References** cited in preparing this document.

Appendices contain detailed information including a progress report on the 2000 General Plan, a description of the General Plan update process, and data that informed the development of the General Plan vision, goals, policies, and actions. There is also a matrix listing all actions to aid in implementation.

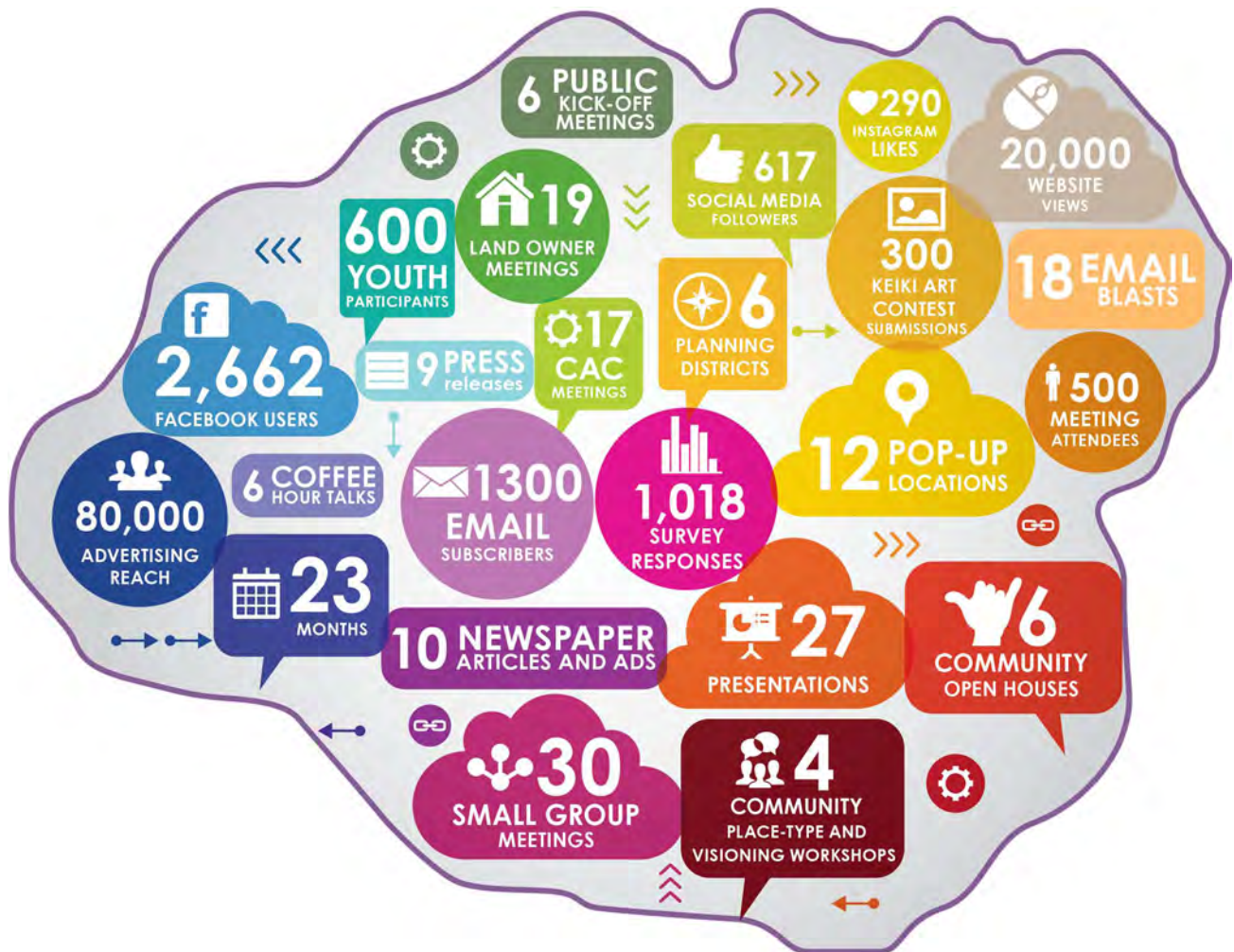
A Plan Driven by the Community's Vision

The General Plan is based on the community's vision for Kaua'i's future. This required a broad and inclusive public engagement process.

Thousands participated in the General Plan process through a variety of platforms including social media and other digital engagement, community and small group meetings, pop-up events at community events and destinations, and a survey with more than 1,000 respondents. Input was compiled and sorted for incorporation into this General Plan vision, goals, policies, and actions.

A project website (www.plankauai.com) was developed early in the process and served as a clearinghouse for information and updates. The References page of the website contains links to records of community input received as well as copies of the General Plan technical studies and other relevant documents. Figure 1-6 provides a sense of the reach of the public process as of December 2016. The major components of the public process are described in further detail in Appendix C.

Figure 1-6. Reach of the General Plan Public Process (as of December 2016)



Balancing Policy and Planning for Action

Throughout the first round of community meetings, community members provided positive feedback concerning the 2000 General Plan’s foresight and a well-crafted vision. However, many did point out weaknesses in the 2000 Plan’s ability to identify effective mechanisms for managing growth, and to provide the public and decision makers clear guideposts toward implementing the plan with fidelity and rigor. Further, the tenor and character of comments from the public tended to congregate around what was wrong with their community, what needed to be fixed, or where government failed them.

The issues raised by the public did not differ significantly from those facing the community before the turn of the millennium. However, the sense of urgency and concern is noticeably different – reflecting a heightened sense of frustration at how issues raised in the 2000 plan have become exacerbated over time.

In response to this concern, the plan focuses upon creating clarity in policy and direction built upon many of the still-valid foundational visions and ideas found in the 2000 Plan. The structure of the document keeps paramount the values for Kauaʻi that focus on what we have in common rather than looking at what separates us, threads those values through broad shifts and direction with the overarching policies, then implements those policies through clear actions and guideposts that leaders and community members can all understand and buy into.

The County Planning Department also received many comments raising concerns about how a focus on solving the problems created in the past are leaving aside detailed and deep discussion concerning policies that move us forward. There is concern that emphasis on actions may draw away attention from a firm policy foundation to guide decision-making and actions.

In response, the “Policies to Guide Growth” section discusses the rationale behind the policies and provides insight toward how the each item is meant to move us forward in the future. Further, the actions by sector are clearly tied for consistency back toward the policies and our collective vision.

Appendix H includes a comprehensive list of the actions in the General Plan and links each to a guiding policy to provide an additional layer of connectivity between policy and action.



Kauaʻi Residents During Visioning Workshop, Hanapeʻe-ʻEleʻele District

1.2 VISION AND GOALS

The vision sets the desired outcome for 2035 through a series of statements organized by four over-arching goals: 1) Becoming a sustainable island; 2) Maintaining Kaua'i's uniqueness and beauty; 3) Transforming into a community with healthy and resilient people; and 4) Creating equity and opportunity for all.

IN 2035, KAUA'I IS . . .

A Sustainable Island



A Sustainable Island

Growing responsibly to meet the needs of current and future generations without depleting resources.

- ▶ Kaua'i is a sustainable island, rooted in principles of aloha and mālama 'āina, and remarkable in its thriving ecosystems.
- ▶ Kaua'i is a place where conservation and restoration of land and water resources provides the foundation of sustainable policies for land use, energy, infrastructure, society and economy.

A Unique and Beautiful Place



A Unique and Beautiful Place

Stewardship and protection of the natural, cultural, social, and built environment assets that are of value to the community.

- ▶ Kaua'i is a place of distinctive natural beauty that honors its Native Hawaiian heritage, values historic places, and is shaped by diverse languages and cultural traditions.
- ▶ Kaua'i is an island of unique communities that are united in a common vision and in care for their neighbors and 'ohana.
- ▶ Kaua'i is a place where rural character and natural landscapes are preserved through compact, walkable communities separated by scenic and functional open spaces.
- ▶ Kaua'i is a place that welcomes visitors, providing adequate facilities and a variety of cultural and recreational opportunities while maintaining the principles of aloha and mālama 'āina.

A Healthy and Resilient People



A Healthy and Resilient People

Increasing health, vitality and resilience of communities through improving the natural, built, and social environment and responding to impacts from climate change.

- ▶ Kaua'i is a place with healthy people and vibrant community life, safe facilities for walking and biking, places to gather and socialize, and venues for arts and culture.
- ▶ Kaua'i is a resilient community that shares kuleana in planning for the future, proactively responding to and preparing for changes, and providing for the needs of people from keiki to kūpuna.
- ▶ Kaua'i is a place that supports agriculture and a diversity of farming practices and produces food and other products that contribute to Kauaʻi's self-sufficiency.

An Equitable Place, with Opportunity for All



An Equitable Place, with Opportunity for All

Fostering diverse and equitable communities with vibrant economies, access to jobs and housing, and a high quality of life.

- ▶ Kaua'i is an island of economic opportunity where businesses, cottage industries, and entrepreneurs thrive, and where youth have broad access to education, enrichment, and economic opportunity.
- ▶ Kaua'i is a place where housing for all ages and income levels is integrated into the fabric of each community, and where people can live close to work and recreational opportunities.

Each of the four goals that frame the vision are described in detail on the following pages.

1.2.1 A SUSTAINABLE ISLAND

Sustainability means growing responsibly to meet the needs of current and future generations without depleting important resources.

Kaua'i residents widely agree that sustainability should drive planning for the future. This recognizes that Kaua'i's natural environment provides the foundation for a sustainable and equitable society, which in turn creates and supports a sustainable economy. The 2000 General Plan broke ground toward recognizing sustainability goals for the County, but this General Plan is the first to adopt it as an overarching goal.

The United Nations Brundtland Commission defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

United Nations, 1987

Sustainable development does not endanger the natural systems that support life: air, water, soil, and living organisms. It also means meeting the basic needs of society and extending to all people the opportunity to satisfy their aspirations for a better life. It also means integrating economic and environmental considerations in policy and decision-making (*Our Common Future: Report of the World Commission on Environment and Development*, 1987). A key concept related to sustainability is managing growth without depleting the natural environment. The causes and impacts of global climate change must be factored into this approach by reducing greenhouse gas emissions and adapting in ways that are sensitive to the environment.

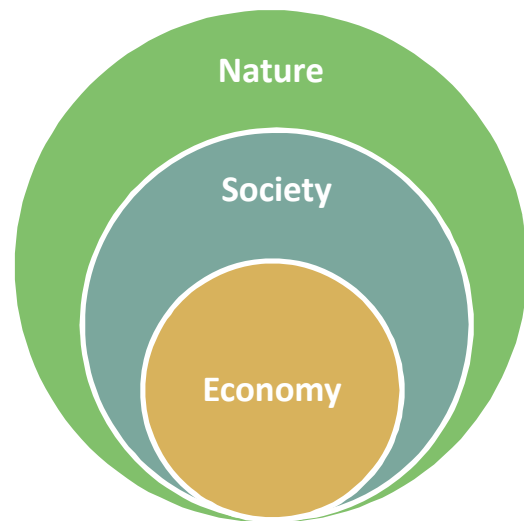
Many feel the island is near or at carrying capacity with regard to resources, such as parks, roads, and public infrastructure. There is also concern that Kaua'i's natural resources and ecosystems are being irreversibly stressed or depleted. Addressing these issues sustainably means frankly assessing the existing conditions and identifying the tools and resources available to provide for their sustainable use and protection into the future.



Community Voices

*"In the words of Edward R. Murrow, American journalist, 1908-1965:
"The obscure we see eventually.
The completely obvious, it seems,
take a little longer."*

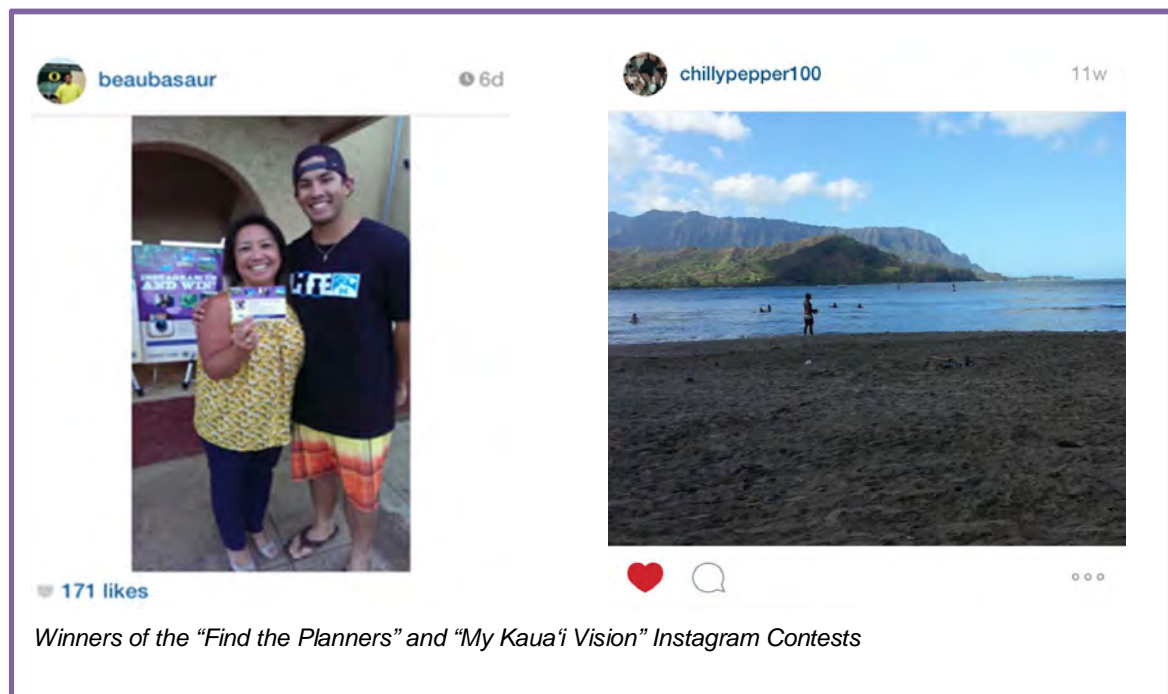
*Well, we have waited too long already, so let's design and build a
"Self-sufficient and Sustainable
Kaua'i for the people of Kaua'i."
And yes, we not only can be a
model for the rest of the state,
country, and world, we SHOULD BE,
we owe it to our children and future
generations!"*



Kaua'i's people believe that the natural environment supports a sustainable community, as shown in this diagram.

There is a common desire to manage or limit growth, visitor traffic, and development on Kauaʻi. There is agreement that growth should be concentrated around existing centers to promote efficiencies in infrastructure while preserving open space and contributing to health. Adequate infrastructure should be provided to support current and anticipated needs.

A sustainable society is one with a strong and diverse community fabric, where people of all ages, origins, economic status, and abilities co-exist and thrive. They share a desire to strengthen communities to withstand economic and environmental pressures and provide for needs from keiki to kūpuna. A sustainable economy requires increased self-reliance for food, energy, and other resources. This means each individual taking the responsibility, or kuleana, to reduce their ecological footprint in their own lifestyle and land use.



1.2.2 A UNIQUE AND BEAUTIFUL PLACE

Kaua'i's people share responsibility, or kuleana, to care for and protect treasured resources, traditions, and qualities of the natural, built, and human environment.

Kaua'i's natural ecosystems, coupled with its multi-ethnic culture, are what make Kaua'i truly unique. Those qualities and features that are irreplaceable and that exist nowhere else deserve protection in perpetuity. These include endemic and endangered species, historic structures, archaeological sites, cultural traditions, beliefs, practices, stories, and scared places (wahi pana).

There is a shared belief that applying traditional Hawaiian concepts of resource management such as the ahupua'a system can help to develop and support a culture of stewardship on Kaua'i. In addition, there is a recognition of the need to protect public trust resources. These resources are provided special protection in Article 11.1 of the Constitution of the State of Hawai'i, which states:

"For the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawai'i's natural beauty and all natural resources, including land, water, air, minerals and energy sources, and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State. All public natural resources are held in trust by the State for the benefit of the people."

Many of these resources are under private or shared management between different levels of government. The General Plan identifies those resources and qualities in need of stewardship, identifies issues and challenges, and sets forth policies that strengthen, uphold, or support their protection. The Heritage Resource Maps in Section 5.3 identify where resources in need of protection are concentrated. These maps and others included in this General Plan serve as a guide to identify areas where development should not occur.



Community Voices

"The land is chief. We are but stewards of the land. If we take care of the land, the land will take care of us. All in the community must take into consideration how important it is to take only what one needs; to share, if there is abundance; to combine resources whenever possible; to contribute one's talents and capabilities in the spirit of shared kuleana (responsibility)."



Waimea Canyon, Waimea-Kekaha District

1.2.3 A HEALTHY AND RESILIENT PEOPLE

We seek to increase the resilience and vitality of Kauaʻi's communities and promote better health outcomes through improving the natural, built, and social environment.



Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

Source: World Health Organization, 1946

Factors influencing health include the quality and affordability of housing, ability to walk or bicycle to key destinations, safety of streets, parks, and schools, access to health care and public services, availability of healthy foods and education, and access to recreational areas and beaches that support active lifestyles.

Healthy communities are multi-generational, support the needs of people from keiki to kūpuna, and are conducive to aging in place. Health and resilience are stronger with support locally grown food, compact walkable communities, preservation of natural areas, and access to jobs that support a high quality of life.

Resilience refers to the ability of a system to absorb disturbance and still maintain its basic function and structure.

Source: Walker and Salt (2006)

Resilient communities are those that have strong networks, know their strengths and vulnerabilities, and have resources that enable them to be self-sufficient in preparing for and responding to changes both expected and unexpected.

Having weathered multiple hurricanes, the residents of Kauaʻi have a heightened awareness of the need to prepare for, respond, and recover quickly from natural disasters. This awareness is an asset that can be employed to assist the island in planning for other hardships due to climate change or economic fluctuations.

Community Voices

"The plantation camps should be used as a community model where safety, health, and welfare can be provided in a planned community:

- ▶ *Community rules are formed and adhered to.*
- ▶ *Dispensaries and child caring centers can be established.*
- ▶ *Yurts or tiny homes on decks can be used and when more room is needed, smaller units.*
- ▶ *Porta potties are used and water must be brought in by residents or catchment systems used.*
- ▶ *On demand water heaters are used if there is water provided by county. Solar if not."*



Produce at Kōloa Sunshine Market, South Kauaʻi District

"Emphasize the relevance between the importance of being self-reliant and self-sustaining, along with the ways in which the essence of aloha becomes possible – to take care of ourselves, each other and our environment for generations to come!"

Self-sufficiency is a key aspect of resilience on Kaua'i. This includes increased food production to serve the local market, and exploration of crops for fuel and fiber. It includes transitioning to renewable, locally available energy sources rather than relying on imported fossil fuels. It means hardening key infrastructure and siting it and other development away from vulnerable areas over time.

For many residents, strong community fabric is of prime importance for Kaua'i. The relationships that create a sense of community are vulnerable if not properly cared for. Factors that can erode community fabric include: lack of opportunities and high cost of living, causing young people to leave; residents being priced out of the market in favor of part-time residents and transient vacation rentals; loss of common areas for gathering such as parks, post offices, and commercial centers; and urban sprawl, which favors dispersed development rather than compact, and walkable town centers where people can gather and interact. The General Plan seeks to rectify these concerns through policies and actions for revitalizing neighborhoods and towns, and encouraging affordable housing.

Resilience relies upon a strong and diverse economy. Workers must have access to sustainable, living-wage employment and opportunities for advancement. Kaua'i's heavy reliance on the visitor industry – from the number of jobs supported by visitor spending to the percentage of real property revenue generated from resort uses – is considered a threat to resilience. The General Plan's policies and actions support renewal, rather than expansion, in the visitor industry, strengthening of the agricultural sector, and economic diversification.



Hanalei taro fields, North Shore District

1.2.4 AN EQUITABLE PLACE, WITH OPPORTUNITY FOR ALL

We aim to foster diverse and equitable communities with vibrant economies, access to jobs and housing, and a high quality of life.



Opportunity is about equal access to a high quality of life, which includes adequate housing, employment, and pathways to upward mobility. Perhaps the greatest challenge to opportunity is Kauaʻi's high cost of living, often called the "Price of Paradise." There is great concern that the cost of living has pushed local families away from Kauaʻi, and keeps many families in or near poverty.

The majority of new and available housing is not affordable to the average working household. This has also led to a sense that development contributes to inequality by serving off-island interests. When transportation and electricity costs are factored in, the average Kauaʻi household spends more than 60 percent of its income on housing and transportation.

Some residents manage the high cost of living through supplemental backyard food production, hunting, fishing, and multiple jobs. Others turn living rooms or garages into bedrooms for long-term guests and extended family. Still yet, the number of houseless individuals and families on the island is increasing, and many more are at risk of becoming houseless. Those unable to manage the costs become the working poor, continually in "survival mode" – or they abandon Kauaʻi and seek opportunity elsewhere.

Reversing this trend means ensuring that Kauaʻi residents, regardless of factors such as geographic location, age, race, gender, and economic status, have access to housing that is adequate, employment that can sustain their needs, essential services, transportation options, and opportunities for recreation and enjoyment of shared spaces. It means making sure that planning and land development decisions do not unfairly burden disadvantaged groups. It means encouraging and celebrating diverse, mixed income neighborhoods. It means providing for workforce housing in new growth areas and areas to be redeveloped. It means providing access to services and opportunities in rural communities so that the people there can maintain their desired lifestyle while meeting their needs.

This General Plan includes policies that will help Kauaʻi provide opportunity for its people from keiki to kūpuna. This will require creative thinking, collaboration, and collective action in the spirit of Kauaʻi Kākou.

Community Voices

"I believe that most of the long term Kauaʻi residents are more concerned with the issues of opportunity and challenges faced by their children, resolving infrastructure issues, housing opportunities for the less affluent local community, cost of living, etc. In other words, survival.

If the only house you can afford is a black and grey apartment in Princeville, yet your job is in Līhuʻe-- you're stuck wasting four hours per day in traffic. It's our development patterns that guide our addiction to cars, not the other way around."

1.3 POLICIES TO GUIDE GROWTH

Twenty policies address the issues most important to Kaua'i residents in the face of existing issues and future growth. The policies guide actions in the next chapter and inform the Land Use Map in Chapter 5.

General Plan Policies

Twenty policies articulate the County's path forward toward meeting the community's vision and goals of sustainability, unique character, resilience, and equity. These policies respond to the critical issues and opportunities that were identified through the General Plan community process. They are not listed or organized in order of priority, as all are important. These policies were the subject of a community wide survey that was completed by more than 1,000 respondents across Kaua'i, and indicated widespread agreement with the policy direction. Results of the survey are summarized in Appendix C.

Each policy statement is numbered and accompanied by a brief description and an icon. Italicized text at the bottom of each policy description indicates how the policy is implemented through actions identified in Chapter 2, and how it relates to the Land Use Map and other Policy Maps in Chapter 5.



1. Manage Growth to Preserve Rural Character

Preserve Kaua'i's rural character by limiting the supply of developable land to an amount adequate for future needs. Prohibit development not adjacent to towns. Ensure new development occurs inside growth boundaries and is compact and walkable.

Kaua'i's rural character is what makes Kaua'i a unique and beautiful place to live and to visit. However, some people believe that this rural character is threatened by low-density development occurring on agricultural lands that are non-adjacent to our existing towns. Low-density development patterns also increase traffic—another threat to Kaua'i's rural character. Because our population will grow, we need to manage it in a way that is sustainable and preserves our character. By concentrating growth within or adjacent to existing towns, we designate where urban uses belong in order to better preserve agricultural lands and open space. Infill and compact growth within existing towns will also minimize infrastructure costs, maintain separation between towns, and alleviate traffic through increased connectivity and walkability within the town.

This policy is implemented spatially through the Land Use Map (Urban Edge Boundaries and amount of new urban district allocated to districts) and through actions for Housing, Land Use, and the Economy.



2. Provide Local Housing

Increase the amount of housing available for local households by focusing infrastructure improvements in growth areas. Eliminate onerous regulatory barriers and form active public-private partnerships.

The average price of a single family house on Kaua'i is around \$730,000, according to 2015 data from the Kaua'i Board of Realtors. The majority of our population, especially working families, seniors, and the houseless population, cannot afford housing on Kaua'i. Our current housing demand deficit is approximately 1,400 units (*Kaua'i Rental*

Housing Study, 2014) and is projected to increase to approximately 9,000 units by 2035 according to the *Socioeconomic Analysis* that was prepared for the General Plan. Our housing crisis is compounded by the fact that 44% of all households are already cost-burdened, meaning that housing costs exceeds 30% of income (ACS *Housing Snapshot, 2014*). In addition, slow inventory growth, regulatory barriers, predominantly single family residential construction, demand from people with wealth moving to the island and competing in the housing market, and a jobs/ housing imbalance are other factors that contribute to the housing crisis.

This policy is implemented spatially through the Land Use Map, and through actions for Housing, Transportation, Opportunities and Health, and Infrastructure and Services.



Recognize the Identity of Kaua'i's Individual Towns and Districts

3. Recognize the Identity of Kaua'i's Individual Towns and Districts

Kaua'i's towns and planning districts are distinct, each with its own character, opportunities, and needs. This uniqueness must be celebrated, protected in Community Plans, and reinforced in development standards.

An overriding theme that was stated by community members is the appreciation of Kaua'i's distinct towns separated by open space. This physical attribute contributes to the character of the island so valued by residents and visitors. Also clearly stated by the community is each town and district is unique: Kōloa is not Hanalei; Waimea is not Kapa'a, etc. Directing growth and the adoption of Community Plans in this manner protects the identity of towns and districts, and it preserves open space between towns.

This policy is implemented spatially in the Land Use Map, and through actions for Energy Sustainability, Transportation, and each planning district.



Design Healthy and Complete Neighborhoods

4. Design Healthy and Complete Neighborhoods

Ensure new and existing neighborhoods have safe roads and functional parks, as well as access to jobs, commerce, transit, and public services.

Nationwide and in Hawai'i, health problems such as obesity and diabetes have increased significantly for adults and children. If not reversed, for the first time in history in the United States, the lifespan of children may be shorter than the lifespan of their parents. These health outcomes can be attributed in part to increasing levels of inactivity. Kaua'i's *Community Health Needs Assessment* (2013) and the *Community Health Improvement Initiative* (2014) confirm the relationship between health and community design. Creating neighborhoods where it is safe and convenient to walk, bike, or take transit between home, work, school, shopping, and recreation, offers an equitable choice to residents to increase physical activity on a daily basis, thereby potentially reducing health risks. Designing in this manner improves access to education, jobs, and services for those who are unable to drive and reduces the cost of transportation for families. Compact, walkable neighborhoods, when compared to patterns of low-density sprawl, reduce the need for costly expansion and maintenance of services and roads and protect the environment through reduced emissions.

The policy is implemented through actions for Housing, Transportation, and Shared Spaces.



5. Make Strategic Infrastructure Investments

New government investment should support growth areas and include priority projects as identified in Community Plans.

Funding at all levels of government (local, State, and federal) is becoming increasingly limited. Just like a family on a budget, government must live within its means. With this in mind, difficult decisions must be made as to how limited funds are spent. Infrastructure needs include parks, water, wastewater, solid waste, and transportation. Recognizing reduced funding, we must direct infrastructure investment as a means to direct growth to the areas most suitable for development. With economics as a key aspect of sustainability, establishing infrastructure investment priorities in alignment with our vision is essential.

This policy is addressed in the Implementation and Monitoring Chapter of the General Plan, and actions for each district.



6. Reduce The Cost of Living

Reduce the combined costs of housing and transportation, which consume more than 30 percent of the average household income. Do this by connecting housing to jobs and by providing a diversity of housing types and affordable transportation options.

Whether it is reflected in the cost of housing, food, or transportation, our community continues to struggle with the “Price of Paradise.” For example, according to the US Census Bureau 2014 ACS, 44% of all households are cost-burdened, with 55% of households with a mortgage and 50% of those households renting paying over 30% of their income to housing costs. Further, median households spend approximately 27% of their income on transportation. With employment wages relatively stagnant, coupled with the increasing price of basic necessities, actions must be aligned to provide better equity and accessibility to these primary needs.

This policy is implemented spatially in the Land Use Map and through actions for Housing, Transportation, and the Economy, and Opportunity and Health.



7. Build A Balanced Transportation System

Manage future congestion conditions in the major growth areas of Līhu'e and South Kaua'i through strategic infrastructure improvements and increased multimodal transportation options.

Past studies and efforts have demonstrated that trying to “build our way” out of congestion through a focus solely on road widening and construction of new roads is neither feasible nor sustainable, and threatens our unique rural sense of place. As an example, the *Federal Aid Highways 2035 Transportation Plan for the District of Kaua'i* (HDOT, 2014) identified \$3.1 billion in roadway projects for Kaua'i, with anticipated funding of \$630 million over the same timeframe. In other words, only 20 percent of the funding needed to complete all projects envisioned in the *Federal Aid Highways Plan* is anticipated to be available. The County's *Multimodal Land Transportation Plan*,

adopted in 2013, provides a balanced solution that addresses the needs of all land transportation users, including freight, cars, transit users, pedestrians, and bicyclists.

This policy is implemented through the Transportation Map and Actions for Land Transportation, and the Līhuʻe and South Kauaʻi districts.



8. Address Wailua-Kapaʻa Traffic

Improve traffic conditions along the Wailua-Kapaʻa corridor by implementing capacity and congestion management projects, including network and intersection improvements, and through careful management of residential growth north of the Wailua Bridge.

Community members have repeatedly highlighted congestion through the Kapaʻa-Wailua corridor as the County’s highest transportation concern. In addition, residents have expressed that transportation infrastructure has not kept pace with increased development through the corridor. For years, the County and State assumed the “Permanent Kapaʻa Relief Route”, a proposed six-lane highway mauka of the existing Kūhiō Highway, would resolve Kapaʻa traffic. Recently, the Hawaiʻi Department of Transportation determined that the Permanent Relief Route is neither financially nor environmentally feasible. In 2015, HDOT completed the *Kapaʻa Transportation Solutions* report to identify a combination of smaller projects that could be achieved and collectively could reduce congestion through the corridor. County and State cooperation to implement the highest-priority projects that contribute most to managing congestion through the corridor is necessary. At the same time, recognizing the community’s concern about continued growth that could worsen congestion, growth needs to be limited north of the Wailua River Bridge.

This policy is implemented spatially through the Land Use Map and through actions for Transportation and the East Kauaʻi district.



9. Protect Kauaʻi's Scenic Beauty

Protect the island's natural beauty by preserving the open space and views between towns.

Kauaʻi is home to distinctive natural views and landmarks that define Kauaʻi’s sense of place for residents and visitors. Mauka and makai scenic views of places such as Waiʻaleʻale, Kawaikini, Ke'e Beach, and Waimea Canyon need to be protected regardless of population growth, development, and other changes. Many of our natural landmarks also serve as important physical cues to help orient people at sea. Protecting our scenic beauty and natural landmarks will ensure that our island’s historical significance and unique identity will be preserved over time.

This policy is implemented through the Land Use Map and actions for Heritage Resources.



10. Uphold Kauaʻi as a Unique Visitor Destination

Protect the identity of Kauaʻi's visitor industry by focusing on revitalization and limiting new resort growth only to existing Visitor Destination Areas. Reduce visitors' impacts on infrastructure and communities.

Growth in the Average Daily Visitor Count leads to economic activity. However, with the advent of disruptive forces in our traditional notion of visitor accommodations (e.g. transient vacation rentals, house sharing), and the inability to restrict travel due to federal constitutional rights, any permitted growth in the visitor industry needs to consider the negative impact it can have on our infrastructure and our communities. Many areas like Hāʻena, Wainiha, and Hanalei have had their community character dramatically altered as a consequence of non-traditional visitor industry operations encroaching on their way of life. This impact has left Kauaʻi with sharp decreases in the amount of owner-occupied units and a clear increase in traffic during peak tourism seasons – impacts not sustainable to our island. With the tools that the county has at its disposal, legal methods of limiting the physical footprint of transient accommodation uses should be encouraged.

This policy is implemented through the Land Use Map, and actions for the Economy, Housing and Shared Spaces.



11. Help Business Thrive

Create and foster thriving commercial areas in Town Centers through improved infrastructure, civic space, streetscapes, updated zoning standards, and streamlined approval processes.

In order to provide equity and opportunity for all, a focus on job creation and economic growth is necessary. Historically, economic growth has centered around the tourism industry, leading to overuse of the rural and natural areas that make Kauaʻi a unique and beautiful place. Future economic growth should be encouraged at a micro-community level that supports existing town centers to become more vibrant hubs of commerce and promote opportunities for small businesses and cottage industries. Infrastructure, investment, and community-building efforts should be directed toward existing town center areas and provide ease of regulation for nascent enterprise.

This policy is implemented through the Land Use Map and actions for Shared Spaces, Heritage Resources, and Economy.



12. Help Agricultural Lands Be Productive

Support economic diversification and access to locally produced food by increasing the productivity and profitability of all forms of agriculture. Nurture small-scale farms, promote crop diversity, and form stronger public/private partnerships with farmers.

Increasing food and resource production supports self-sufficiency and economic development (jobs). The *Hawaiʻi Baseline Agricultural Study* (2015 UH Hilo/DOA) reported that only 21,494 acres of land on Kauaʻi are being used for agriculture (out of

approximately 136,908 acres within the State Land Use Agricultural District). Less than 1,000 acres of the lands in production are used to grow food crops, not including coffee.

Having a productive agricultural system not only involves having lands available for farming, but creating the mechanisms necessary to support vibrant agriculture. While Kaua'i's people may have different opinions on what type of agriculture should be allowed, increasing agricultural production is crucial for food, resources, and economic sustainability, as well as to the cultural heritage and identity of the island.

This policy is implemented through the Actions for Economy, and Opportunity and Health.



13. Protect Our Watersheds

Act with the understanding that forests, biodiversity, and water resources are fragile and interconnected. Restore and protect our watershed from mauka to makai.

The health of our island is the health of our community, and it starts with protecting our watersheds. The public has called the health of our watersheds into question, and the increasing threats of pollution and overuse are apparent. Recognition of our environment as a living system transcending land boundaries and physical walls should always be woven into our actions moving forward. Emphasis should be placed on actions that address the disproportional impacts of growth on our watersheds. Traditional approaches of land use and resource management promote our sense of place and also make environmental sense when seeking options that balance our growing community and the need to maintain healthy watersheds.

This policy is reflected spatially on the Land Use Map and implemented through Actions for the Watershed.



14. Complete Kaua'i's Shift to Clean Energy

Mitigate Climate Change and reduce system-wide carbon emissions by at least 80% by 2050 through deep reductions in energy use and by transforming electricity, transportation, and infrastructure systems toward the use of clean energy.

Kaua'i's shift to clean energy is in line with the goals of being a sustainable and resilient island. By doing our part to reduce greenhouse gas (GHG) emissions, we will help to prevent global average temperatures from rising. In 2007, Kaua'i contributed 1.2 million metric tons of carbon dioxide gases, which primarily came from the combustion of fossil fuels for electricity, ground transportation, and air transportation (*Hawai'i Greenhouse Gas Inventory, 2007*). Although Kaua'i is leading the State in generating local renewable energy production (approximately 40% of our electrical demand), there is still much work to do in reducing the GHG emissions generated from the transportation sector. In 2007, the transportation sector (including aviation) has accounted for over half of the GHG emissions in the State (*Hawaii Greenhouse Gas Inventory, 2007*).

This policy is reflected in the Actions for Energy Sustainability and Public Safety and Hazards Resilience.



15. Prepare for Climate Change

Prepare for impacts to the island economy, food systems, and infrastructure that will be caused by Climate Change.

Climate change and resulting sea level rise (SLR) are evidenced and documented on global, national, as well as local levels. While data forecasts are constantly changing, the best available data for our island report at least one foot of SLR by the year 2050. As an island with the majority of residences and activities located on or close to the coastline, it is important to provide direction to prepare our island for increased coastal hazards and their impacts to business, homes, roadways, drinking water, and ultimately health and safety.

This policy is implemented through the Land Use Map and Actions for Public Safety and Hazards Resilience.



16. Respect Native Hawaiian Rights and Wahi Pana

Perpetuate traditional Native Hawaiian rights and protect public trust resources and cultural sites in all land use development and activities.

For thousands of years the indigenous people of Kaua'i have refined systems for sustainable stewardship and collaboration that honored the island's beauty and bounty as well as one another. These principles are still alive today through the language, stories, dance, and ceremonies of our native people. Mālama 'Āina, or caring for the land, is ingrained within the fabric and language of Hawaiian culture. Also rooted within stories and traditions are the struggles and accomplishments of the Ka Po'e Kahiko, or the People of Old, valuing significance of place, the origins of things, safety, health, and cooperation. Our kanaka maoli o Kaua'i are a vibrant and integral foundation of our community, and their knowledge about the land and resources, how to care for one another, and customary gathering rights and traditions must be passed on to future generations. It is understood as a resident, native or not, that Nā Kanaka o Kaua'i are treasures to be respected.

This policy is implemented in the Heritage Resources Map and Actions for Heritage Resources.



17. Protect Access to Kaua'i's Treasured Places

Protect access to and customary use of shoreline areas, trails, and places for religious and cultural observances, fishing, gathering, hunting and recreational activities, such as hiking and surfing.

The beaches, mountains, and other natural areas of Kaua'i are cherished by its people for recreation, physical, mental, and spiritual rejuvenation, and family and cultural connections. In addition, many community members continue to provide for themselves and their families through subsistence practices – whether fishing, hunting,

or gathering of foods, materials and medicines – as it has been perpetuated for generations. Development pressures mauka and makai, as well as emergencies caused by visitors getting hurt in some of the places our residents otherwise known as kapu, threaten continued access to Kaua'i's most treasured places for fear of liability. Promoting collaboration, providing for local and visitor education, enforcing rules protecting access, and providing signage and wayfinding where appropriate perpetuate protection.

This policy is reflected in the Heritage Resources Map and implemented through actions for Shared Spaces and Heritage Resources.



18. Nuture Our Keiki

Value youth as Kaua'i's most treasured resource. Provide them with safe communities, great schools and facilities, and financially sustainable job, housing, and transportation opportunities so they are able to seek livelihoods on Kaua'i.

Kaua'i continues to see more births than deaths. However, the statistics also show the exodus of young people for greater opportunities. The loss of our next generation creates an unsustainable trend of population aging that could disproportionately cause economic and social issues over the long-term. Actions to promote education and economic opportunity are necessary to keep our keiki home.

This policy is implemented through Actions for Health and Opportunity, Economy, and Shared Spaces.



19. Honor Our Kūpuna

Prepare for the aging of Kaua'i's population through housing, services, and facility improvements that meet the needs of elderly households.

Kaua'i's population is aging. About one third of Kaua'i's population will be 65 and over in 2035. In comparison to the other counties, Kaua'i has a relatively high median age and a higher percentage of older adults.

Here on Kaua'i, we honor and take care of our kūpuna as they are the foundation to our families and to our communities. By supporting kūpuna-friendly communities, we will give our kūpuna the option to age in place and live an active and independent lifestyle. Many of our communities today are not conducive to an aging population because of zoning regulations that have separated neighborhoods and commercial uses to be accessible only by car. In preparing for an aging population, we must rethink our community design by including the needs of our kūpuna.

This policy is implemented through the Actions for Housing, Shared Spaces, Health and Opportunity, and Transportation.



20. Communicate with Aloha

Kaua'i's residents care about planning and decision-making. Government must share information, encourage input, improve public processes, and be responsive.

During the update process, community members and agencies have reflected on how implementation of the 2000 General Plan was monitored in order to determine accomplishments and challenges. Although there were many successes, feedback mechanisms and metrics were absent or not consistent.

Tracking the many actions that support the policies that help us to attain our goals for 2035 will take a thoughtfully crafted system with room to evolve. Establishing performance measures, monitoring progress, reinforcing accountability, and involving the community in the future of the island are integral to our success.

This policy is implemented through the "Implementation & Monitoring" Chapter of the General Plan.



Display of GP Vision at the Kaua'i Farm Fair, 2015



Actions are the measures that implement the General Plan's Actions and move us closer to our Visions and Goals.

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ACTIONS BY SECTOR

Throughout the public process, people repeatedly called for action, rather than mere policy development. Actions that implement policies can be tracked, measured, and offer accountability. In response to this input, the organization of this General Plan departs from previous plans by adding specific actions as part of policy implementation.

In identifying the actions, care was given to insure consistency with the island's overarching goals and the 20 derivative policies from the previous sections. The table on the following page illustrates the plan's cross-cutting approach toward weaving the common goals throughout the numerous actions while remaining true to the community's vision for the island.

The actions are organized into ten sectors, each with more specific sub-sectors:

- ▶ I. The Watershed
- ▶ II. Housing
- ▶ III. Transportation
- ▶ IV. Infrastructure and Services
- ▶ V. Shared Spaces
- ▶ VI. Economy
- ▶ VII. Heritage Resources
- ▶ VIII. Energy Sustainability
- ▶ IX. Public Safety and Hazards Resiliency
- ▶ X. Opportunity and Health for All

Land Use is an eleventh sector which is treated separately in Chapter 4. Four tools are used to categorize the actions, and they are also used to organize the Action Matrix in Appendix H. Each is described below.

Permitting Actions and Code Change

Actions within this tool address new development and how it is approved. Permitting actions will be reviewed during the approval process. Specifically, these approvals include State Land Use Boundary and County Zoning Amendments; and Zoning, Special Use, and Variance Permits. "Code Change" indicates items to be addressed in future amendments to development standards.

Plans and Studies

This section calls for preparing and updating future plans and studies. The General Plan is broad in nature and more detailed follow-up work is needed in many areas. This underscores the importance of future planning efforts and the need to align such efforts with the General Plan's direction.

Partnership Needs

In many cases, County jurisdiction to move actions forward is limited. Partners are non-county entities, including State and Federal agencies, non-profit organizations, community-based organizations, and the general community. Actions in this tool operate in the spirit of Kākou and "silo-breaking" to acknowledge that other agencies and organizations must help move the policies forward. Actions also identify areas where agencies and the community can collaborate in new ways.

Projects and Programs

Actions in this category identify priority County programs and capital projects and include guidance for project selection, design, and funding.

Table 2-1. Summary of Goals and Sectors

Sectors	SUSTAINABILITY Growing Responsibly	STEWARDSHIP Protecting Kaua'i's Unique Beauty	HEALTH & RESILIENCE Strengthening Communities	OPPORTUNITY Promoting Diversity & Equity
The Watershed	Ensure use and enjoyment of resources without depletion.	Protect natural, historic, and cultural resources in perpetuity.	Protect resources and traditions that promote self-sufficiency.	Promote equal access to natural areas and recreation.
Public Safety & Hazards Resiliency	Protect or relocate assets, develop outside hazard areas, and reduce greenhouse gas emissions.	Identify and protect those resources vulnerable to climate change.	Strengthen preparedness, response, and recovery to hazards and climate change.	Increase and diversify food grown and consumed on island.
Opportunity & Health for All	Foster shared responsibility for sustainable choices.	Protect residents' access to shoreline and recreational areas	Improve health aspects of natural and built landscapes.	Ensure widespread access to health care, education, and services.
Economy	Promote economic diversification and cross-sector convergences	Protect high-quality agricultural lands from development.	Partner to enhance education and employment opportunities	Provide infrastructure to strengthen and grow small business
Housing	Provide housing to accommodate growth within and near town centers.	Prevent housing sprawl into Open and Agricultural lands.	Provide housing for multi-generational families and aging in place.	Ensure affordable housing is provided in proximity to job centers.
Infrastructure & Services	Provide adequate infrastructure to accommodate growth.	Preserve natural areas by concentrating growth and services in existing developed areas.	Provide equitable access to safe and sanitary services and facilities.	Ensure low income communities have adequate facilities and services.
Energy Sustainability	Reduce fossil fuels and transition to renewables.	Encourage use of alternative fuel sources.	Promote clean energy from non-harmful sources.	Explore solutions to reduce energy costs to residents.
Shared Spaces	Provide adequate park facilities for resident and visitor enjoyment.	Protect popular destinations from deterioration and overuse.	Provide a diversity of facilities that support active lifestyles	Increase access to parks and recreation in all neighborhoods
Transportation	Promote multimodal shifts to reduce costs.	Decrease vehicle miles traveled to reduce carbon emissions.	Provide connectivity and safe routes to walk or bike to parks and schools.	Promote equal access to transportation.
Land Use	Concentrate growth within and adjacent to existing centers.	Protect open spaces between communities and scenic view planes.	Provide community gathering places and walkable neighborhoods.	Promote mixed-income and diverse communities with a range of housing.
Planning District Policies	Ensure that each district completes a Community Plan.	Identify elements of character and features to be preserved.	Celebrate community identity and provide gathering places.	Promote rural revitalization and provision of basic services.

I. THE WATERSHED

The health of Kauaʻi's watersheds, from ridge to reef, make all life possible. Yet our island's fragile watersheds are under threat, not just from human activities and invasive species, but from climate change.

Kauaʻi's 66 watersheds convey rainwater from mauka to makai, replenishing aquifers along the way. This water has shaped Kauaʻi over thousands of years, sculpting the Nā Pali Coast and Waimea Canyon while creating the coastal plains where human settlement occurs. Watersheds provide us with thriving forests, biodiversity, and clean and abundant water resources. However, the interconnected nature of watersheds means they are also fragile. Disruption in one area of the watershed will impact the overall environment. Therefore, watershed health is collectively determined and impacted by different landscapes, land uses, and owners or stewards.



Kawaikoi Stream, Waimea-Kekaha District

Threats to the Watershed

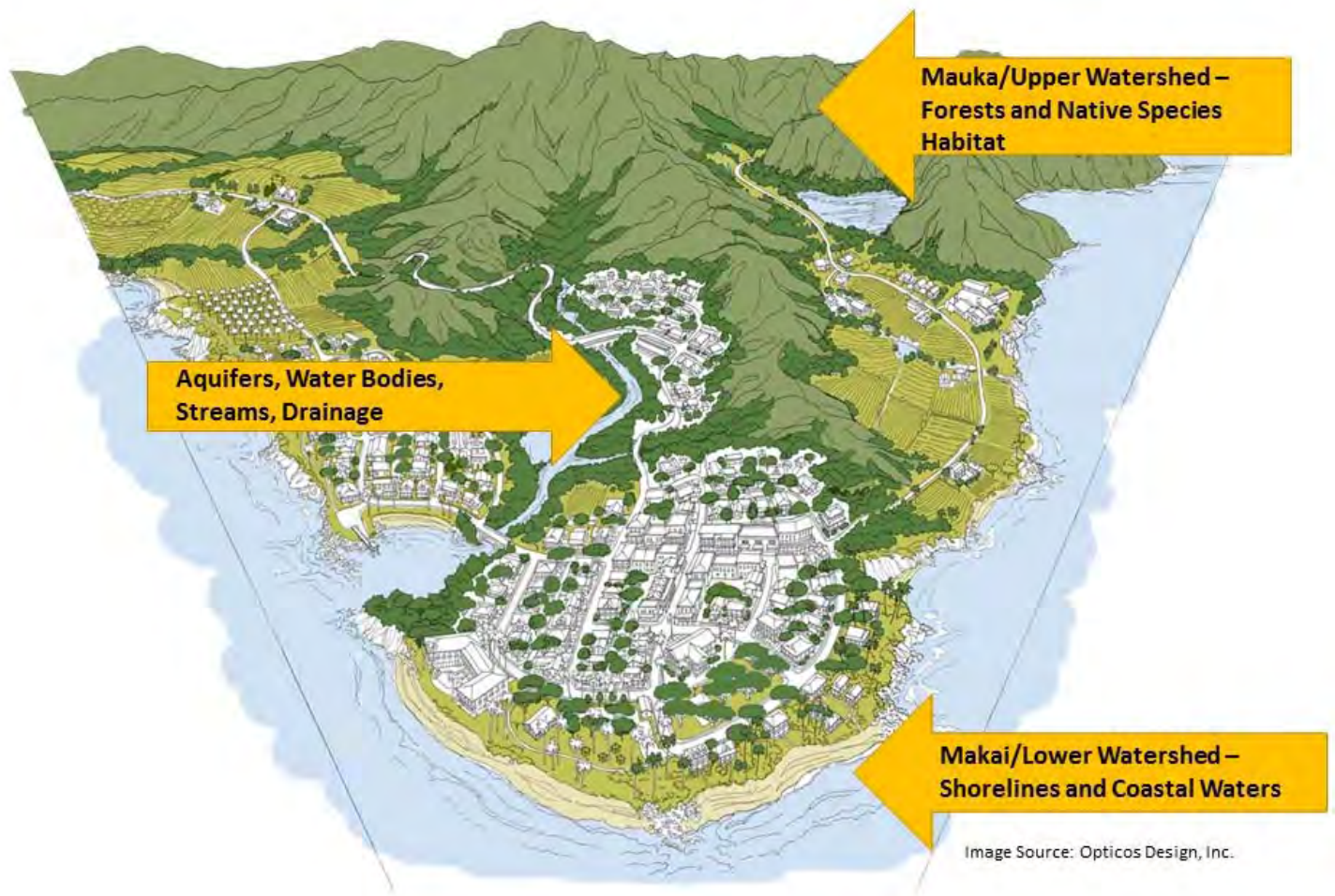
The growing resident and visitor population creates demands and pressures on watersheds. Threats include development, improper agricultural practices, invasive species, erosion of land and beaches, and natural hazards such as wildfires, hurricanes, and flooding. Furthermore, there is little doubt that climate change will impact watersheds in ways unprecedented in modern times.

Moving Toward Traditional Watershed Stewardship

Effective management requires both landscape-scale conservation and parcel-level mitigation of development activities. This requires a holistic approach to stewardship where human use and enjoyment of nature is balanced with resource conservation. Fortunately, Kauaʻi can look to its traditional system of land use and resource management – the ahupuaʻa system – as a model for cultivating a sense of stewardship.

Actions within sector address are divided into subsectors based on components of the watershed: Mauka/Upper Watershed, Aquifers and other Waterbodies, Shorelines, Coastal Areas, and Threatened and Endangered Species (See Figure 2-1).

Figure 2-1. Components of the Watershed Sector



A. Mauka/Upper Watershed – Forests and Native Species Habitat

The upper watershed and its forests are critical to the health and integrity of our Island ecosystem. The upper watershed provides essential services such as critical habitat, water protection, fire protection, and flood mitigation. Its fragility and interconnectedness require us to be careful stewards of these resources.

The State Role in Upper Watershed Protection

The vestiges of Kauaʻi’s native, endemic forests, and landscapes – found nowhere else in the world – must be protected, restored, and expanded. They provide the habitat for unique floral and faunal species, many of which are endangered or at risk.

Kauaʻi’s upper watershed is largely under State jurisdiction, both through ownership and by regulatory authority. The State Conservation District comprises 55% of Kauaʻi’s land area. Within the Conservation District, there are twenty-four State managed reserves, preserves, or park areas. These are shown on the Heritage Resources Maps included in Chapter 5.

The Department of Land and Natural Resources (DLNR) has responsibility for the Public Land Trust, including ceded lands and submerged lands. DLNR also controls and manages the forest reserves, natural area reserves, and state parks. The forests of the upper watershed harbor rare and endangered plant and animal species, and in some areas, such as the natural area reserves, the native ecosystem remains relatively intact. In 2011, the State launched a watershed management initiative called *“The Rain Follows the Forest.”* The plan seeks to sustain fresh water resources by doubling the amount of protected watershed areas.

All lands – even those that are inaccessible and actively managed by the State – need conservation. Erosion, invasive species, and air and water pollution have far-reaching impacts. The County can reinforce and add to natural resource protection through regulations such as in the Special Management Area (SMA) and the County Open Zoning District. County Actions that support restoration and protection of Kauaʻi’s upper watershed ecosystem include:

1. PERMITTING ACTIONS AND CODE CHANGES

- | | |
|---|---|
| <p>a. Review State Department of Land and Natural Resources (DLNR) Forest Reserve Plans when development is adjacent to Forest Reserves.</p> | <p>b. Update development standards to require best management practices for resource management.</p> |
|---|---|

2. PLANS AND STUDIES

- | | |
|---|--|
| <p>a. Support implementation of DLNR planning efforts by establishing an environmental liaison in both the Department of Parks and Recreation and Planning Department.</p> | <p>and share information regarding forest management activities with the public.</p> |
| <p>b. Utilize the Forest Reserve and Natural Area Reserve Plans in community planning processes</p> | <p>c. In planning for the watershed, acknowledge that wildfire prevention, the spread of invasive species, and water quality protection are interconnected.</p> |

3. PARTNERSHIP NEEDS

- a. Support the State's goal of doubling the amount of protected and managed watershed areas.
- b. Establish a watershed task force or watershed liaison within the County whose mission is to facilitate better communication and coordination between agencies and organizations that work in the watershed (County, State, non-governmental organizations), mauka to makai.
- c. Support the State DLNR Division of Forestry and Wildlife and the Kaua'i Fire Department in educating the public and visitors about native species protection, wildfire prevention, the spread of invasive species, and water quality protection.
- d. Increase opportunities for public access to forests in a way that is ecologically sustainable.
- e. Support and work with DLNR, private landowners, and other partners such as the Nature Conservancy and the Kaua'i Watershed Alliance to improve management and protection of Kaua'i's forest resources and upper watershed areas in the Conservation District.
- f. Support the establishment of ahupua'a councils, such as the Ahu Moku Council, to assist with watershed management issues.
- g. Promote education and enforcement campaigns to curb littering and dumping in forest areas. Educational materials should highlight the effects of these activities on water quality, wildlife, and enjoyment of nature. Consider providing trash and recycling receptacles near popular trailheads and picnic areas.

4. PROJECTS AND PROGRAMS

- a. Support projects that restore and protect our remaining endemic forests and landscapes in the upper watershed.
- b. Develop collaborative projects that support goals shared by the Forest Reserve Management Plans, County's Open Space Commission, Na Ala Hele Commission, the Kaua'i Watershed Alliance, and others.
- c. Develop a list of native plant species that may be used to landscape newly developed areas and public lands.

B. Aquifers, Water Bodies, Streams, and Drainage

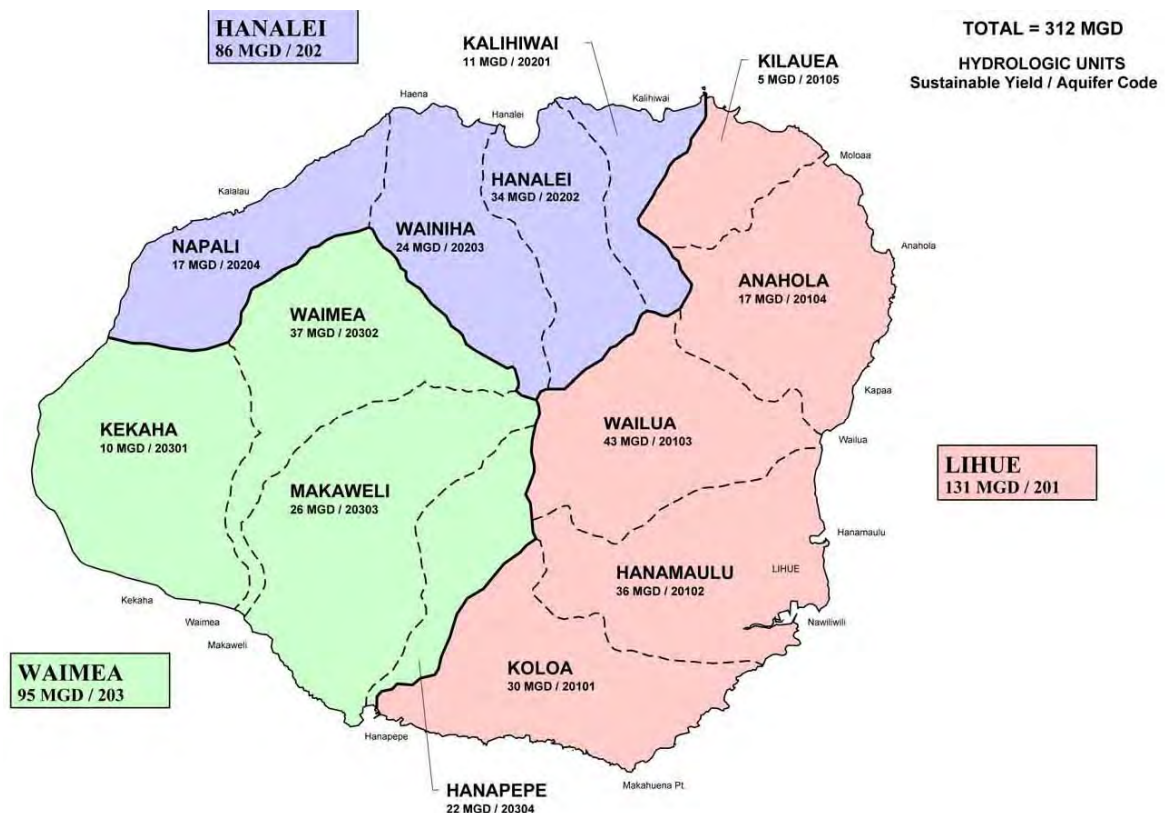
The rainclouds captured by Kaua'i's lofty peaks, such as Wai'ale'ale and Kawaikini, supply our perennial streams and restore the underground aquifers, upon which we all depend.

Understanding our Reliance on Aquifers

Kaua'i's aquifer supplies the vast majority of our domestic water and is divided into three sectors that comprise 13 systems (see Figure 2-2). The systems range in size from 68 square miles in the Makaweli aquifer system to 18 square miles in the Kilauea aquifer system. An estimated 312 million gallons per day (mgd) can be safely withdrawn from the aquifer. This is defined as its sustainable yield (*Water Resource Protection Plan*, 2008). Actual withdrawal is a small fraction of the sustainable yield. Total well production on Kaua'i is 14.37 mgd (*Adequacy of Future Infrastructure Analysis*, 2015).

KAUA'I'S AQUIFER SYSTEM CAN SUSTAINABLY PROVIDE AN ESTIMATED 312 MILLION GALLONS OF WATER A DAY.

Figure 2-2. Aquifer Sectors on Kaua'i

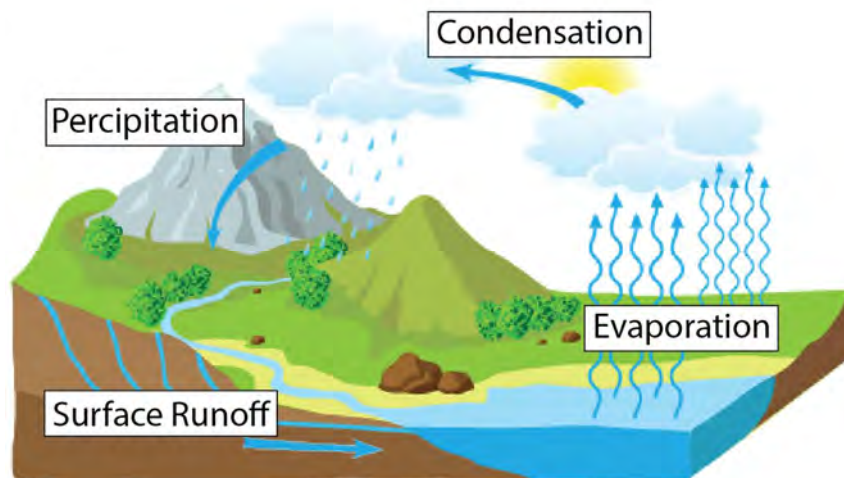


The aquifer is fed primarily through rainfall, which ranges an annual 20 to 400 inches across the Island. Groundwater recharge is also affected by evapotranspiration, agricultural irrigation water, and streamflow. Studies show that our aquifer sectors have ample water supply for the island (*Fukunaga & Associates, County of Kaua'i Water Use & Development Plan Update (unpublished draft); Technical Memorandum (May 2015 and Sept 2015 updates)*). Also, Kaua'i has no State-designated Groundwater Management Areas, which is another indication that existing withdrawals do not threaten sustainable yield.

While sustainable yield is adequate, the difficulty and expense of extracting and distributing water are limiting factors in providing water to service new development. In addition, groundwater levels are vulnerable to the combined effects of prolonged drought, withdrawals, and the reduction of agricultural irrigation, as has occurred in the Līhu'e Basin (*Effects of Irrigation and Rainfall Reduction on Ground-Water Recharge in the Līhu'e Basin, 2006*).

Kaua'i's groundwater quality is good, although certain aquifers are vulnerable to contamination due to their location and/or geological composition. On a remote island, there are no practical substitutes for groundwater as the primary source of domestic water. Our aquifers depend on continued recharge by seepage from rainfall and stream flows through permeable ground surfaces. In this respect, the quality and quantity of Kaua'i's groundwater relies upon the same policies and actions that protect watersheds, streams and water bodies, and reduce nonpoint source pollution. An illustration of the hydrologic cycle can be found in Figure 2-3.

Figure 2-3. Hydrologic Cycle



The County's Role in Water Quality Protection

Water quality protection is a collective regulatory responsibility involving all levels of government. Federal laws governing water quality and nonpoint source pollution management define specific standards that must be met to avoid sanctions. State government is the lead authority for carrying out Federal water quality mandates. The Department of Health oversees adherence to safe drinking water standards, and collaborates with the State's Coastal Zone Management Office to address nonpoint source pollution requirements. The State also has primary responsibilities for watersheds through DLNR's management of State Conservation District lands.

There are 17 impaired inland freshwater bodies and 23 impaired marine/coastal water bodies on Kaua'i (*State of Hawai'i Water Quality Monitoring and Assessment Report, 2014*). These numbers

have increased significantly from the 1997 data included in the 2000 General Plan. In 1997, there were only four impaired bays and five perennial streams that were targeted for water pollution controls and management. Several streams are newly listed because the sampling data of conventional pollutants has increased but others are included because their quality has decreased.

Nonpoint source pollution, commonly called polluted runoff, occurs when rainwater moves on the surface of the earth or through the ground carrying the pollutants it encounters along the way. This polluted runoff flows to drainage systems and ends up impairing streams and nearshore coastal waters. Significant pollutant types include sediments, nutrients, toxins, pathogens, litter, and debris. The consequences of nonpoint source pollution include: increased risk of disease from water recreation, algae blooms, fish kills, destroyed aquatic habitats, and turbid waters. Some polluted runoff is from natural sources, like soil eroding on steep slopes during heavy rain. Most, however, result from people's activities on the land.

The County's primary responsibilities for water protection are associated with its authority over Urban District land uses, County ordinances regulating construction activities, management of nine potable water systems, and its shared authority with the State for the Agricultural District. Most nonpoint source water pollution on Kaua'i is due to erosion from lower elevation development-related activities, such as agriculture and from grading, grubbing, and stockpiling. Potential runoff from these activities are regulated by County Government through its zoning and permitting authorities, such as the County ordinances for subdivision, flood control, drainage, and grading/grubbing/stockpiling.

Kaua'i's Perennial Streams and Instream Flow

Kaua'i has 30 perennial streams, or streams that consistently flow year round. Of this number, 21 (70 percent) were impaired in 2014, according to the *State of Hawai'i Water Quality Monitoring and Assessment Report* (2014). Historically, these streams were the pristine habitat for communities of native fish (o'opu), insects, and snails, but stream diversions and introduced species, such as guppies and swordtails, has led to the decline of many native species.

Water from many of Kaua'i's perennial streams was diverted during the Plantation Era for agricultural purposes. With the decline and abandonment of the plantation economy, the status of these historic diversions 15 are now in limbo. In order to determine the legal status of existing diversions, the State Water Code requires an understanding of a stream's in-stream flow. The development of in-stream flow standards (IFS) is a scientific process which will analyze hydrologic conditions and non-stream uses. Continued stream diversion and the lack of IFS, along with decreasing stream levels in some areas, are issues of concern for some communities.

Where development is concerned, buffers near our perennial streams should be implemented and green infrastructure should be encouraged to reduce non-point pollution.

Community Partnerships

Water resource conservation and protection can be further strengthened through community participation. Organizations and volunteers play significant roles in protecting vital water resources through partnerships with government agencies. Greater awareness of water resource issues helps drive attention and resources to address problems. Making Kaua'i's water quality everyone's kuleana ensures the greatest amount of vigilance to maintaining standards and preserving these irreplaceable resources for future generations (See Subsectors on Water and Agriculture in Chapter 2).

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Mitigate negative impacts to natural hydrologic features such as groundwater recharge areas, natural stream corridors, floodplains, and wetlands.
- b. Site and design development to preserve wetlands and streams and provide a riparian buffer area to prevent land disturbance and to filter runoff.
- c. Ensure that drainage systems in developed areas are properly sized, built, and maintained.
- d. Ensure that Good Agricultural Practices and other runoff reduction measures are addressed when reviewing agricultural grading permit exemptions. Specify best management practices as a condition of approving land use permits.
- e. Require best management practices as a condition of approving development permits.
- f. Reduce erosion and retain sediment onsite during and after construction.
- g. Require that new development avoid disturbance of natural drainage features and vegetation.
- h. Assist with State efforts to end driving on beaches, which degrades beaches and coastal resources and is a safety hazard for drivers and users of beaches.
- i. Review and update drainage regulations and the drainage constraint district to incorporate and encourage green infrastructure concepts.
- j. Design new development and communities to incorporate trees, rain gardens, green roofs, and other features that mimic natural systems to help reduce runoff and impervious surface areas.

2. PLANS AND STUDIES

- a. In Community Plans, include protection actions for streams and inland water bodies to prevent degradation of water quality and address non-source pollution.
- b. Establish a drainage system database to better understand the drainage network on Kauaʻi and to assist with water quantity and quality impacts.
- c. Periodically review County's flood control measures and plans using updated information and forecasts on climate change.

3. PARTNERSHIP NEEDS

- a. Collaborate with community groups and stakeholders to better manage water resources in a cooperative fashion, avoiding adversarial fights that can divide the community.
- b. Support partnership projects between the State DLNR Division of Conservation and Resource Enforcement (DOCARE) to discourage driving on beaches through community outreach with high schools, community organizations, and non-profits.
- c. Support the efforts of volunteer environmental groups, such as the Hanalei Watershed Hui and Kauaʻi Watershed Alliance, and encourage similar efforts to collectively manage and protect watershed environmental quality.
- d. Encourage, support, and participate in efforts by the State DLNR Commission on Water Resources Management (CWRM) to develop in-stream flow standards on Kauaʻi, with a focus on the existing project to develop standards for Southeast Kauaʻi.
- d. Support programs to maintain stream flows by periodically removing excessive debris and vegetation from stream channels and beds that can impede drainage.
- e. Work with State and non-governmental organizations on a strategy to establish a water quality monitoring program for Kauaʻi's coastal and inland waterbodies, such as an operational ground water-level monitoring network and a stream monitoring network, to ensure compliance with instream flow standards.

4. PROJECTS AND PROGRAMS

- a. Implement green infrastructure concepts for projects in the Six-Year Capital Improvements Program (CIP).

C. Makai/Lower Watershed – Shorelines and Coastal Waters

Protecting and preserving Kauaʻi's lower watershed is essential to sustaining the island's natural environment, our communities, and our way of life. The lower watershed is where most of our residents and visitors live, work, and play. At the same time, it is threatened by natural processes, human-caused impacts, and the forces of climate change.

These significant pressures upon our lower watershed areas could dramatically alter sensitive ecosystems and result in irreversible environmental damage if not confronted and avoided or mitigated. We must urgently and comprehensively address these threats because our forests, biodiversity, and water resources are fragile and interconnected. Kauaʻi's extraordinary environment must be sustained.

Kauaʻi's Unique Coastline

As the oldest of Hawaiʻi's inhabited islands, centuries of erosion have shaped Kauaʻi's dramatic coastline. There are stark contrasts along the island's 90 miles of general coastline, ranging from the steep cliffs of the Nā Pali coast on the North Shore to the silty low-lying wetlands of the Mana Plain on the Westside. While Kauaʻi has only 12% of the State's coastline, we have more than one-third of its beach sand (*DBEDT State Data Book, 2015; Kauaʻi Climate Change and Coastal Hazards Assessment, 2014*). The north and east coasts of the island have shallow fringing reefs, while the reefs on the west and south sides are less continuous.

Coastal Areas as Critical Habitats

Kauaʻi's coastal waters and shorelines support a wide range of terrestrial and marine species. These include endangered species such as the Hawaiian Monk Seal, Hawaiian Hoary Bat, Humpback Whales, and three of the seven endangered species of sea turtles. Much of Kauaʻi's coast has restrictions and regulations designed to protect these and other species and sensitive habitats. They include the Humpback Whale National Marine Sanctuary, the Nā Pali Coast State Park along the North Shore, Native Hawaiian salt production areas near Hanapēpē, the Mana Plain Wetland Restoration Project, and the Hāʻena Community-Based Subsistence Fishing Area. The entire coastline is subject to Special Management Area (SMA) permit provisions for any proposed development under the State's Coastal Zone Management (CZM) program.



Endangered Hawaiian Monk Seal resting at Keālia Beach, East Kauaʻi District

Confronting Threats to Fragile Coastal Ecosystems

Kauaʻi's coastal areas are susceptible to environmental damage due to both natural and human-caused impacts, including resorts and commercial uses that occur along the coasts. Approximately 20% of Kauaʻi's residents live close to the shoreline. Human impacts, combined with naturally occurring forces such as erosion, flooding, and the increasing impacts associated with climate change, cause negative impacts on coastal regions.

The protection of Kauaʻi's coastal waters focuses on near shore water quality and the health of the island's coral reefs. Both are susceptible to runoff of sediment from land-based forces and activities, such as erosion, flooding, disturbance of vegetation and landforms, and pollutants generated from agriculture, businesses, and residents.

Kauaʻi has the longest stretches of beaches in the Hawaiʻian Islands, yet approximately 70% of them are being eroded. Our island lost an estimated four miles of beach over the past century (*Climate Change and Coastal Hazards Assessment*, 2014). Humans contribute to erosion through construction of seawalls and revetments. Shoreline hardening and protection structures have been discouraged in recent years as they exacerbate loss and narrowing of beaches; however, armoring still covers about 10% of Kauaʻi's shoreline. Aggravation of natural forces by climate change like sea level rise, high wave events, hurricanes, and extreme tidal events will likely cause additional beach erosion.

The health of Kauaʻi's coastal areas are closely linked to quality of life on Kauaʻi, as is access to those areas. Coastal resources are a large part of both Kauaʻi's tourism and its subsistence economy. This requires policies and actions that help retain and improve the valued characteristics of coastal areas, including their water quality, beaches, views, and recreational features. The island's marine environment is dynamic and has experienced substantial change in the past, from slow-moving and gradual forces like beach erosion to swift and dramatic forces such as hurricanes and tsunamis. While nature will take its course, effective planning policies and actions can prevent or minimize many negative impacts to Kauaʻi's coastal areas and help preserve them for the species that depend on them for survival, as well as for current and future generations to enjoy.

**COASTAL EROSION ON KAUAʻI IS LIKELY TO
DOUBLE BY 2050.**

Addressing the Uncertainty of Climate Change

Climate change poses a unique set of challenges. While the exact degree and pace of climate change is uncertain, there is substantial certainty that it will impact Kauaʻi's coastal areas in significant ways. Best available scientific forecasts suggest planning benchmarks of at least one foot of sea level rise on Kauaʻi by 2050, and three feet by 2100.

DLNR has already documented coral bleaching in several locations due to warmer ocean temperatures. Additional ocean warming and acidification, along with more runoff from changing rainfall patterns, will likely cause additional impacts to Kauaʻi's coastal waters and shorelines.

Future sea level rise and changes to ocean temperatures and/or acidification could have significant impacts on coastal water habitats. Sea level rise will impact different types of coastal habitats, including intertidal areas, wetlands, estuaries, lagoons, tidal marshes and flats, and tidally influenced streams and rivers. Inundation and erosion may reduce existing habitats, or convert them into different types of habitats. It will cause shorelines to migrate inland, moving sediment-rich backshore areas along with them. If coastal development impedes that migration, this sediment could be eroded, impacting coastal water quality and beaches. Wetland areas that play a vital role in filtering water flow to the ocean will

also be affected by sea level rise or climate change. While new wetlands may form (if unimpeded by development), any loss to existing wetlands will lead to degradation of coastal waters near them. Increased coastal inundation could also transport additional pollutants from agricultural or industrial areas, or from sewage treatment facilities near the coast. Sea level rise may also alter the environment where traditional salt harvesting is done, such as along the coast near Hanapēpē.

Fish species in shallow water, inter-tidal, and sub-tidal saltwater aquatic habitats could be impacted in several ways. Changes to the extent of these ecosystems could reduce or increase certain populations of fish. Changes to the levels of pollutants and/or water salinity in these ecosystems could also have substantial impacts on the health and numbers of individual species. Coral reefs may be able to grow higher to adapt to rising sea levels, provided they are not impaired by impacts from bleaching, excessive sedimentation, or other factors that might limit their growth.

Actions Needed to Sustain the Lower Watershed

Kauaʻi's coastal waters and coral reefs support a wide range of activities, including traditional harvesting and subsistence practices, recreation, trade and commerce, and tourism. Our ability to preserve and protect these resources will require deploying a combination of policies and actions that minimize known impacts, and that anticipate and respond to future impacts due to climate change.



View of shore from Hanalei Pier, North Shore District

Shoreline areas warrant special consideration in resource and land use planning. They are highly valued and appreciated for a wide range of uses by residents and visitors, and their scenic beauty is world-renowned. The Hawaiʻi State Constitution establishes public access rights to the shorelines and ocean, which must be preserved in land use decisions. Use of the beaches and access to coastal waters are essential for fishing and gathering activities and for preserving traditional Native Hawaiian ways of securing food and sustaining connections with the land and ocean. Shorelines, especially those with sandy beaches and scenic views, are also highly desirable locations for resorts, hotels, and homes.

1. PERMITTING ACTIONS AND CODE CHANGES

- a.** Minimize coastal hazard risks through planning and development standards that:

 1. Ensure the safety of individuals, families, and communities;
 2. Discourage development or redevelopment within hazardous areas, while preserving adequate space for expected future growth in areas located outside these areas;
 3. Minimize hazard risks to new development in hazardous areas over the life of authorized structures if avoidance of the hazard is unavoidable;
 4. Ensure property owners assume the risks associated with new development in hazardous areas;
 5. Limit development near vulnerable water supplies; and,
 6. Manage water supply issues resulting from saltwater intrusion, such as limits on groundwater withdrawal or diversification of water supplies.
- b.** Avoid or minimize coastal resource impacts through development standards that:

 1. Protect public beach, rocky coasts, dune, wetland, river, and stream resources in all coastal planning and regulatory decisions.
 2. Protect the quality of coral reefs through standards that address, prevent, and minimize impacts from development.
3. Minimize impacts to view corridors from roads or public places to the ocean, and from mauka to makai.
4. Preserve and protect Kauaʻi's sandy beaches and shorelines from erosion and degradation while ensuring continued public access to them.
5. Ensure adequate parking and convenient public access to coastal lands in all zoning and subdivision permits.
- c.** Promote strategic beach nourishment in public use areas.
- d.** Seek to preserve natural beach processes over the construction of shoreline protection structures.
- e.** Do not allow permanent armoring of the shoreline.
- f.** Include the following guidelines for coastal development in the CZO:

 1. For resorts and other multi building complexes, transition from low building heights along the shoreline to taller buildings on the interior of the property.
 2. Provide an open, vegetated visual buffer between the shoreline and buildings.
 3. Protect community accessways laterally along the coast in the

- buffer zone mauka of the shoreline.
- 4. Maintain existing stands of trees or plant trees within the buffer zone to provide sun and wind protection and to moderate the appearance of large buildings.

- g. Review the Shore Districts article of the CZO in relation to the Special Management Area (SMA) regulations.
- h. Continually incorporate new information on climate change into shoreline policies and regulations.

2. PLANS AND STUDIES

- a. Develop, inventory, and record all coastal beach accessways.
- b. Develop detailed Hazard, Risk, and Vulnerability Assessments in low lying coastal areas based on future data and forecasts regarding climate change. Use this assessment to identify where resources and planning efforts should be focused and to develop adaptation strategies.
- c. Recognize scientific uncertainty by using scenario planning and adaptive management techniques
- d. Incorporate new information on climate change into planning policies and regulation as it becomes available.
- e. Analyze options and criteria for relocation of development outside of hazardous areas along the coast and incorporate findings into a long-term relocation plan.
- f. Support studies to assess impacts to coastal and cultural resources at Salt Pond Beach and Pu'olo Point.

3. PARTNERSHIP NEEDS

- a. Improve management of local marine resources through community-based management strategies.
- b. Support the creation and implementation of community-based subsistence management activities, such as the Hā'ena Community-Based Subsistence Fishing Area.
- c. Acknowledge, support, and participate in government, university, and private efforts to better understand and predict climate change impacts on coastal areas.
- d. Work with the State to develop a comprehensive beach management strategy to address loss of beach areas due to sea level rise.
- e. Develop a local financing plan for beach and dune restoration activities.

- f.** Encourage partnerships with citizen groups to take responsibility for water resource monitoring and protection with State and County government.
- g.** Restore lost and unrecorded beach access by identifying, recording, and demarcating accessways for public use.
- h.** Adequately fund and utilize the Public Access, Open Space, and Natural Resources Fund to actively acquire shoreline lands and accessways for public use and consider development of an “Offer To Dedicate” (OTD) Coastal Easement or Land Banking Program.
- i.** Adopt tax policies favorable to public shoreline access.



Nā Pali Coast State Park, North Shore District

D. Threatened and Endangered Species

Kaua'i is a global hotspot for biodiversity. Biodiversity allows ecosystems to function and thrive, and its loss negatively impacts water supply, food security, and resilience to extreme events. Kaua'i has experienced a dramatic loss of animal, plant, and marine species in modern times. This is a statewide trend which has earned Hawai'i the dubious honor of "Endangered Species Capital of the World."

Our Natural Heritage

As the oldest and most isolated of the eight main Hawaiian islands, Kaua'i's unique geological and climatic conditions host hundreds of plants and animals that are found nowhere else, including over 140 plant and animal species that are on the Federal registry of endangered species. Among these numerous endemic species are several threatened and endangered birds, such as the 'Ua'u (Hawaiian Petrel), 'A'o (Newell's Shearwater), and Nēnē (Hawaiian Goose), as well as six forest birds that are found nowhere else on earth.

Since arriving nearly 2,000 years ago, humans on Kaua'i have depended on the natural world to survive and thrive. However, with increasing populations and modern technology, the relative balance that earlier people had with their environment has deteriorated. Currently, many species are threatened by habitat reduction and disturbance, predation, overexploitation, and other human-introduced dangers. Without educated decisionmaking about how we expand and grow, wildlife will suffer. Already, human presence has caused over half of species that existed here in pre-colonization times to become extinct. It is our responsibility to ensure that we provide for the continued presence of the remaining 50%. Preservation and protection of the growing number of endangered species on Kaua'i requires a comprehensive approach through a wide range of direct and indirect measures to ensure our natural legacy endures.

As we plan for our island's future and how we intend to use its resources, we need to make sure we do so in a way that does not further impact the other things that have been living here before our arrival. Because resources such as land and water are more limited, islands like Kaua'i are particularly vulnerable to changes we make to its environment.

Invasive Species

Invasive species threaten our environment, economy, agriculture, human health, and quality of life. Invasive species generally reproduce quickly, and are able to spread from their initial intended area.

In addition to the dangers of overexploitation of resources and destruction of habitat, a major threat to the native life on Kaua'i comes from the introduction of foreign species to the island's ecosystems. Invasive species represent a constant and evolving threat to Kaua'i's environment – particularly to the island's already vulnerable endangered species. Brought here largely through trade and commerce following Western contact, these new additions have been able to thrive in large part due to the substantial changes that people have made to Kaua'i. If left unchecked, invasive species can easily thrive and multiply in Kaua'i's hospitable environment, out-competing native life and jeopardizing its future.

Expanding global trade and travel, climate change, and unpredictable biological evolution are major factors driving the introduction and establishment of invasive species. Prevention, containment, and eradication of invasive species require persistent and coordinated attention by all levels of government and cooperation by businesses and the community. Port of entry controls are a critical method for preventing introductions of invasive species. Airport and harbor inspections must occur regularly to prevent new threats from gaining a foothold on Kaua'i.

Efforts to date have thus far prevented ecologically destructive invasive species such as snakes, mongoose, the varroa mite, coqui frogs, and little fire ants from establishing lasting footholds on Kaua'i. Other invasive species such as miconia and feral cats are established on the island and require effective management and containment strategies to minimize their impacts. Feral cats are also a public concern as they carry toxoplasmosis, a disease that enters the water supply from cat feces and has been documented to kill marine animals such as the endangered Hawaiian monk seal.

1. PERMITTING ACTIONS AND CODE CHANGES

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|---|---|
| <ul style="list-style-type: none"> a. Avoid development or land use intensification on critical habitats and in areas that are essential to the health, safety, and life of vulnerable native species. b. Develop and adopt landscape guidelines that require non-invasive plant species to landscape newly developed areas, public lands, and roadways in ways that are consistent with recommendations of conservation agencies. c. Require future development to address potential impacts on threatened or endangered flora and fauna: <ul style="list-style-type: none"> 1. Evaluate potential loss of habitat. 2. Identify all endangered and threatened species present. 3. List minimization efforts. 4. If mitigation is needed, join an established Habitat Conservation Plan, or develop one. | <ul style="list-style-type: none"> d. Encourage new development to implement voluntary actions to encourage a net gain in protection efforts of our threatened and endangered species. e. Develop construction activity protocol to minimize risks to threatened and endangered species. f. Adopt a comprehensive animal control ordinance to reduce or eliminate populations of feral, abandoned, and stray cats. g. Develop a protocol that will help minimize the current feral cat population to lessen the impacts of direct endangered species fatalities, as well as the spread of diseases, such as toxoplasmosis. h. Improve enforcement of endangered species regulations relating to protected areas and listed species. |
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2. PARTNERSHIP NEEDS

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|--|---|
| <ul style="list-style-type: none"> a. Support predator-proof fencing and new technology to protect endangered species from human developments impacting their natural behaviors. b. Support efforts to complete and implement native species Habitat Conservation Plans, such as the | <p>Kaua'i Seabird Habitat Conservation Plan and the Kaua'i Nēnē Habitat Conservation Plan, which address legal issues regarding human-wildlife interaction while allowing for permitted economic development and growth of business and industry.</p> |
|--|---|

- c. Work with State and non-profit entities to protect and restore forest bird corridors, seabird flyways, waterbird habitat, and areas of Monk Seal loafing.
- d. Support KIUC in implementing new technology to prevent seabird deaths from lights and powerlines.
- e. Support collaboration between the County, the US Fish and Wildlife Service, DLNR, and community organizations for education relating to protection of native birds.
- f. Promote greater protection of Kaua'i's native flora and fauna biodiversity by reducing the threats of invasive species:
 - 1. Rapidly identify and address invasive species on County lands and coordinate with other public and private landowners to control sources of invasive species.
 - 2. Track invasive species and focus attention on the most damaging persistent and emerging invasive species from other islands in Hawai'i that have not yet become established on Kaua'i.
 - 3. Collaborate with State and local partners such as the Kaua'i Invasive Species Committee on comprehensive biosecurity strategies for the ports of entry to prevent non-native invasive species, such as the mongoose, from being established on Kaua'i.
 - 4. Support State, County, and nonprofit organization efforts to control invasive species to identify and address invasive species on County lands and coordinate with

other public and private landowners to control sources of invasive species through the work of DLNR, the Hawai'i Invasive Species Council (HISC), the Kaua'i Invasive Species Committee (KISC), the Kaua'i Watershed Alliance (KWA), and others.

- 5. Increase public awareness of specific invasive species threats through both targeted and wide-scale campaigns, as appropriate to the nature and geographic extent of individual threats. Focus attention on what's at stake and who to contact for invasive species detections.
- g. Consider acquiring shoreline areas that could serve as refugia for species impacted by sea level rise or areas that could be appropriate sites for coastal habitat creation or restoration.
- h. Maintain communication between the public and conservation agencies and organizations to deliver news, updates, and reports on the status of current initiatives and changes in protocols.
- i. Work with State and Federal agencies to design and install informative signage informing motorists and pedestrians about the presence of threatened or endangered species in wildlife hazard zones and during yearly times of increased danger.

- j.** Utilize such tools as conservation easements and partnerships with land trusts to acquire natural areas and promote mitigation banking.
- k.** Promote protection, restoration and identification of critical habitats for our native, threatened, and endangered flora and fauna through the following actions:
 1. Regularly evaluate and update a database listing environmental resources sites.
 2. Identify specific areas of habitat across the island that are in need of more heightened protection and/or restoration.
 3. Protect and restore existing wetlands that serve as critical habitats for existing species.
 4. Require developers and land-users to provide a protection buffer around existing habitats and wetlands.
 5. Encourage more reforestation and native flora out-plantings across the island to help increase and enhance habitats.
 6. Preserve and establish connectivity between existing habitats and critical areas of interest.
- l.** Support the State Department of Agriculture in acquiring funding for more inspectors to review shipments that may contain invasive species.
- m.** Support public education about County pet ordinances and safe animal housing rules and the hazards posed to birds and other vulnerable species from terrestrial predators.
- n.** Develop a program that offers voluntary mitigation activities to any new (or current) developments that want to help promote the State's endangered species legislation (Chapter 195D) that seeks a net gain in the recovery of Hawai'i's threatened and endangered species.
- o.** In schools, develop programs that improve education and awareness of:
 1. The role of native species and the importance of biodiversity in Hawai'i.
 2. Projects that support invasive species eradication and protection of endangered and threatened species.
- p.** Partner with the land managers to enhance the current level of interpretation within our protected areas to promote more education of our natural areas and their flora and fauna.
- q.** Support Federal and State efforts to protect endangered species through programs, including but not limited to the Mana Plain Wetland Restoration Project, Kīlauea Point National Wildlife Refuge, Kauaʻi Endangered Seabird Recovery Project, and Kauaʻi Forest Bird Recovery Project.

3. PROJECTS AND PROGRAMS

- a.** Increase wildlife and habitat protection knowledge and expertise within the County government.

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II. HOUSING

It is no surprise that housing on Kaua'i, one of the world's most desirable islands, is not cheap. However, declining affordability for locals has reached a crisis level with far-ranging social impacts. Home prices exceed 300% of the national average and affordable market rentals are few and far between. New development and an inclusionary zoning ordinance have not improved the situation. At the household level, housing costs cause stress, reduce disposable income, and limit transportation options. These impacts are felt community-wide. They contribute to a stressed local economy, and frayed social fabric. The complexity of the housing crisis must be addressed on multiple levels if Kaua'i is to achieve its vision and become a place where housing for all ages and income levels is located close to work and recreation, and is integrated into all communities.

Understanding the High Cost of Housing

Many complex factors drive housing costs. These include slow inventory growth, off-island demand, limited developable land, a lengthy entitlement process, and high infrastructure and construction costs. Compounding the problem is population growth that continues to out-pace housing supply. Since 2000, Kaua'i's population increased by over 10,000 and yet only 5,000 units were added to the housing inventory between 2000-2014 (ACS *Housing Snapshot*, 2014). Given that there is a current deficit of 1,400 housing units, meeting the projected demand of approximately 9,000 homes by 2035 will be challenging (see Figure 2-4).

The off-island market, willing to pay a premium for Kaua'i property, is another factor. Recent major development on residential-zoned land, such as Kukui'ula and Po'ipū Kai, take advantage of this market. Between January 2008 and September 2015, 45% of homes sold were purchased by mainland and foreign buyers (*Measuring Housing Demand in Hawai'i 2015-2025*, 2015). High costs are also a product of a long and uncertain entitlement process, which often requires discretionary approval at both the State and County levels. The roads, water, and wastewater infrastructure needed to service new communities are largely funded by the development itself, which necessitates high sales prices.

Changing the Residential Development Paradigm

New market construction may have increased housing inventory but it has not produced the range of housing needed to serve Kaua'i's workforce. Over eighty percent of residential development is single-family construction that occurs on Agriculture, Open and R-1 through R-4 zoned land. This has exacerbated Kaua'i's low-density development paradigm, where new single family homes sell upwards of \$800,000. In order to confront the housing crisis, public and private sectors must work together to increase housing inventory that will be affordable to residents.

Moving Forward on All Fronts

The solutions needed to stem the housing crisis will not come easily nor swiftly. Many factors are out of government control, such as off-island demand and high land and construction costs. However, major changes to the regulatory process can support inventory expansion through affordable housing projects, more infill housing, and the development of new walkable communities in designated growth areas. Also required are strong partnerships and special consideration for agricultural worker housing, Hawaiian Homesteads development, elderly housing needs, and houselessness.

Figure 2-4. Kaua'i's Housing Crisis

Our Housing Crisis

¹ Measuring Housing Demand in Hawai'i, 2015-2025

² Kaua'i Board of Realtors data, February 2015

³ Kaua'i Socioeconomic Analysis and Forecasts, February 2014

⁴ Kaua'i Rental Housing Study, 2014

⁵ Housing Snapshot, ACS 2014

\$730,000
Median Home Price on Kaua'i ²



Cost-burdened households (>30% of HH Income spent on rent or mortgage)⁵



Homes purchased by mainland and foreign buyers¹



A. Affordable Housing

Affordable housing refers to those projects funded through County support, Federal tax credits, and/or imposition on developers. In other words, government and the developer, usually in partnership, bear the development costs to house individuals and families unable to obtain market-rate housing. Although such projects alone will never fill the housing gap, they are essential to providing a safety net and serving those most at need. Increases to the affordable housing inventory are desperately needed.

The Need for and Challenge of Affordable Housing Mandates

In 2008, Kauaʻi passed its first affordable housing ordinance, also known as inclusionary zoning. It requires developers to construct approximately 30% of their project as affordable housing. Similar mandates have been put in place as conditions of State Land Use District boundary amendment approvals or long range plans, such as the Kīlauea Town Plan. However, the mandates have not produced any affordable units since its adoption. Many developers express concern that such mandates only delay development and housing inventory



Single Family Housing in Līhuʻe Town

growth, thus compounding the problem they are meant to solve. At the same time, the community does not support removing such requirements altogether. A more balanced approach is required and carefully crafted amendments to existing laws must be implemented if the desired result is production of affordable housing by the private sector.

Supporting County-Led Affordable Housing Programs and Projects

The Kauaʻi County Housing Agency implements a variety of programs designed to promote homeownership, expedite the permitting of affordable housing production, and offer loans to purchase or rehabilitate housing. Sources of funds that are potentially available to address housing needs include: Low-Income Housing Tax Credits, HUD Housing Choice Vouchers, HOME and CDBG block grant programs, U.S. Department of Agriculture Rural Development programs, private foundations, State CIP funds, and County Bond funds. Federal funds are very prescriptive in terms of household income categories served. In contrast, locally-established and funded programs can be customized to serve those who fall between the Federal programs and market-rate units.

Through active partnerships with landowners and affordable housing developments, the Housing Agency has helped move forward several 100% affordable housing projects in Līhuʻe, Hanamāʻulu, Princeville and Kōloa – constructing over 300 affordable rental units since 2000. A new initiative underway is the Lima Ola Housing Project. This is a master planned community that will provide over 400 affordable units in Eleʻele. In addition to moving forward with Lima Ola, the County should acquire land with access to transit, water, and wastewater service for future project development.

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Increase the supply for affordable rental and multifamily housing and amend the Housing Ordinance to remove substantial impediments to

new affordable housing development.

- b.** Locate future public housing projects in or near existing job centers so travel times and transportation costs can be reduced.
- c.** Support economically integrated communities by requiring affordable housing mandates to be met on site.
- d.** Amend Ordinance 860, Workforce Housing, to incentivize the creation of affordable housing development.
- e.** Preserve existing affordable housing stock.
- f.** Seek opportunities and funding to design affordable residential projects with civic spaces, shade trees, and pedestrian/bicycle amenities to enhance livability, equity, and safe transit options, especially for children.

2. PLANS AND STUDIES

- a.** Explore ways to expand and preserve existing affordable housing stock, such as through rent stabilization or rent control policies.
- b.** Amend existing affordable housing requirements in plans and zoning amendments if they are substantial impediments to housing creation.
- c.** Continue to prepare and adopt the five-year Consolidated Plan and one-year Action Plans which assess the County's affordable housing needs and serve as community forums to identify housing priorities.
- d.** Complete a study to establish ratios for different categories of housing for workforce, elderly, and disabled and use this information to amend the Housing Ordinance and other plans as needed.

3. PARTNERSHIP NEEDS

- a.** Partner with public and private organizations to provide the highest level of housing and community development assistance possible.
- b.** Develop a locally funded program customized to provide affordable housing to those who fall between the Federal programs and market-rate units.
- c.** Establish a Community Land Trust.

4. PROJECTS AND PROGRAMS

- a.** Complete the Lima Ola Housing Project.
- b.** Seek and acquire new land in or near town centers with access to transit, public water, and sewers for future affordable housing development.
- c.** Continue to use the Housing Revolving Fund to finance projects.
- d.** Encourage qualified owners and developers to seek awards from the Rental Housing Revolving Fund through the Hawai'i Housing Financing and Development Corporation in order to develop and rehabilitate affordable housing.

- e. Continue applying for and utilizing the Federal Housing Assistance Payments Program (Section 8) to support the housing needs of low income households.
- f. Support a flexible planning process and robust monitoring system to allow timely changes in strategy and resource allocation for the housing program.
- g. Create dedicated sources of funding to meet affordable housing needs over the long term.
- h. Create low-interest loan programs to purchase, expand, or rehabilitate homes on Kauaʻi.
- i. Develop a quasi-public housing development agency to support affordable housing projects, particularly infill housing development projects within town centers.



Affordable Housing in Hanamāʻulu, Līhuʻe District

B. Infill Housing

Infill development, or housing located within existing communities, can expand our housing inventory without consuming precious open space. It is also less expensive than “greenfield” development because it is closer to existing infrastructure and services. Infill housing has the potential to play an important role in meeting future housing needs, but only if the zoning, infrastructure, and built environment can support a higher density environment. It should also be appropriately scaled to the character of individual towns.

Countering the Threat of Residential Sprawl

Decentralized development or residential sprawl onto agricultural and open-zoned land erodes our rural character and town centers. Such development requires automobile dependence, which burdens our limited road network. It also incurs a greater cost per household for infrastructure and services. Expansion of this type of development will run counter to an environmentally and fiscally sustainable future. It also undermines the goal of preserving agricultural lands and the open spaces that separate towns.

Supporting Infill Development and “Missing Middle” Housing

Focusing new development in existing towns will allow growth to leverage existing physical and social infrastructure while helping preserve vital open space. This alternative fosters town centers that support infill housing and mixed use environments. For example, town centers should be centered on functional and attractive shared spaces where people can live, work, and play in the same area. Priority infill areas include Līhu'e and Kōloa. With the exception of hazard areas, additional infill growth should be encouraged in all towns.

Infill development is an important opportunity to diversify Kaua'i's housing stock through “Missing Middle” housing in walkable town centers. “Missing Middle” housing is characterized by small-scale, multi-unit housing types such as duplexes, fourplexes, bungalow courts, and mansion apartments that are not bigger than a large house, often integrated into blocks with single-family homes.

Enabling this environment means creating or adapting planning and zoning requirements in a manner that will stimulate private investment in new or renovated structures. Additional dwelling units (ADUs) (also called 'ohana units) are one example. ADUs offer a County-sanctioned private sector option towards providing more affordable housing in existing residential areas. ADUs are units built on lots where private homes are permitted, they are generally smaller and less expensive than the primary structure on the lot. The County's CZO allows for construction of ADUs on residentially zoned lots where one home is permitted, and County Ordinance 551 was adopted in 1989 to allow ADUs on agricultural and open lands. New ADUs are no longer allowed to be built on agricultural or open lands unless lot owners secured permits before 2007.

1. PERMITTING ACTIONS AND CODE CHANGES

- a.** Allow for multifamily structures and a variety of accessory dwellings such as ‘ohana units and additional rental units within the Neighborhood Center, Neighborhood General, and Residential Community designations.
- b.** Facilitate the development of small-footprint homes or “tiny homes” on small lots.
- c.** Update zoning in and around town centers to facilitate mixed use and infill development, such as units above commercial space.
- d.** Streamline permit approvals for infill development and housing rehabilitation by removing barriers, such as administrative delays.
- e.** Incentivize infill development by reducing or eliminating tipping fees, wastewater and water facility charges, permit review fees, and park and environmental assessment fees.
- f.** Update the building code to reduce construction costs and facilitate cost-saving materials and technology while maintaining health and safety.

2. PLANS AND STUDIES

- a.** Prevent displacement of vulnerable renters through rent stabilization policies and tax incentives for long-term rentals.

3. PARTNERSHIP NEEDS

- a.** Support programs that facilitate infill development and economic revitalization of town cores.
- b.** Hold educational sessions for landowners in Special Planning Areas to inform them of new development standards and potential opportunities.
- c.** Collaborate with the State to review and streamline infill development projects.

4. PROJECTS AND PROGRAMS

- b.** Support infrastructure and facility improvements to town centers to support a vibrant mixed-use environment conducive to housing.

C. New Communities

New master-planned communities are needed to accommodate future growth. Even though the General Plan prioritizes infill development, there is not enough existing zoning to accommodate projected demand. One of the most important roles of the General Plan is to guide where and how these new communities should develop. The desired location of new communities is shown on the Future Land Use Map and justified in Chapter 4, Future Land Use.

Design Communities for Equity and Healthy Outcomes

Communities that only cater to a high-end market that result in enclaves of similar household incomes and housing types are no longer acceptable. New communities must further the goals of sustainability, equity, and opportunity. This means that zoning and subdivision approvals for new communities must occur in a way to support transportation options to provide shared space for a range of residents. Use of green infrastructure, which mimics natural systems and protects water quality through features such as trees and rain gardens, is also encouraged.

New communities should be walkable, built with a pattern where one can live with limited reliance on the automobile, conducive to destination walking and cycling, and with access to transit and shared spaces. Walkable areas are largely supported through a network of interconnected, tree-lined streets, a diversity of housing choices, and a mix of appropriate commercial and residential uses in a compact form. This type of compact design supports public transit and ultimately reduces infrastructure and service delivery costs to the County over the long-term.

1. PERMITTING ACTIONS AND CODE CHANGES

- | | |
|--|---|
| <p>a. Locate new communities only in areas designated for growth in the Land Use Map.</p> | <p>f. Ensure new community subdivisions are designed to support housing type diversity, maximize density, provide safe pedestrian/bicycle connections and slow speed on roads.</p> |
| <p>b. Avoid sprawl development patterns and inefficient infrastructure and service delivery by maximizing density in new communities.</p> | <p>g. Take a proactive role in supporting zoning amendments and redistricting consistent with the General Plan and updated community plans.</p> |
| <p>c. Substantially increase the amount of market rate multi-family and "missing middle" housing on Kaua'i by requiring housing type diversity in all new subdivisions.</p> | <p>h. Allow higher density to increase profitability for developers, resulting in a cheaper housing per unit cost.</p> |
| <p>d. Increase opportunities for moderate- and low-income households to become homeowners by providing a range of housing types.</p> | <p>i. New communities should incorporate green infrastructure into their design and be water and energy efficient.</p> |
| <p>e. Build housing in proximity to jobs, parks, community resources, and services.</p> | |

2. PARTNERSHIP NEEDS

- a. Work with the State Office of Planning to explore large-scale state land use redistricting consistent with the General Plan and updated community plans.
- b. Enter into public/private partnerships to move forward development in new communities, especially in Līhuʻe, South Kauaʻi and Kīlauea.
- c. Leverage market-rate development to support long-term affordable housing through inclusionary zoning and other tools.



Residential neighborhood in Līhuʻe Town, Līhuʻe District

D. Agriculture Worker Housing

The lack of housing for farm workers is a major impediment to finding and supporting the labor necessary for agricultural enterprise. Housing units near agricultural operations reduces commuting time and costs. It also help deter vandalism and crimes committed against farms, as it offers increased surveillance.

The-Farm Worker Housing Bill (Ordinance 903, passed in 2010) allows farm operators to build small housing units on their agricultural properties. This useful zoning change could potentially be more widely utilized through modest improvements to the ordinance and permit application process.

1. PERMITTING ACTIONS AND CODE CHANGES

- | | |
|--|---|
| <p>a. Support the development of a limited amount of housing on agricultural land for farm workers and their families by:</p> | <ol style="list-style-type: none">1. Improving the existing process to obtain Farm Worker Housing Permits and remove barriers to participation.2. Providing outreach on the Farm Worker Housing Law to increase participation. |
|--|---|



School on Hawaiian Homestead lands in Anahola, East Kaua'i District

E. Hawaiian Homesteads Lands

The State Department of Hawaiian Homelands (DHHL) owns 20,565 acres on Kauaʻi, primarily in the East Kauaʻi, Hanapēpē, Eleʻele, and Līhuʻe Planning Districts (see landowner maps in Appendix F). DHHL works to ensure that native Hawaiian families, also called “beneficiaries”, have homes and land to call their own.

The DHHL defines beneficiaries as all Native Hawaiians (50% or more Hawaiian) and their successors, including existing leasees, applicants on the wait list, and Native Hawaiians who have not applied for a homestead award. The DHHL’s mission is to develop and deliver land to Native Hawaiians. Prince Jonah Kūhiō Kalanianaʻole, who led the passage of the Hawaiian Homes Commission Act of 1921, advocated ‘āina hoʻopulapula, protecting the Native Hawaiian population. ‘Āina hoʻopulapula involves creating self-sufficiency and planning for the future through investing in resources, such as education and housing.

As of 2014, there were a total of 1,621 applicants on DHHL’s Kauaʻi waitlist (*DHHL Applicant Waiting List, 2014*). The *2008 DHHL Lessee Survey* (prepared by SMS Research) found prevalent issues on homestead lands: overcrowding, aging infrastructure and homes, and the inability of homesteaders to finance expansion and repairs. The high costs of construction on Kauaʻi also make even simple homes out of reach for many DHHL beneficiaries.

The Kauaʻi Island Plan

The DHHL *Kauaʻi Island Plan* (2004) designates three priority tracts for residential development: Wailuā, Hanapēpē, and Anahola/ Kamalomaloʻo. These areas can accommodate a total of 2,351 residential lots of 10,000 square feet each, along with 84 acres of community space. Of high priority is a total of 621 lots to be developed across the three areas. Anahola is currently under development. However, buildout of Anahola has been slower than expected and DHHL is working to remove barriers to lot purchase for homesteaders. Wailuā will be the next priority area, although there is no timetable for development. The General Plan Land Use Maps incorporate the DHHL high priority growth areas. The landowner maps in Appendix F show land tracts owned by DHHL on Kauaʻi.

1. PLANS AND STUDIES

- a.** Integrate the recommendations of DHHL plans into Community Plan

2. PARTNERSHIP NEEDS

- a.** Respect and support the mission of DHHL to prioritize planning for their beneficiaries.

3. PROJECTS AND PROGRAMS

- | | |
|--|---|
| <ul style="list-style-type: none"> a. Partner with DHHL on infrastructure projects which will support development of both County and DHHL priority growth areas. | <ul style="list-style-type: none"> b. Partner with DHHL to relocate the Wailuā Wastewater Treatment Plant out of the tsunami zone and to support future residential development on DHHL land. |
|--|---|

F. Elderly Housing and Assisted Living Facilities

On Kaua'i, kūpuna (the Hawaiian word for elders or grandparents) are honored for their life experience and wisdom. Kaua'i has a relatively high median age and a higher percentage of older adults than the State as a whole. Many older residents are retired or semi-retired, and have more limited income streams than working adults. Adequate and affordable housing is a significant component in overall quality of life for elderly people. Of particular importance is the supply of affordable rental housing for seniors.

Readying for “The Silver Tsunami”

A significant demographic shift is occurring on Kaua'i. Kaua'i County already has the highest proportion of older adults compared to its total population of any County in Hawai'i (*Hawai'i State Plan on Aging*, 2011). The proportion of Kaua'i residents over 65 years is projected to rise from 10 percent in 2010 to 30 percent in 2035, which will effectively double the number of older adult households on Kaua'i. The impacts of an aging population include increased demand for healthcare and social services. It also places a strain on the workforce – especially if the workforce growth is stagnant.

**CLOSE TO ONE THIRD OF KAUA'I'S
POPULATION WILL BE 65 AND OVER IN 2035**

Supporting Kūpuna-Friendly Communities

One of the State's goals for Hawai'i's aging population is to, “Enable older adults to remain in their own homes with a high quality of life for as long as possible through the provision of home and community-based services, including supports for family caregivers” (*Hawai'i State Plan on Aging, 2011-2015*). This goal, also known as “Aging in Place,” is best served by having senior housing near social and medical services, shopping, and basic services.

Unfortunately, development patterns and zoning laws are sometimes barriers to kūpuna-friendly communities. Most homes are segregated from commercial areas and require automobile trips to shopping and medical services. Many neighborhoods do not have safe connections for walking with supportive devices, such as a cane or wheelchair. There are many neighborhood parks that do not have accessible outdoor gathering spaces for kūpuna to meet and gather in a shady place.

Zoning and development standards must be updated and new communities must be designed so kūpuna can age in place. We need to increase alternatives for older adults to “downsize” in the communities they live, living in multi-generational households, and have options to move to high-quality assisted living facilities.

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Support an increase in housing and assisted living facilities for Kaua'i's increasing elderly population by:
 1. Increasing the supply of housing that is affordable, accessible to services, and promotes aging-in-place.
 2. Allow multi-generational housing that accommodates family home care situations.

3. Revise development standards to facilitate approval of assisted living units and continuing care communities.

- b.** Integrate universal design standards into Kauaʻi's building code.

2. PLANS AND STUDIES

- a.** Integrate kūpuna needs into all future planning efforts.

3. PARTNERSHIP NEEDS

- a.** Continue providing and anticipate increasing services to the elderly and their caregivers, including paratransit, nutrition services, fitness programs, and personal care.



Multi-family housing, Līhu'e Town, Līhu'e District

G. The Houseless Population

The houseless population is especially vulnerable to Kaua'i's housing crisis. By providing a range of housing types, including affordable rentals, Kaua'i can stem houselessness and help families and individuals reduce the time spent being houseless.

Addressing the Increasing Number of Houseless People

The Homeless Utilization Report (2014) identified 378 houseless individuals on Kaua'i. Of this total, 300 were unsheltered, and 78 had temporary shelter. Kaua'i participates in the State of Hawai'i Department of Human Services and Homeless Programs Office Continuum of Care program. State agencies are primarily responsible for outreach to houseless people and have a range of services including emergency/transitional shelters, permanent supportive housing, rapid re-housing, homeless prevention, and a Housing First Program.

Homes for the Houseless

The housing needs of other disadvantaged groups are documented in the *2015-2020 Consolidated Plan*, data from Partners in Care Information Center, Point-in-Time Count Reports, review and consultation of various plans, public input, and surveys conducted. Kaua'i County has identified the need for a range of housing types for persons with disabilities, substance abuse, and HIV/AIDS. These include affordable rental and permanent housing, as well as transitional and group home facilities with medical and other support services. The General Plan supports focusing state resources on securing shelter for houseless families with children, youth, people with disabilities, women, and veterans.

1. PERMITTING ACTIONS AND CODE CHANGES

- | | |
|--|--|
| <p>a. Allow development of managed micro-housing or camp sites for the houseless.</p> | <p>b. Allow development of Single Resident Occupancy (SRO) unit projects.</p> |
| | <p>c.</p> |

2. PLANS AND STUDIES

- a.** Support the implementation and update of the *Kaua'i Houseless Solutions Summit Plan*.

3. PARTNERSHIP NEEDS

- | | |
|---|--|
| <p>a. Support the development and expansion of shelters to increase temporary housing for the houseless and other at-risk populations.</p> | <p>affordable housing opportunities and supportive programs.</p> |
| <p>b. Prevent houselessness and reduce the time spent being houseless by providing a continuum of safe and</p> | |

- c.** Identify partnership opportunities with landowners and community organizations to accommodate sheltering and transitional housing needs for houseless populations and people with disabilities.
- d.** Develop a coordinated, integrated system of services that facilitates entry, offers wraparound services, and supports system exit when appropriate.
- e.** Provide transportation to enable the houseless to access services (offer rides, bus vouchers, pay as you go card, or other options).
- f.** Support rehabilitation programs for the houseless.
- g.** Prioritize resources for houseless families with children, youth, women, veterans, and people with disabilities.



Multi-family housing, Lihue Town, Lihue District

H. Impact of Resort Uses on Housing Inventory

The spread of resort uses, especially transient vacation rentals (TVRs), into residential areas outside of visitor destination areas (VDAs) significantly altered many established communities – especially in places like Hā'ena and Hanalei where the resident population declined when homes were converted to TVRs.

Enforcement of Non-Conforming Resort Uses

Starting in 2008, the County addressed the proliferation of TVRs through a series of zoning amendments and stepped-up enforcement. TVRs are no longer allowed outside of the VDA, except for the approximately 400 units that are “grandfathered” via a non-conforming use certificate that requires annual recertification. Despite this effective “cap” on non-VDA TVRs, there are still outstanding concerns regarding residential character, public safety, and tax equity.

Threats to Residential Character

Large concentrations of non-conforming TVRs negatively impact residential neighborhoods. The displacement of low- to moderate-income households changed the social character of traditional neighborhoods. Once they were close-knit places, where neighbors knew each other. Today, the transitory occupancy of these neighborhoods are more vulnerable to crime, noise, and illegal parking. Hā'ena, Hanalei, 'Anini, and the Ho'ona Street Neighborhood in Po'ipū are especially affected by large concentrations of non-conforming Transient Vacation Rentals.

Tax Equity and Resort Uses

All TVRs should pay transient accommodation, real property, and general excise taxes at a rate consistent with other resort uses. This is to ensure fairness in accounting for visitor-related impacts and contributing to State and County revenue.

1. PERMITTING ACTIONS AND CODE CHANGES

- | | |
|---|---|
| <p>a. Reduce the impact and number of transient vacation rentals and similar uses, such as Bed & Breakfasts, in the communities outside the VDA by:</p> <ol style="list-style-type: none">1. Continuing aggressive enforcement against illegal TVRs. | <ol style="list-style-type: none">2. Supporting attrition and amortization of non-confirming TVRs, especially in high hazard areas.3. Monitoring and enforcing laws against new types of transient rentals facilitated by sharing economy websites, such as Airbnb and VRBO. |
|---|---|

III. LAND TRANSPORTATION

Kauaʻi is at a crossroads for its future transportation. Traffic congestion is one of the community’s most frequently expressed concerns, and it impacts nearly everyone on the island. The island’s topography, overall constrained financial resources, repair and maintenance backlog of existing roads and bridges, and General Plan goals of sustainability, resiliency, and health all underscore the need to achieve more efficiency and effectiveness with Kauaʻi’s existing transportation system and to spend Kauaʻi’s limited transportation funds wisely.

A Balanced System

The term ‘*balanced system*’ recognizes the importance of safely accommodating all roadway users, the need to make strategic investments, and that transportation and land use are linked, each with implications for the other.

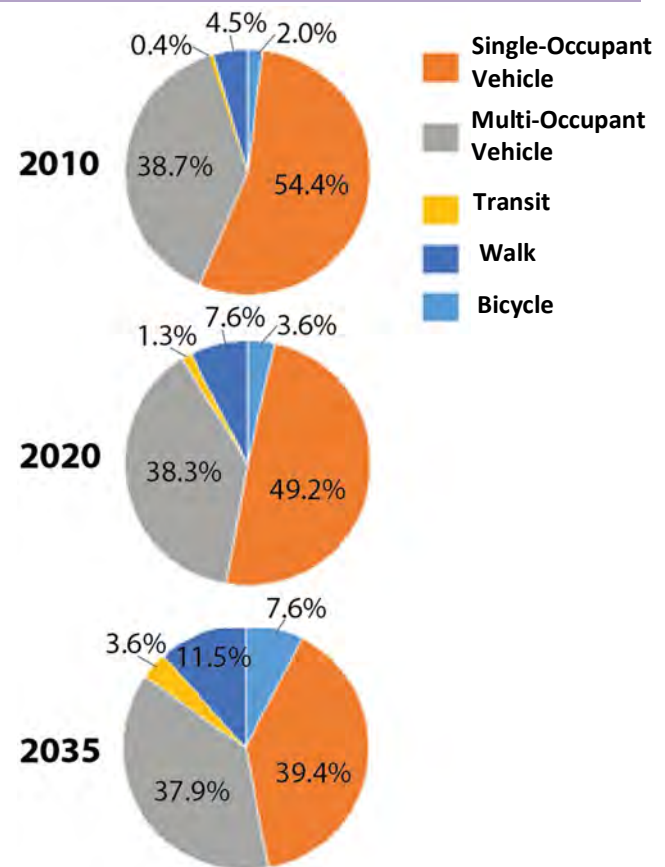
In 2013, the County Council adopted the *Multimodal Land Transportation Plan* (MLTP) which outlines steps the County of Kauaʻi will take to achieve a balanced multimodal transportation system through the planning horizon year of 2035. The MLTP reviews existing conditions and trends and proposes programs and scenarios for roadway networks, bicycle facilities, pedestrian facilities, and transit. It also discusses how land use relates to transportation. In order to address congestion, manage growth, reinforce compact land use patterns, and address sustainability goals, the MLTP was used as a framework for transportation policies in this General Plan. The MLTP proposed significant mode shift targets by 2035, primarily a reduction in Single Occupant Vehicle (SOV) travel and increases in transit, walking, and biking modes (Figure 2-5). While reduced, SOV trips are still projected to be the largest share of total trips.

Implementation of the MLTP will result in far-reaching outcomes that support many of the goals of this plan. These include reduced energy consumption, reduced household transportation costs, increased levels of physical activity, and improved transportation choice, especially for those who cannot drive.

Accomplishing these targets will require strategic implementation of specific projects and actions, as well as a ‘cultural shift’ in personal transportation choices. A shift in personal transportation choices occurring over time is supported by nationwide trends, including the following:

- ▶ Decline or delay in personal car ownership by millennials
- ▶ Willingness by millennials to use transit and other modes of transportation

Figure 2-5. Multimodal Land Transportation Plan 2035 Goals



- ▶ Prevalence of new transportation services, such as Uber and Lyft
- ▶ New “apps” that link private and public transit services
- ▶ Desire of both millennials and baby-boomers to live in walkable communities close to work and shopping
- ▶ Increase in telecommuting and office sharing
- ▶ Increase in the “shared economy,” including ride-share, car-share, and bike-share services.
- ▶ Increased recognition of the link between transportation choices and climate change
- ▶ Increased awareness of the relationship between health and transportation

While not all national trends may be currently prevalent on Kauaʻi, it is anticipated that both public and private transportation services linked to technological advances will affect Kauaʻi’s transportation system over the General Plan’s timeframe.

As the jurisdiction responsible for Kauaʻi’s belt highways and major roads leading to the airport and Nāwiliwili Harbor, the Hawaiʻi Department of Transportation (HDOT) is a key partner in Kauaʻi’s land transportation network. Thinking of our transportation network as an integrated system will require continued collaboration between the County and the State in planning across jurisdictions and across modes.

The transportation actions discussed in this section reflect the importance of partnership and the need to consider our land transportation system as an integrated network. The actions are organized by the following six programs:

- A. General
- B. County Roads
- C. Transit
- D. Pedestrian
- E. Bicycle
- F. Parking Management



Ke Ala Hele Makalae Shared Use Path, East Kauaʻi District

A. General

Solutions for the future sustainability and reliability of Kauaʻi’s transportation network lie in providing a balanced system with multiple modes, including freight, cars, transit, walking, and biking.

Managing congestion requires a multi-pronged approach

Traffic congestion, particularly on our belt highways, is a primary concern of our residents. Historically, efforts to address congestion have focused solely on adding capacity for motor vehicles through widening existing roads and building new roads. These types of projects are costly, can be environmentally sensitive, and often take years or even decades to complete, if they are ever undertaken at all. The State’s Federal Aid Highways 2035 Transportation Plan for the District of Kauaʻi identified \$3.2 billion in proposed roadway projects, with anticipated funding of \$600 million over 20 years. This approach to addressing congestion is simply not sustainable. A new approach is needed that focuses on managing congestion through a combination of smaller, quicker roadway projects, shifts some trips away from single occupancy vehicles to other modes (transit, walking, and biking), and reduces trip demand by focusing housing near jobs, schools, services, and parks.

At the same time, the backlog of existing roads and bridges in need of maintenance and repair has grown. The longer it takes to address road maintenance, the more costly it becomes as roads move from needing a simple resurfacing to a more extensive reconstruction.

With two agencies responsible for our roadway system (Hawaiʻi Department of Transportation for our belt highways, and the County of Kauaʻi Department of Public Works for our county roads), close collaboration is needed to assure we are all working toward the same end goal.

Given the reality of limited funding, strategic investment choices will need to be made. These choices can be based on a series of principles that are articulated in the General Plan, and include the following:

- ▶ Prioritize the repair and maintenance of existing roads over construction of new roads;
- ▶ When new roads are planned and constructed, focus on enhancing roadway network and connectivity, and improving resilience;
- ▶ When feasible, to minimize additional costs, consider and incorporate roadway improvements for all modes at the time of roadway resurfacing;
- ▶ Where feasible, as a means to reduce cost and shorten timelines for implementation, consider “least cost planning” and “practical design” for corridor planning. As an example, focus on spot improvements and intersection modifications to manage congestion prior to considering corridor-long multi-lane widening projects.
- ▶ Consider the safety of all users in planning and design.

1. PERMITTING ACTIONS AND CODE CHANGES

- | | |
|---|---|
| <p>a. Coordinate transportation planning with land use to minimize the impact of growth on congestion, improve walkability in town centers, revitalize commercial areas, and enhance mobility in places where people live, work, learn and play.</p> | <p>b. Require that Transportation Impact Analysis Reports and other traffic studies analyze a project’s potential to encourage mode shift.</p> |
|---|---|

2. PLANS AND STUDIES

- a. In all Community Plans, incorporate planning of roadway, transit, bike and pedestrian facilities, and transportation needs to support economic revitalization.
- b. Include analysis of the planned transportation system's ability to accommodate proposed growth, manage congestion, and achieve the County's mode shift targets in all Community Plans.

3. PARTNERSHIP NEEDS

- b. As a percentage of total trips, increase transit trips to 3.6%, walk trips to 11.5%, and bicycle trips to 7.6% by 2035, compared to baseline 2010 data of 0.4% for transit, 4.5% for walk, and 2.0% for bicycle trips.
- c. In collaboration with HDOT, develop a policy for consideration of roundabouts on State Highways and County roads.
- d. Improve the process of collaboration with Hawai'i Department of Transportation (HDOT) to involve both the County and State in planning, scoping, design, and funding of transportation plans and projects.
- e. In collaboration with HDOT, develop a process to apply "least cost planning" and "practical design" into transportation planning and projects with a focus on congestion management for Kūhiō Highway and Kaumuali'i Highway. Select a pilot project to test the process and outcomes.
- f. Restructure the Transportation Coordinating Committee as a working group with representatives from Kaua'i County Long Range Planning, the County's Transportation Planner, Public Works Engineering, Capital Improvement Program Manager, Transportation Agency, and HDOT.
- g. Identify and actively seek non-County revenue sources (Federal, State, and private) to supplement County funding of the transportation network.
- h. Enhance community partnerships for roadway maintenance (including landscaping) and education of all roadway users.

4. PROJECTS AND PROGRAMS

- a.** Establish transportation priorities based on the following criteria:
 1. Support of growth areas as designated in the General Plan and Community Plans;
 2. Support of the County's mode shift targets;
 3. Priorities identified in Community Plans and other planning documents;
 4. Safety, with a priority on safety for children;
 5. Congestion management;
 6. Cost in relation to available funds; and,
 7. Opportunity to leverage non-County funds.
- b.** Support completion of the priority projects in the Kapaʻa Transportation Solutions Report to include the following:
 1. Add one lane on the Kūhiō Highway from the southern end of the Kapaʻa Bypass Road to Kuamoʻo Road;
 2. Widen the northern segment of the Kapaʻa Bypass Road to two-lane and two-way from the northern end of the Bypass to the roundabout at Olohena Road;
 3. Operational improvements, such as signalization and left turn restrictions on Kūhiō Highway;
 4. Extension of right turn lane on Haleilio Road at Kūhiō Highway; and,
 5. Congestion management on Kūhiō Highway, from Kuamoʻo Road to Kapule Highway.
- c.** Following a priority evaluation process, complete priority circulation and multimodal capacity projects identified in the General Plan Transportation Maps.



B. County Roads

County roads and local streets will continue to be the primary way that people and goods move around the island, but they cannot accommodate unlimited growth. Maintaining roads so that they safely and efficiently handle vehicles, buses, and other modes is essential to a future with less time spent in traffic and fewer vehicle trips.

Preserving our Island's Character and Advancing Opportunity

Along with addressing congestion, other concerns of our community include preserving Kauaʻi's character, promoting economic development, and providing access for everyone to education, jobs, and services, regardless of age or physical ability.

Our County roads system plays a big role in addressing these concerns. When the only way to get around is by car, large segments of our population are left out, due to age, physical ability, or socio-economic conditions. Providing housing near jobs, education, and services, with a safe and convenient transportation network that accommodates transit, walking, and biking, allows everyone to be connected.

Retrofit of existing County roads can also be a catalyst for economic development, by creating inviting places for socialization and commerce.

How various modes are accommodated is achieved through street design and is key to preserving the character of our island. In town settings, sidewalks and bike lanes may be needed. In slow-speed low-volume settings, it may be appropriate for all users to share the street without special allocation for each user. The design of each street needs to take into account the function of the street, space available, adjacent land use, and the character of surroundings. This is called "context sensitive design", and is critical to preserving a sense of place. New street design standards are being developed by the County incorporating these principles to accommodate all users in different settings.

With limited funding, priorities need to be established for road retrofit and construction to best accommodate the needs of all users.

1. PERMITTING ACTIONS AND CODE CHANGES

- | | |
|---|---|
| a. Complete new street design standards to address all users. | c. Develop a traffic calming toolkit and update the County Traffic Code to allow for traffic calming features. |
| b. Amend the zoning and subdivision codes to support multimodal transportation options and safety for all users. | d. Designate, sign, and enforce truck routes. |
| | e. Update the school zone ordinance and signage. |

2. PARTNERSHIP NEEDS

- a.** Improve systems, communications, and resources so that County projects funded by the State Transportation Improvement Program (STIP) are completed on schedule.

3. PROJECTS AND PROGRAMS

- a. Complete priority resurfacing, reconstruction, retrofit, and repair of existing roads and bridges based on available funding.
- b. Retrofit existing roads to incorporate facilities for all users where feasible and appropriate, and as indicated in community plans or other network plans, as a part of resurfacing and reconstruction projects.
- c. Implement maintenance of roadside vegetation and roadway surfaces to increase safety.
- d. Secure resources and partnerships for maintenance of County roadways.



Hardy Street,,Lihue District

C. Transit Program

Transit is a key component of Kaua'i's transportation strategy to manage congestion, maintain our island's character, reduce our environmental footprint, reduce the cost of living, and provide opportunity for everyone.

Expanding Transit Ridership

The Kaua'i Bus is the County's provider of transit services. With each service improvement (extending hours of service and providing weekend service), ridership has increased substantially. Based on survey responses and analysis of ridership patterns, there is latent demand for transit service that is not being met due to current service limitations.

Two areas with the greatest potential to expand transit ridership are:

1. To expand service frequency and improve routing for commuters, and
2. To provide viable transportation alternatives for visitors other than a weekly car rental

The first requires modifications to The Kaua'i Bus mainline and peak hour service.

The second requires a new model for how visitors experience the island. Currently, about 89% of visitors rent a car during their visit. This adds to our island's roadway congestion, and causes severe parking impacts at destinations. In order to change this model, several factors are needed, including:

- ▶ Affordable and reliable shuttles between the airport and resort areas,
- ▶ Frequent shuttles within resort areas,
- ▶ Enhanced bicycle and pedestrian infrastructure within resort areas, including opportunities for bike rental or bike share, and
- ▶ Opportunity for short-term car rentals on site at resorts

Improved transit service cannot be accomplished if transit funding is irregular. A dedicated funding source is needed to sustain service expansion. This will require partnerships and support from residents, large and mid-size employers, commercial enterprises, and others that will benefit from an improved transit system.

At the same time as service expansion, efficiencies are needed to offset costs. This may include provision of some transit services by private enterprise, contracting of some services, elimination or consolidation of routes with low ridership, and efforts to transfer paratransit riders to less costly fixed route service.

1. PLANS AND STUDIES

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|---|---|
| <p>a. Complete a Short Range Transit Plan to identify efficiencies in paratransit and fixed route service and to establish priorities for service expansion.</p> <p>b. Complete a Mid-Range (4-7 year) Transit Plan for longer-term transit planning.</p> | <p>c. Complete the North Shore, South Shore, and East Side transit feasibility study to identify streamlining of existing local transit service, potential local service expansion, a financial plan to fund service, and seamless integration of public and private transit services.</p> |
|---|---|

- d.** Determine feasibility of accommodating surf boards on buses.

2. PARTNERSHIP NEEDS

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|--|---|
| <ul style="list-style-type: none"> a. Evaluate privatization or contracting of some transit services, such as paratransit and local shuttles. b. Expand the bulk bus pass program to generate transit revenue and encourage ridership. c. Coordinate with Hawaiʻi Department of Transportation (HDOT) to | <ul style="list-style-type: none"> incorporate transit stops and pullouts on State Highway projects where needed. d. Work with State and Federal agencies and local employers to establish a dedicated funding source for transit. e. Partner with HDOT to design bus stops on rural highways. |
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3. PROJECTS AND PROGRAMS

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| <ul style="list-style-type: none"> a. Implement a local circulator, mainline consolidation, and expansion as recommended in the County's shuttle feasibility study and Short Range Transit Plan. b. Increase mainline service frequency to every 30 minutes, with 15 minute frequency at peak times on peak routes. c. Identify and implement service modernization features, including GPS location of buses and integration with transit apps; electronic fare recovery; on-board wifi; and other amenities to streamline service and attract riders. d. Focus initial phases of service expansion in areas of highest ridership potential. e. Improve bus route and schedule information. | <ul style="list-style-type: none"> f. Complete bus shelters and amenities at 50 priority bus stops. g. Identify priorities for Americans with Disabilities Act (ADA)-compliant pedestrian access to bus stops. Develop a construction schedule and funding plan for priority projects. h. Identify locations and construct west side and north shore satellite base yards if recommended in the Short Range or Mid-Range transit plan. i. Identify locations for park and rides, especially in coordination with a North Shore shuttle. j. Convert bus fleet to sustainable fuels. k. Update maintenance facilities to continue maintenance of the bus fleet. |
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D. Pedestrian Program

Walking is ideal for short trips within town, or to and from transit stops. Expanding walking as a viable mode of transportation meets many of our goals, including health, sustainability, creating thriving commercial centers, reducing transportation cost, and equity.

Making Walking Safe and Attractive

In plantation days, walking was much more prevalent. Work, the dispensary, shops, schools, and recreation were all within walking distance of homes. In many of our plantation towns, the “bones” of these walkable communities are still intact.

Today, in order to expand walking, people need to feel that it is safe and inviting. In addition, for new communities, land use must be planned so that homes, parks, schools, jobs, and services are within walking distance. This is an example of how land use and transportation are linked.

In many places, a key contributor to congestion at peak hours is pick-up and drop-off at schools. A significant portion of elementary school students live within walking distance, yet many parents feel it is unsafe for their children to walk to school. Kauaʻi’s Safe Routes to School program, a partnership between the County, the Department of Education, and Get Fit Kauaʻi, strives to reduce barriers to walking to school through education, enforcement, encouragement, and investment in infrastructure. A similar program could be developed to establish “safe routes to parks” in neighborhoods.

With limited funding, investments in pedestrian infrastructure need to be strategic. Priorities include safe routes to schools and parks, and improvements to support vibrant, walkable town centers. Identifying and providing solutions for locations with a history of safety concerns, such as locations of crashes involving pedestrians, is another critical element.

Design of pedestrian improvements needs to take into account community preferences and surrounding character (“context-sensitive design”). For example, in low-speed, low-volume areas, it may be perfectly safe for cars, bikes, and pedestrians to all share the road. In other areas, such as town centers, a higher level of pedestrian infrastructure is needed for the safety of all users.

1. PLANS AND STUDIES

- a. Identify high-priority pedestrian safety projects based on crash data.

2. PARTNERSHIP NEEDS

- | | |
|--|---|
| <ul style="list-style-type: none">a. Continue a robust Safe Routes to School Program with Engineering, Encouragement, Education, Enforcement, and Evaluation.b. Complete priority pedestrian projects as identified in Community Plans and other studies. | <ul style="list-style-type: none">c. Work with HDOT to identify and implement appropriate pedestrian crossings on State Highways.d. Develop a Safe Routes to Parks program to identify priority pedestrian improvements within neighborhoods to parks. |
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E. Bicycle Program

Bicycling is a viable mode of transportation for short to medium trips within and between towns. Both bicycling and walking, also considered “active transportation,” promote health, sustainability, and equity, and have the potential to reduce the cost of living.

A Complete Bicycle Network

The likelihood of people bicycling for transportation can be divided into four categories (City of Portland, *Four Types of Transportation Cyclists*):

1. Strong and fearless
2. Enthused and Confident
3. Interested but Concerned
4. No Way No How

Strong and fearless riders are comfortable riding their bikes with cars in nearly all conditions. Based on research in other places, this group comprises less than one percent of the population. Enthused and confident riders are regular commute cyclists who are willing to share the road with motorists but prefer to ride in separate bike lanes or in adequate shoulders. Generally, enthused and confident riders are approximately seven percent of the population. Interested but concerned cyclists have some experience riding bikes and would like to ride more, but feel riding conditions are unsafe. Interested but concerned cyclists generally comprise 60 percent of the population. Local surveys indicate a large portion of our population falls into the interested but concerned category: they would like to ride their bikes more for transportation, but feel that current conditions are unsafe. No way no how, approximately 30 percent of the population, are simply not interested in riding a bike for transportation, no matter the conditions.

In order to expand cycling as a viable means of transportation, conditions need to address the safety issues of the “interested but concerned” group: if the road is shared with cars, volumes and speeds need to be low; on higher volume streets, separate bike lanes are needed; in high-volume high-speed corridors, separate bike facilities, such as shared use paths, are needed. Intersection treatments also need to be safe for cyclists. Most importantly, a continuous network is needed that allows cyclists to feel safe getting from point a to point b. Adding bike lanes on a single street does not create a network and will not substantially increase cycling until those bike lanes are connected to other bike facilities.

While planning is done at the network level, implementation is typically done incrementally. Community Plans are seen as the ideal scale and community process to establish bicycle networks in all of our districts. For existing road retrofits, as much as possible, implementation should occur in conjunction with other roadway projects, such as resurfacing and reconstruction, to reduce costs.

Another key factor is bicycle education. Both cyclists and motorists need to understand their rights and responsibilities of safely sharing the road.

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Incorporate bicycle parking requirements into the Comprehensive Zoning Ordinance.

2. PLANS AND STUDIES

- a. Establish an island-wide bikeways plan with priorities for implementation through the community planning process.

3. PARTNERSHIP NEEDS

- a. Work with HDOT to have adequate and safe bicycle facilities on all State Highways, including bridges.
- b. Leverage Federal funding to complete bicycle and pedestrian access improvements on Kīlauea Road to Kīlauea Point National Wildlife Refuge.
- c. Prepare a bikeshare feasibility study and implement a bikeshare program.
- d. Continue to support bicycle safety and education programs in collaboration with community partners.

4. PROJECTS AND PROGRAMS

- a. Complete planning, engineering, and construction for the West Side Path from Waimea to Kekaha and from Hanapēpē to Salt Pond.
- b. Complete the Ke Ala Hele Makalae path from Anahola to Līhuʻe.
- c. Complete planning and first phase construction of a North Shore Path in areas supported by the community.
- d. Complete at least one segment of a shared use path identified in the South Kauaʻi Community Plan and the Līhuʻe Community Plan.
- e. Complete priority bikeway projects as identified in Community Plans.



Cyclists and Signage on the Ke Ala Hele Makalae Shared Use Path, East Kauaʻi District

F. Parking Management

Parking is a key component of both land use and transportation. Creating vibrant, walkable towns requires new ways of thinking about parking. At beaches, trails, and other scenic destinations, parking is a key consideration to providing access while protecting our island's character and environment.

Managing Parking Wisely

In 2014, the County received technical assistance from Smart Growth America to conduct a Parking Audit Workshop for Līhu'e Town. The workshop provided our community with new ways to think about parking supply and demand, and the relationship of parking to transportation and land use. These concepts apply not only to Līhu'e, but to all areas of our island.

Traditional zoning requires each building or parcel to provide adequate parking on site. This leads to large expanses of land dedicated to parking, and generally creates commercial areas that are not conducive to walking. With increased density and a safe pedestrian environment, parking can be provided off-site. Parking districts that consolidate parking in key locations to serve multiple properties, and shared parking between sites, are strategies that are needed to encourage infill development. Another important consideration for our towns and resort areas is to promote parking management strategies that reduce parking demand. These strategies may include timed parking, paid parking, and employer incentives such as transportation benefits that incentivize ride-sharing, walking, biking, or taking transit to work.

At beaches, trails, and other scenic destinations, parking is an important component of access, yet in some areas, such as Kē'ē Beach, scenic and cultural resources are compromised by too many cars. In some areas, formalized or dedicated parking is needed. In other areas, parking demand should be reduced through alternative modes of access, such as shuttles.

1. PLANS AND STUDIES

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| <p>a. Implement parking audits in areas where parking resources are perceived to be limited and where additional parking resources or parking management may be needed such as Kapa'a Town, Hanalei and Po'ipū.</p> | <p>b. In partnership with the State, develop and implement a Parking Management Plan for the Līhu'e Civic Center.</p> |
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2. PARTNERSHIP NEEDS

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| <p>a. Establish staff resources and funding for Countywide parking enforcement.</p> | <p>b. Work with State agencies to address the parking impact at beaches and other State owned parks and scenic areas such as Kē'ē Beach.</p> |
|--|---|

- c. Work with employers and resort areas to establish parking management strategies that incentivize mode shift.
- d. Consider the establishment of parking districts in town centers.



IV. CRITICAL INFRASTRUCTURE

Infrastructure to provide water and dispose of wastewater and solid waste is critical to supporting growth on Kauaʻi, yet the current systems are stressed and not keeping pace with demands. If Kauaʻi is to grow sustainably it must meet the infrastructure needs of today and make smart investments in planning, maintenance, and facilities to meet future needs. We must also ensure that our airports and harbors are well maintained and equipped to withstand unexpected events.

Aligning Facility Plans with the General Plan

As a high-level policy document, the General Plan is not a facility plan or master plan. Infrastructure systems run by the County and State are guided by specific plans that provide direction, needs assessment, and capital expenditures for entire systems and individual facilities. Typically, these plans are highly technical and conform to regulatory requirements. The update of these specific plans should also be guided by the General Plan and align with the policy and actions. Moreover, the County has limited to no jurisdiction and less involvement in the update of facility plans for privately run systems, such as in Princeville. Give the need to focus and prioritize infrastructure improvements and explore public-private partnerships, community plans are an important opportunity to develop district-level guidance on the development and improvement of regional infrastructure.

Infrastructure Capacity and Current Needs

We depend upon our public and private systems for water, wastewater treatment, and solid waste disposal to sustain our daily activities in a way that protects our public health and natural environment. We must make strategic infrastructure investments now and in the future to support these systems and do so in ways that are environmentally and economically responsible and equitable in their outcomes.

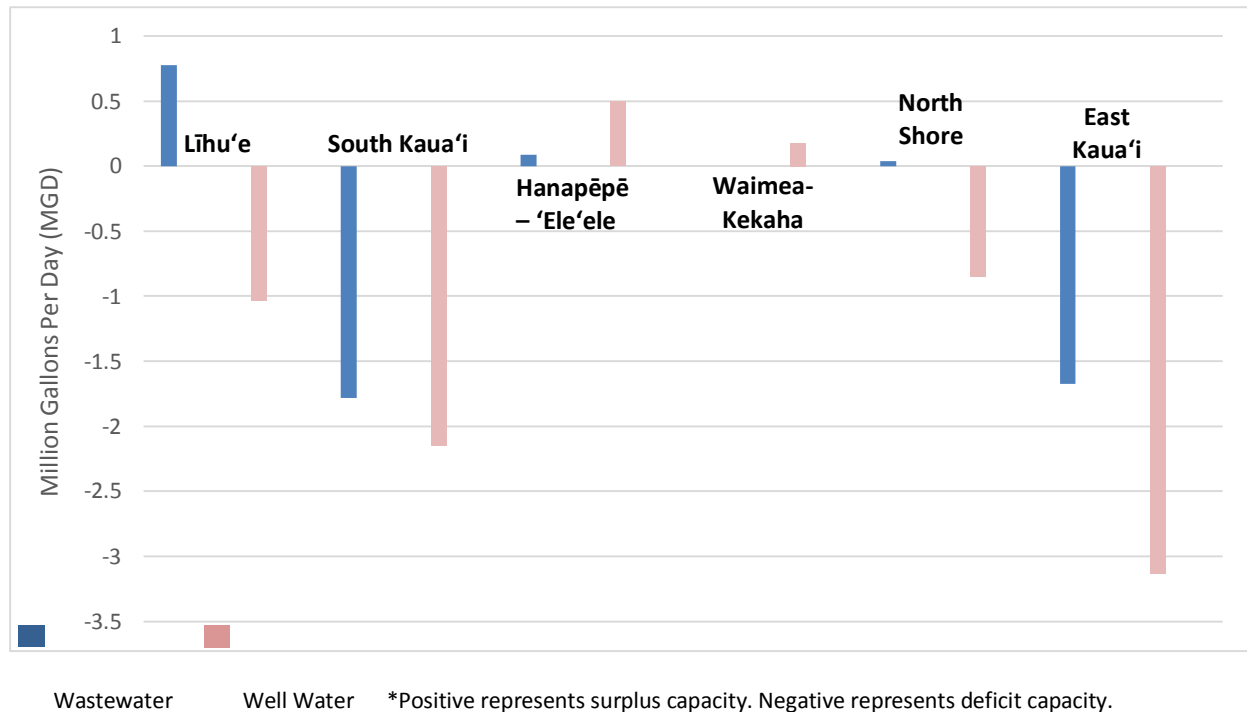
Two studies were completed for the General Plan Update to document existing infrastructure conditions and estimate future need:

- ▶ The *General Plan Update Kauaʻi Infrastructure Analysis* (2015) describes existing infrastructure systems on Kauaʻi.
- ▶ *Assessment of the Adequacy of Kauaʻi Infrastructure for Current and Future Needs* (2015) estimates infrastructure needs for the island and by planning district to 2035.

These studies identified projected deficits of water and wastewater capacity in some districts, indicating a need for more capacity to accommodate the 2035 population (see Figure 2-6). Other key findings are summarized in the sub-sections on Water, Wastewater, and Solid Waste. Maps showing key infrastructure systems can be found in Section 5.5. This Sector also includes Airports and Harbors, which are critical facilities that support the transport of people and goods to and from Kauaʻi on a daily basis.

Improving How Infrastructure Supports New Growth

Typically, the burden of paying for the infrastructure to service new development falls on the developer. In turn, these costs are carried over to the buyer. In order to alleviate the housing crisis by supporting growth in the desired areas, government will need to help provide this infrastructure. The County should use its ability to invest in infrastructure as a tool to encourage growth where it is desired. However, for this to occur, infrastructure improvements and land use planning will need to be more closely coordinated. We need to look to partnerships to provide the funding needed for new infrastructure required by growth. Examples include the creation of special districts and innovative public/private partnerships.

Figure 2-6. Projected Wastewater and Domestic Water Capacity by District in 2035

Water Planning and Capacity Challenges

Kaua'i is blessed to have an abundance of high quality water. However, our aging infrastructure can make it challenging to address water source, storage, and distribution needs. The *Water Plan 2020* document has not been officially updated since 2001, but is revisited yearly by the Department of Water (DOW) to reprioritize improvements and be in sync with current land development needs. However, the coordination between DOW improvements and long range land use planning can and must be improved. The lack of coordination has led to inefficiencies and delays as the DOW requires lead time in process permitting and funding. As a result, this has had the effect of delaying or even halting construction of new housing and commercial projects. Additionally in some areas there are legal challenges that question the validity of diverting water resources for any purpose based on the public trust doctrine. Before water and associated facilities for extraction, storage, and distribution can be allocated to support growth, these legal cases and planning gaps need to be addressed.

Finding Innovative Ways to Reduce Waste

Kaua'i's landfill is nearly at capacity, and the island's wastewater disposal system is heavily reliant on individual septic systems and cesspools, many of which are obsolete or nearing the end of their usable life. These conditions have potentially severe consequences for public health and environmental quality, and both could require costly fixes. Kaua'i is like many rural areas in that it has a small tax base and limited resources to fund infrastructure improvements. But we are unique in being an island with a finite land mass and self-contained infrastructure systems. Consequently, it is not realistic to continue on the trajectory of allowing waste generation to grow with our population. Kaua'i must employ creative solutions and innovative technology to improve its waste treatment and disposal. Further than that we must shift our own thinking and behaviors about how we generate and dispose of waste at the individual household and business level.

A. Domestic Water

Kauaʻi is endowed with ample water supply in our aquifers, but water distribution is limited by a system that requires expansion to meet projected demands through 2035.

Reconciling Water Supply and Infrastructure

Kauaʻi's aquifers have sufficient sustainable yields to accommodate future growth. The State Commission on Water Resource Management (CWRM) has not imposed any Ground Water Management Areas on Kauaʻi, which would be required if there were dangers of exceeding sustainable yields in any of our aquifers. The CWRM will issue an updated *Water Resource Protection Plan* later in 2016 that will have new sustainable yield estimates based on a more cautious approach than previous estimates.

Improving System Reliability and Addressing Growth

Kauaʻi's 2014 groundwater well production exceeded 2011 water consumption by about 3.25 million gallons per day (mgd). Groundwater supplies were sufficient within each area except Līhuʻe, which supplemented its water needs with Grove Farms' privately owned system. The Department of Water (DOW) has 13 service areas with approximately 20,500 customers (as of November 2013). The State Department of Health Safe Drinking Water Branch regulates ten private water systems on Kauaʻi. These range from large systems owned by the Pacific Missile Range Facility and Princeville Utilities Co. to smaller private systems in Keālia, Kōkeʻe State Park, Polihale State Park, Pakala Village, and the Department of Hawaiian Home Lands water system in Anahola. See Figure 2-7 for the locations of public and private water service areas on Kauaʻi.

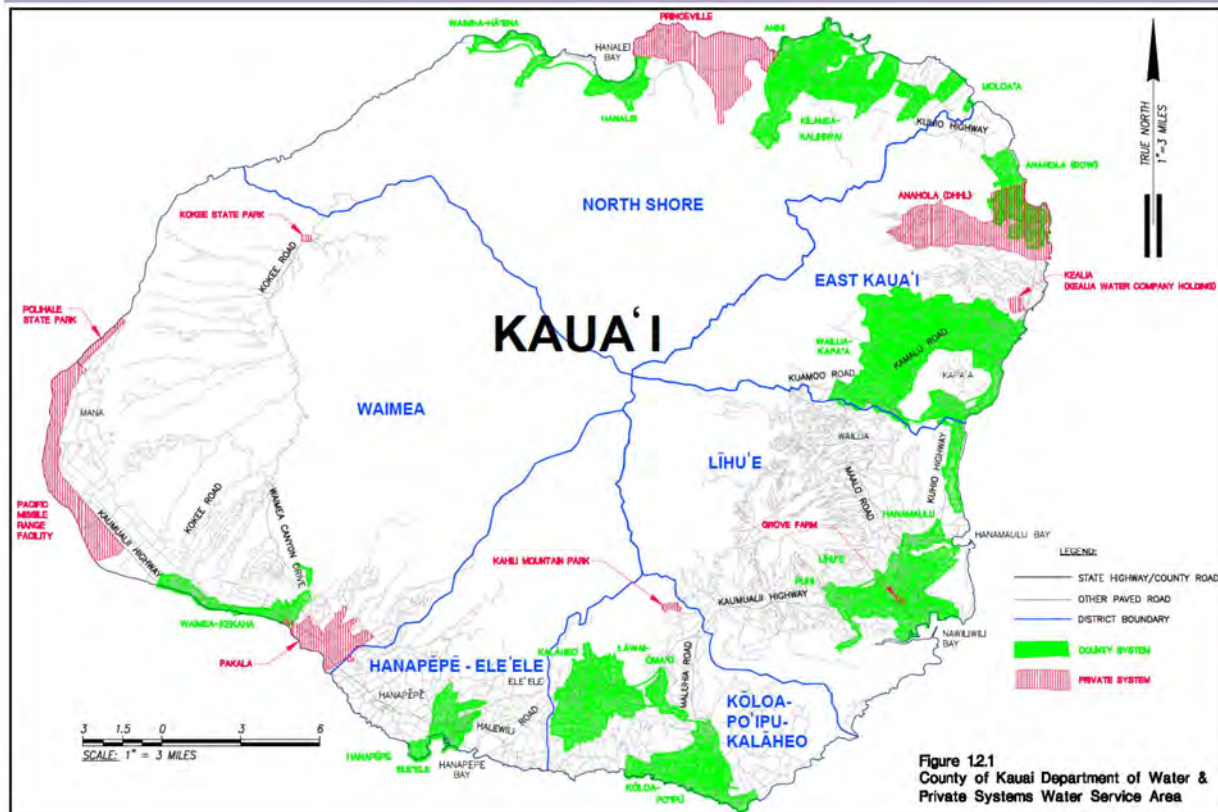
Based on future projections, the DOW will need to complete system and facility improvements to address an additional 6.48 mgd of production and supporting facilities by 2035. This includes an estimated 237 miles of pipes out of a total 399 miles that need to be replaced due to age, deterioration, or inadequate capacity, particularly due to current fire protection standards.

The DOW 2020 *Water Plan* incorporated housing unit and population forecasts from the 2020 Kauaʻi General Plan. The DOW will update its 2020 *Water Plan* to a 2040 planning horizon after this General Plan is complete, incorporating updated housing unit and population forecasts.

**MINIMIZING WATER DEMANDS WILL HELP
CONSERVE OUR MOST PRECIOUS RESOURCE
FROM THE ONSET**

The General Plan actions for domestic water support water planning and investments in infrastructure that focus on priority growth areas. They also support measures for water conservation and recycling. General Plan policies and actions that focus growth around existing centers will help to reduce costs associated with water system upgrades by minimizing the extent of new water distribution networks that must be built and maintained.

Figure 2-7. Public and Private Water Service Areas



County System Private System

Source: R.M Towill (2015)

Enhancing Water Conservation

While there is little concern that we will run out of water supplies in our aquifers, minimizing water demands will help conserve existing system capacity and reduce or forestall needs to expand our costly water extraction, storage, and transmission/distribution infrastructure. Use of recycled 'greywater' or rain catchment for irrigation and some types of cleaning is another way to minimize demands on potable water supplies. Likewise, more efficient buildings and land use patterns can also reduce overall demand for water. Kaua'i residents have been conserving water over recent years. DOW has a range of historic and recent strategies and measures to encourage water conservation, including 100% customer metering, leak detection, plumbing code regulations, and public outreach and education programs. The *Water Plan 2020* goals include reducing average day demand by 2.2 million gallons/day and reducing maximum day demand by 3.2 million gallons, based on implementation of these measures. DOW reports that revenues have been dropping annually, most likely due to rate increases that incentivize customers to use less water. On Kaua'i we follow the plantation philosophy: *Do Not Waste Anything*. DOW's rates reinforce and encourage this philosophy through conservation.

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Prioritize increasing domestic water supply, storage, and distribution systems to meet projected needs while encouraging conservation.
- b. Give priority to water supply improvements in infill development areas with compact development.
- c. Encourage alternatives for non-potable water usage, such as rainwater catchment and greywater recycling from potable uses.
- d. Support water savings through land use practices like low impact development (LID), Ahwahnee Water Principles for Resource Efficient Land Use, new green building programs, and onsite and offsite conservation land use practices.

2. PLANS AND STUDIES

- a. Update the *2020 Water Plan* to guide water system expansion, improvement, rehabilitation, and rate structures to support growth consistent with the General Plan and Community Plans.
- b. Explore opportunities to reduce potable water usage through recycled water and alternative individual water systems such as rainwater catchment and greywater recycling, and incorporate these into the Water Plan Update.
- c. Update the Water Use and Development Plan and use the Sustainable Yield figures to help guide the COK Water Plan Update.
- d. Reconcile water service areas with County planning districts to integrate facilities with community plans.

3. PARTNERSHIP NEEDS

- a. Encourage water conservation at the individual, business, and municipal level.
- b. Collaborate with community groups on cooperative approaches to water management.

B. Wastewater, Septic Systems, and Cesspools

Sustainable growth means providing safe and sanitary wastewater disposal solutions for our fast growing areas as well as weaning our rural communities off of cesspools and septic systems that create environmental pollution and potential health hazards.

Regional Wastewater Treatment on Kaua'i

Kaua'i's wastewater treatment and disposal is addressed through a combination of County and private systems. Treated effluent is either disposed of via injection well and ocean outfall or is recycled as R-1 or R-2 water for irrigation. The County's wastewater treatment plants are located at Waimea, 'Ele'ele, Lihu'e, and Wailua, and they have a combined design capacity of 5.5 million gallons per day (mgd). The Infrastructure Maps at the end of this section and in Chapter 5 show the locations of the plants.

All four plants were built before 1980 and have had capacity and system upgrades. The Waimea and Lihu'e plants produce R-1 water (oxidized, filtered, and disinfected) while the Wailua plant produces R-2 water (oxidized and disinfected). Both forms of recycled water are suitable for irrigation and some other nondrinking uses, but the primary use is for irrigation of County parks and State Department of Education (DOE) property and golf courses.

In addition to County systems, there are over 35 privately owned wastewater treatments plants serving various developments on Kaua'i. The largest private systems are in Puhi, the Kaua'i Beach Resort, Po'ipū (HOH Utilities) Princeville (Princeville Utilities), and at the Pacific Missile Range Facility. These five systems have a combined design capacity of 3.42 mgd. The Princeville and Po'ipū systems produce R-1 and/or R-2 water that is reused by nearby private golf courses. The others are package treatment plants serving small beach resorts, and sludge from them is trucked to the County treatment plants in 'Ele'ele and Lihu'e.

The Need for Cesspool Conversion

A large number of homes and businesses are not connected to a regional sewer system and must use a cesspool or septic system. These Individual Wastewater Systems (IWS) are regulated by the State Department of Health and had an estimated capacity of 4.06 mgd in 2015. The DOH estimated there were 13,688 cesspools and 5,300 septic and aerobic units on Kaua'i in 2016.

The State no longer allows construction of cesspools. Large capacity cesspools were banned by the Environmental Protection Agency (EPA) in 2005. DOH offers incentives for septic system conversion through Act 120, a State tax credit of up to \$10,000 per qualified cesspool. However, this is only for properties within 200 feet of streams, ocean, or SWAP zone (Source Water Assessment and Protection Program) near wells. The tax credit program is set to expire in 2020 unless the State legislature extends its horizon. At this time the DOH uses the county building permitting process to determine if a property needs to upgrade a cesspool to septic system, depending on the location of the property and/or the extent of the project.

HAWAII COUNTY HAS MORE CESSPOOLS THAN KAUAI, BUT KAUAI HAS THE HIGHEST DENSITY OF IWS AT 32 UNITS PER SQUARE MILE.

Emerging Water Quality Concerns

The Wailuā plant discharges up to 1.5 million gallons of treated effluent per day through a permitted ocean outfall that begins approximately 670 feet offshore of Lydgate Beach and 30 feet below the ocean surface. The County is required to obtain a National Pollutant Discharge Elimination System (NPDES) permit, issued by the State Department of Health (DOH). As part of the compliance measures for the permit, the County must strive to meet updated water quality standards.

A wide-ranging concern is coastal water quality near high concentrations of cesspools and underground injection wells. DOH is exploring the environmental impact of Kaua'i's large number of cesspools and injection wells, with a special focus on South Kaua'i, Nāwiliwili, and Wailuā.

Regional System Expansion

While total wastewater treatment capacity was sufficient to address the levels of wastewater generated in 2015, projected growth indicates the need to expand wastewater treatment facilities by a little over 2.5 mgd to accommodate island wide generation in 2035. The greatest projected needs are on the South and East sides of the island. Only the Līhu'e wastewater treatment plant is projected to have significant excess capacity. New regional wastewater solutions will be needed to accommodate planned growth in South Kaua'i and Kilauea.

1. PERMITTING ACTIONS AND CODE CHANGES

- | | |
|---|--|
| <p>a. Require large-scale developers to contribute funds toward improved recycled water production and distribution, or to construct their own wastewater reclamation facility.</p> | <p>recycled water from treatment where possible.</p> |
| <p>b. Manage wastewater treatment and disposal in a manner that safeguards human and environmental health, accommodates future growth, is efficient and cost effective, and uses</p> | <p>c. Improve the quality of effluent discharged into injection wells, especially those in the Special Management Areas.</p> |
| | <p>d. Support innovative treatment systems that produce effluent at appropriate water quality levels to encourage reuse such as irrigation, industrial uses and other non-potable uses.</p> |

2. PLANS AND STUDIES

- | | |
|--|---|
| <p>a. Develop and update wastewater facility plans to guide decisions regarding the allocation of treatment capacity, the expansion of wastewater systems, and system improvement priorities.</p> | <p>b. Coordinate public and private planning, development, operation, and management of wastewater treatment and disposal systems.</p> |
|--|---|

3. PARTNERSHIP NEEDS

- a. Support DOH's efforts to reduce the number of cesspools on Kaua'i through septic conversion or through connection to a new or existing regional wastewater system.
- b. Work in partnership with developers and the State to institute best practices for diverting and reusing wastewater.

4. PROJECTS AND PROGRAMS

- a. Expand existing wastewater treatment systems to existing communities where possible, with a focus on expanding the Wailuā Wastewater Treatment Plant to the Wailuā House Lots area.
- b. Plan for and implement new regional wastewater treatment solutions for South Kaua'i and Kīlauea.
- c. Utilize the low-interest State Revolving Fund for water reuse projects.
- d. Monitor the disposition and potential effect of cesspool seepage and injection wells on the groundwater and nearshore water quality.



Water quality in Hanalei Bay is affected by the many cesspools along the North Shore

C. Solid Waste Disposal and Recycling

With a landfill nearing capacity and a fragile island ecosystem, all people on Kauaʻi must commit to doing their part to recycle, reduce our waste generation, and properly dispose of hazardous and green waste. The County should continue to explore and embrace programs and strategies that help us reduce our waste footprint on the island.

Rethinking Waste Disposal

There are significant challenges to managing solid waste disposal on a relatively small island with a growing residential and visitor population. At the end of 2015, there was an estimated 665,995 cubic yards of remaining capacity at the Kekaha landfill, the only approved landfill site on the island. The *Waste Management of Hawaiʻi* (WMH) Annual Report released in February 2015 estimated the remaining lifespan of the landfill (at that time) at approximately 4.9 years, based on capacity.

Addressing this insufficiency will necessitate increasing landfill capacity at Kekaha in the interim, while expediting the development of a new landfill site and increasing the diversion of waste. These actions require the County to act decisively now, because required environmental studies, land acquisition, new program implementation and other steps can take several years.

The County's Department of Public Works (DPW) provides island-wide service for collecting and disposing of solid waste generated by residents. The County also services a limited number of commercial customers using 64 and 96 gallon refuse carts at curbside, including Transient Vacation Rentals. The majority of businesses requiring dumpster service are collected by private refuse hauling companies. The DPW also manages the County's only landfill where all municipal solid waste from residents and businesses is disposed. The DPW currently does not have a curbside recycling program or curbside green waste collection program. All residential recycling programs are voluntary, and residents must transport material to various centers located throughout the island.

Reduce, Reuse, and Recycle

In 2015 the total waste generated island-wide was 148,465 tons (or 813,506 pounds) per day (roughly estimated at 11.6 pounds per person per day). There is an estimated 44% of total waste being diverted from the landfill through recycling and other diversion efforts. The diversion rate has increased steadily over the past 10 years; however, continued diversion increasing at the same rate cannot necessarily be assumed. The County has a goal of 70% diversion by 2023, which will require construction of a new materials recycling facility (MRF) and the provision of curbside recycling, implementing recycling mandates for businesses, and curbside collection of food and yard waste.

**THE COUNTY HAS A GOAL OF
70 % DIVERSION BY 2023**

In July of 2016, Kauaʻi became the first County in the State to introduce a variable rate refuse collection fee for residential customers. This "Pay As You Throw" system charges customers for service in relation to the volume of the refuse cart requested by customers and provides an economic incentive to reduce trash and increase recycling and waste diversion behaviors.

Green waste recycling is among the most cost-effective programs for reducing landfill demand since its byproducts can be marketed and it comprises a substantial portion of solid waste generated on Kauaʻi. In FY 2015, 31,450 tons of green waste was diverted at County transfer stations and Kekaha landfill and through commercial efforts. Additional green waste is not diverted because there is no curbside collection

program for residents. This undiverted amount was estimated to be over 6,000 tons in 2010, based on a waste composition analysis conducted for the County's *Integrated Solid Waste Management Plan (2009)*. In addition, it accounted for two-thirds of the tonnage in the County's diverted waste stream and over 30 percent of the tonnage for private sector waste diversion programs. In order to maximize the potential of green waste diversion from the landfill, the County would need to initiate curbside recycling for green waste. There are currently five green waste recycling locations, listed in the table to the right.

Green Waste Recycling Locations

Hanalei Transfer Station

Kapa'a Transfer Station

Līhu'e Transfer Station

Hanapēpē Transfer Station

Kekaha Landfill

The County offers a variety of residential recycling opportunities for various recyclables including: appliances, autos, batteries, electronics, motor oil, household hazardous waste, tires, scrap metal, propane tanks, aluminum and steel cans, plastic #1 and #2, glass, cardboard, mixed paper, and newspaper. Items are accepted free of charge at various locations throughout the island. The County also offers free backyard composting bins for residents to manage food and yard waste. These programs are coupled with strong education efforts, including classroom presentations, social media blasts, TV radio and newspaper ads, free Recycle Coach App, and a website.

The County has legislation restricting disposal of commercially generated cardboard, metal, and green waste at the landfill. This legislation has been very effective in assuring that large generators do not dispose of these recyclable items. The County is looking to reinforce this existing legislation by mandating that local businesses have recycling program in place for materials that are easily recyclable. The County has been working with stakeholders (business groups, haulers, and recyclers) to assure that the proposed legislation is fair and effective before it is implemented.



Zero Waste Bin (Source: Kauaikeikirecycles.com)

The State of Hawai'i is one of eleven states in the nation to have a beverage container deposit law (also known as the "Bottle Bill"). The Hawai'i Beverage Container Deposit (DBC) law was implemented in 2005 and covers water and other non-alcoholic beverages, beer, mixed spirits, and malt beverages packaged in aluminum, bi-metal, glass, and #1 and #2 plastics up to 68 ounces. This law provides an economic incentive to recycle and has significantly increased the diversion of these containers. The current recycling rate is 68%.

Food waste is a new focus for the DPW, as there is national attention on this issue and national public/private efforts to reduce this waste stream. Food is costly to produce environmentally, and its waste emits high levels of greenhouse gas in landfills. The County has tapped into the dialogue on food waste reduction, and it has launched a "Food: Too Good to Waste" public awareness campaign that is tailored with local data. The County promotes already developed tools and tips for residents and businesses to save money by reducing food waste.

Landfill as a Last Resort

In addition to increased recycling, a new landfill will be needed to address solid waste disposal. The current Kekaha landfill site is the only permitted municipal solid waste site on the island and can continue to accept waste only up through 2020 without approvals to expand it. If existing proposals to expand are approved, the Kekaha landfill will likely reach capacity by 2028. It is extremely important to note that estimates of remaining time before the Kekaha landfill is full are based on typical conditions for solid waste generation. These can change dramatically after a major storm or other natural disaster. For context, Hurricane Iniki in 1992 produced more solid waste in a 24-hour period than five years of the typical rate of solid waste generation on Kauaʻi.

The County has proposed to create a combined new landfill and materials recycling facility on a 270-acre site owned by the State in Maʻalo near Līhuʻe. The proposed Resource Recovery Park provides the possibility of more preferable locations for long term management of some of Kauaʻi's solid waste disposal and recycling programs that are not already operational.

Long-term management of Kauaʻi's solid waste streams will require diligent efforts by the community, businesses, and government. Coordinated programs are needed to 'reduce, reuse, and recycle' in ways that are effective and convenient. Programs that reduce waste from building materials, packaging, or other major waste generators can be particularly effective since they target larger volume businesses that can adjust their systems, often with cost savings as a byproduct. Targets such as the County's 70 percent diversion rate goal by 2023 help focus efforts and bring attention to programs and strategies that work best.



Truck bringing solid waste to the Kekaha Landfill (Source: Kauaikeikirecycles.com)

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Reduce construction and demolition debris disposal in landfills by requiring recycling, particularly for large contractors and construction projects.

2. PLANS AND STUDIES

- a. Update the long-range Solid Waste Integrated Management Plan every ten years to set policies for solid waste programs, facility planning, capital improvements, operations, user fees, and financing facilities and operations.
- b. Plan and prepare for emergency debris management and disposal due to future major storms and tsunamis.

3. PROJECTS AND PROGRAMS

- a. Site and construct a new landfill.
- b. Establish an automated weekly, curbside collection system for residentially generated green waste and recyclables.
- c. Reduce solid waste volume through source-reduction programs that reuse building materials, minimize packing materials, and other measures. Focus attention on large volume purchasers and developers.
- d. Divert at least 70 percent of solid waste from landfill sites to recycling and reuse by 2023.
- e. Maximize effective life of existing and future landfill capacity.
- f. Increase the convenience of recycling centers for users.

D. Airports and Harbors

Ocean and air travel are what keep Kauaʻi connected to the world. We rely on our airports and harbors to bring people and essential goods to and from the island. Their reliability and longevity are critical to maintaining Kauaʻi's economy.

Modernizing Airports to Serve Current and Future Needs

Kauaʻi's main airport in Līhuʻe is managed by the State Department of Transportation (DOT) Airports Division. In addition, the DOT operates the Port Allen airport, a general aviation airport. DOT is undertaking a statewide Airports Modernization Program. In Līhuʻe, improvements include upgrades to the ticket lobby, construction of a consolidated car rental facility, and an expansion of the parking area and airport loop road (*Hawaiʻi Airports Modernization Program, 2008*). The State of Hawaiʻi Office of Planning recently completed a Technical Assistance Memorandum (TAM) to guide planning of land uses within 5 miles of airports to assure land uses that are compatible with airport operations, including aircraft landing and takeoff (TAM-2016-1, August 1, 2016). While improvements to airports are justified to serve existing and projected demand, there is concern that increasing the capacity of Līhuʻe Airport would support and encourage increased visitor traffic. Such improvements should be balanced with the objectives of managing tourism impacts and keeping visitor arrivals at reasonable levels.

Accommodating Demand for Commercial Harbor Facilities

Kauaʻi's two commercial harbors at Nāwiliwili Harbor and Port Allen are also owned and operated by the State through the DOT's Harbors Division. Nāwiliwili Harbor serves as the primary commercial harbor for Kauaʻi with facilities for handling both overseas and inter-island general and containerized cargo. The harbor is also used for charter boat fishing and recreational boating and is a port-of-call for passenger cruise ships. Port Allen is a popular port for excursion and charter boat operations but is not currently equipped to accommodate cruise ships.

The *Kauaʻi Commercial Harbors 2025 Master Plan* (CHMP) was updated in 2001 and contains recommendations for both harbors through the year 2025. Kauaʻi depends almost entirely on ocean transport for its essential commodities, including food, clothing, fuel, automobiles, and many other goods. Ocean freight is also used to export goods within and outside the State. The K-CHMP emphasized the need to ensure commercial harbors can accommodate projections of cargo volumes through the year 2025, which were used to develop facility recommendations.

Nāwiliwili Harbor should be able to accommodate demand for overseas and interisland shipments through 2025, but beyond that, expansion may be needed. A State-owned area adjacent to the existing terminal was identified for possible expansion of the overseas terminal in the CHMP. Interisland terminal needs may also be met by harbor reconfiguration or additional land acquisition.

Valuing Small Boat Harbors as Important Recreational Resources

Small boat harbors are a valued recreational amenity on Kauaʻi. They are managed by the State Department of Land and Natural Resources (DLNR) Division of Boating and Recreation (DOBOR). There may be opportunities for the County to support DOBOR in applying for grants and funding, providing parking, and seeking expedited permitting for maintenance of small boat harbors.

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Work with DOT Airports to allocate space for drop-off and pick-up locations for shuttles that transport visitors to popular resort destinations.
- b. Do not support the expansion of the Princeville Airport, except as a parking hub/gateway for people visiting the North Shore.

2. PARTNERSHIP NEEDS

- a. Support DOBOR with master planning and acquiring funding for expansion and maintenance of all small boat harbors.
- b. Update the Līhu'e Airport Master Plan and address capacity issues.
- c. Collaborate with HDOT Airports Division in the implementation of the TAM.
- d. Collaborate with HDOT Airports Division and other agencies in future planning of land uses at Burns Field in Port Allen as a part of the Hanapēpē-'Ele'ele Community Plan.



Nāwiliwili Harbor, Līhu'e District

V. SHARED SPACES

The public realm belongs to all – and must be planned and designed in consideration of all users’ needs from keiki to kūpuna. Shared spaces, also known as “civic space”, are the areas used for everyday community activities such as shopping, recreation, and socializing. Kauaʻi’s most important shared spaces are its town centers, streets, beaches and parks.

Policies and actions for shared spaces are aimed at making town centers, parks, paths, and other common areas more inviting, safe, functional, and vibrant. They should be places where people can relax, interact, and enjoy the things that make Kauaʻi special.

Shared spaces also provide a connection to place. When the community is involved in the design and activation of shared spaces, they become points of pride and hallmarks of uniqueness. From bus stops to public art, park design, and landscaping, there are a multitude of ways that Kauaʻi’s communities can put their imprint on shared spaces.

This section includes actions for Town Centers, County Parks, Linear Parks and Trails, Passive Parks, and State Parks.

A. Town Centers

Kauaʻi’s small towns are the pride of the island, with historic charm and unique character. These town centers serve as hubs for activity, commerce, and interaction. In the digital and automobile age, many town centers have declined and independent businesses have closed. To perpetuate and celebrate our unique communities, we have an opportunity to revitalize town centers with policies that encourage a mix of businesses and housing, along with attractive design and safe sidewalks.

The Critical Role of Town Centers

Kauaʻi’s town centers are the primary milieus for daily civic, business, and commercial activities in the community. Both existing and future town centers are designed “Neighborhood Center” on the Future Land Use Map (Chapter 5). In Līhuʻe, some town center areas are designated “Urban Center”. Descriptions of the designations are found in Chapter 4. These centers include stores, restaurants, professional offices, schools, libraries, health clinics, and other services. Residents place a high value on their historic towns and efforts to revitalize business and generate economic activity are ongoing in Waimea, Hanapēpē, Kōloa, Līhuʻe, and Kapaʻa. Town Centers are identified on the Land Use Maps in Chapter 5 as “Neighborhood Center.”

Town Centers Must Be Vibrant Shared Spaces

The General Plan supports focused development within towns. More intense and efficient use of our existing urban space will protect the open space and rural character so important to Kauaʻi residents. For this type of development, known as infill development, to occur, both the infrastructure capacity and physical environment of town centers must be improved. At the same time, redevelopment must be balanced with protection of historic structures. The preservation of historic plantation architecture creates sense of place, allowing residents and visitors to feel connected to the town’s past. In short, our town centers must be vibrant shared spaces. This means that in addition to being compact and walkable, town centers must have environmentally and aesthetically attractive features such as street trees, green spaces, convenient and safe pedestrian access, and appealing building facades or public art.

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Encourage vibrant shared space and destinations in town centers by:
 - 1. Implementing design standards to ensure the aesthetic character of buildings blends in and matches the desired scale and character of the town.
 - 2. Allowing historic buildings on small lots to redevelop without the imposition of new setbacks or off-street parking requirements.
 - 3. Siting new commercial development contiguous to towns, within walking distance of residential development,
 - 4. Supporting the creation of and improvement of venues for art and culture.
 - 5. Providing comfortable and safe walking environments, including context-sensitive sidewalks along main roads.
 - 6. Enhancing shade resources, including trees on streets and in public parks, and improving criteria for species selection and programs for tree maintenance.
 - 7. Providing more on-street parking.

2. PLANS AND STUDIES

- a. Acknowledge the important role of town squares and other civic space in Town Centers and seek to improve usability of such venues.
- b. Develop improved criteria for species selection and maintenance of street trees and landscaping.
- c. Support town planning that includes establishing or updating design standards through Community Plans.

3. PARTNERSHIP NEEDS

- a. Foster civic engagement in Kaua'i's communities through placemaking and partnerships with community organizations and networks.
- b. Create and conduct community events that bring people together.
- c. Engage in partnerships to activate and revitalize public spaces with artwork, programs, and performances.

4. PROJECTS AND PROGRAMS

- a. Support the implementation of the Līhu'e Town Core TIGER grant and encourage similar economic revitalization projects in other town centers.
- b. Construct centralized parking lots in towns with parking management issues.

B. Parks

Our County park system is an invaluable public asset – essential to both Kaua'i's economy and sense of community. Parks should provide abundant opportunities for residents and visitors to experience the island's renowned beaches and coastline, and also strengthen community fabric through shared space and amenities for play, exercise, socializing, and enjoying nature.

Kaua'i's park system comprises 85 properties varying in size and use, from beach parks to neighborhood centers. Special parks include the 18-hole public golf Wailua golf course, and cultural preserves at Ka Ulu a Paoa, Ke Aku A Llaka, and Kaneioluma. County parks are managed by the Department of Parks and Recreation, which was created by Charter in 2006. Recently, the Department began systemic facility upgrades, ADA accessibility improvements, and launched a cultural stewardship agreement to restore Kaneioluma. Since 2000, the park system expanded to include Ke Ala Hele Makalae – the East Kaua'i Shared Use Path – and Black Pot Park expansion. The location of parks is shown on the Public Facilities and Land Use Maps in Chapter 5.

The range of parks include:

- ▶ Regional Parks (serve entire County and have specialized recreation facilities)
- ▶ District Parks (serve several neighborhoods with structured recreation activities)
- ▶ Beach Parks (support wide range of marine recreation activities)
- ▶ Neighborhood Parks (playground and open space for surrounding local community)
- ▶ Special Use Areas (golf courses and other unique facilities)
- ▶ Passive Parks
- ▶ Linear Parks (addressed in Linear Park subsection).

Improving Park Accessibility for Greater Equity

Park accessibility is an important issue, particularly from an equity perspective. These invaluable public assets allow residents to enjoy a robust outdoor lifestyle and provide a wide range of opportunities for all ages to experience and appreciate the island's natural environment. Parks should be safe and accessible for people of all ages and abilities – and have facilities available for a range of users. ADA requirements ensure a certain level of accessibility is provided, but there are other aspects as well, such as having sufficient parking, or just the simple distance of parks from residential areas with significant numbers of seniors and/or children. Access for seniors is particularly important as the County's park system needs to accommodate an aging population. Priority should also be given to communities across the island with a high degree of low-income households, children, and kūpuna. These areas include Kalāheo, Waimea, Anahola, Puhi, and Hanamā'ulu, all of which are comprised of predominantly local residents.

Passive Parks commonly referred to as “pocket parks,” provide small, landscaped refuges within developed areas to allow space for small children to play, or for adults to sit and enjoy the outdoors. They also serve as ‘civic spaces’ where residents can get to know one another and discuss community issues. Passive Parks are generally less than one acre, and may be as small as 2,500 sq. ft – the size of a very small house lot. They are particularly important in large, dense urban areas where there is little open space.

Maintaining Our Existing Parks

Given the extensive use of Kaua'i's parks by residents and visitors, park maintenance is a very visible and important governmental function. Park management is challenging when dealing with a large number of properties spread around a jurisdiction, and with limited financial resources and personnel. A survey

conducted as part of the County's *Parks and Recreation Master Plan (2013)* found that improving the maintenance of existing parks ranked as the most important issue. Overall, County parks are heavily used and require more maintenance and upgrades than they currently receive. Maintenance of existing parks is extremely important.

While the Regional and District Parks attract the greatest numbers of users and are easier to maintain from a resource allocation perspective, the County needs to maintain all of its parks to serve the diversity of users on the island. This challenges the available resources and illustrates the need to diversify sources of financial and in-kind support. The County created an important new funding mechanism through the Public Access, Open Space and Natural Resources Preservation Fund, enacted in 2002. This Fund receives 1.5% of real property taxes and can be used for a wide range of land acquisition types to support the parks system. The *Parks and Recreation Master Plan (2013)* lists other sources of funding, including facility use fees, and State and Federal grant programs for land acquisition, facility planning, rehabilitation and construction, and trail restoration. Additional support is possible through partnerships with the private sector and community through efforts like Adopt-a-Park programs, recreation partnerships, and volunteer clean-up and improvement programs.

Functional Neighborhood Parks to Support Growth

The neighborhood park is integral to a strong and connected community. It provides the vital and shared space needed to support infill development and new growth. Kaua'i has many neighborhood parks, but most do not provide the full range of facilities desired by surrounding residents. We need to improve the usability of our neighborhood parks, and construct and maintain playgrounds, walking paths, seating, and pavilions. Facilities for children and the aging population must be included in neighborhood park design.

The Challenge of Beach Parks

Beach parks are among Kaua'i's most treasured scenic and recreational assets. They accommodate a great range of uses by visitors and residents alike, both in and out of the water. Sadly, there are those who take advantage of common areas through vandalizing, littering, illegal camping, and crime. Despite the oft-repeated saying "take only photos, leave only memories," many cannot resist collecting shells, rocks, and other souvenirs from beach parks.

Security and maintenance of Kaua'i's beach parks are ongoing concerns. Many of the facilities, such as restrooms and picnic areas at the most heavily frequented beach parks, are in need of more maintenance, upgrades, and repairs. This does not escape the notice of our residents and visitors, who feel that many of Kaua'i's park facilities do not measure up.

The most popular beach parks in South Kaua'i, East Kaua'i, and North Shore are getting more crowded, and uses occasionally conflict. It is becoming harder to find places and times where residents can enjoy traditional recreational activities in an uncrowded setting. In order to preserve the local lifestyle, many residents have expressed need to reserve some areas for primarily local use, rather than promoting them heavily to visitors. Visitor safety is a valid concern, especially where water safety officers are not present.

Access and parking for beach parks can limit the enjoyment of residents and visitors. Parking areas for many popular beach parks and access points are too small to accommodate demand. And in some cases, developments around popular beaches provide little to no public parking, forcing people to find street parking along the highway or in residential areas.

Shoreline erosion and sea level rise are discussed in other areas of the General Plan, however it is worth mentioning here as Kaua'i's beach parks are profoundly affected by ongoing beach loss. It is important to preserve and treat well the areas that we have remaining, and ensure they can be enjoyed by all.

Moving Forward with Undeveloped Park Space and Future Parks

There is a substantial amount of park land that is undeveloped or underutilized and could be used to support a variety of park types and recreational uses. A range of park sizes and types in proximity to neighborhoods supports healthy activities and builds community cohesion. Park lands can be used for broad or specialized uses, from community gardens, dog parks, skate parks, and larger multi-use park complexes.

Through the General Plan, Kauaʻi has an opportunity to require integration of parks and other civic spaces into communities. Community Plans can identify areas appropriate for park uses in each district. A Form-Based Code Civic Space designation with associated standards can be applied to areas intended for parks.

Park creation and improvement is an ideal area to explore public and private partnerships. Creative funding sources and maintenance solutions can be identified with the help of community partners. Community involvement allows parks to be better tailored to the unique needs and identity of each neighborhood.

1. PERMITTING ACTIONS AND CODE CHANGES

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| <ul style="list-style-type: none"> a. Provide comprehensive, well-designed, and highly functional parks and recreational facilities that meet public needs, provide attractive places to exercise, accommodate diverse groups and activities, make suitable use of resources, and are compatible with surrounding uses. b. Revise standards relating to permitting of public facilities to more efficiently coordinate the | <ul style="list-style-type: none"> development and expansion of parks. c. Revise the Park Dedication Ordinance to allow in-lieu funding expenditure on facility capital improvements. d. Ensure large residential development projects provide a range of civic space and functional parks. |
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2. PLANS AND STUDIES

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| <ul style="list-style-type: none"> a. Coordinate Community Plan updates with park master planning and seek ways to ensure safe routes to parks, especially in areas with high concentration of youth. b. Explore utilization of vacant or underused County-owned land for community purposes. | <ul style="list-style-type: none"> c. Develop a master plan for Salt Pond Beach Park, to incorporate preservation, and where feasible, restoration of the salt pans for the continuance of salt-making by traditional stewards. |
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3. PARTNERSHIP NEEDS

- a. Encourage and support the County's park stewardship agreement program.
- b. Develop a playground development and rehabilitation program to provide high quality play environments in parks, especially in underserved communities.
- c. Explore alternative sources of funding for priority park improvements, such as crowdfunding and community initiatives or collaborations.
- d. Address illegal camping in parks.
- e. Educate the public at County beach parks regarding sensitive coastal and marine ecosystems and wildlife, and how the public can do its part to protect these precious resources.
- f. Support implementation of public/private programs for beach and dune restoration, especially at beach parks experiencing erosion such as Po'ipū Beach Park.

4. PROJECTS AND PROGRAMS

- a. Prioritize the building and maintaining of parks, playgrounds, and green spaces in low-income neighborhoods with concentrations of youth.
- b. Support the development of "Safe Routes to Parks" projects.
- c. Expand shared-use paths and other facilities for walking and biking within parks.
- d. Enhance parks by making them more conducive to physical activity (besides just ball fields and beaches) by adding walking paths, play equipment for more than one age group, skate parks, disc golf, tennis facilities, and other improvements.
- e. Support priority park improvement projects in the Kaua'i Parks Master Plan.
- f. Expand indoor recreation spaces at selected parks.
- g. Develop prototype designs for new facilities such as restrooms and pavilions to shorten design and implementation times, and help standardize repair and maintenance.
- h. Promote more use of parks as social spaces through facility improvements, such as new pavilions, more shade trees and places to sit.
- i. Enhance opportunities for all users to enjoy parks and other public recreation areas by providing accessibility features at popular facilities such as beach parks and other designated locations.
- j. Develop and install uniform signage at County parks.
- k. Maintain usability of local neighborhood parks through basic repairs and rehabilitation.
- l. Ensure safety and cleanliness at Kaua'i's beach parks.

- m.** Use parks to promote a sense of place and embrace Kauaʻi's unique ecology and cultural values.
- n.** Use Crime Prevention through Environmental Design (CPTED) to address safety when planning park improvements.
- o.** Provide canopy trees and shading at regional parks, such as over unshaded bleachers, to guard against heatstroke and other heat hazards especially during football, baseball and soccer seasons.



Playground in Po'ipū, South Kaua'i District

C. Linear Parks and Trails

Smaller parks and trails provide safe, naturally-landscaped corridors or more ‘bite-sized’ scenic and recreational areas within larger developed areas or along roadsides. Linear Parks are long and narrow, primarily for pedestrian and/or bicyclist access along scenic pathways with minimal traffic interference. The only Linear Park on Kauaʻi is the 26-mile Ke Ala Hele Makalae path along the coast through East Kauaʻi and Līhuʻe.

Pedestrian and biking trails are special public recreational assets. They offer a scenic and safe refuge from traffic and development, allowing residents and visitors to experience more fully Kauaʻi’s rich environment. Trails are identified in the Heritage Resource Maps in Chapter 5.

1. PERMITTING ACTIONS AND CODE CHANGES

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| <p>a. Provide safe and convenient access to beaches and inland resources through the park system.</p> | <p>d. Increase opportunities for public access to mountainous and forested areas in a way that is ecologically sustainable.</p> |
| <p>b. Identify and design new shared-use paths to provide safe corridors for pedestrians and cyclists.</p> | |
| <p>c. Encourage the development of access ways to the path, when development is adjacent to or near a shared-use path.</p> | |

2. PARTNERSHIP NEEDS

- a.** Explore expansion of the Na Ala Hele trail system, especially in Planning Districts without formal trails.

3. PROJECTS AND PROGRAMS

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| <p>a. Complete Ka Ala Hele Makalae from Anahola to Līhuʻe.</p> | <p>c. Construct the North Shore Share Use Path.</p> |
| <p>b. Construct the Waimea-Kekaha Shared Use Path.</p> | <p>d. Construct a South Kauaʻi Shared Use Path.</p> |

D. State Parks

Kauaʻi's more than 14,000 acres of State parks are world renowned, and include the Nā Pali Coast and Waimea Canyon. Several parks are Hawaiʻi's most visited with over 500,000 recreational visits a year. In addition to being major visitor destinations, state parks improve residents' quality of life by providing access to trails, hunting areas, coastlines and beaches. At the same time, upkeep and maintenance of state parks is a persistent issue, reducing the quality of the park experience for resident and visitor alike.

Improve the Experience of Visitors and Residents at State Parks

The State has nine park properties on Kauaʻi (See Table 2-2), including larger parks at Kōkeʻe and Waimea Canyon, and the world-famous Nā Pali Coast Wilderness Park. While the County doesn't have a direct role in managing these, it plays important partnership roles in helping to ensure the best possible management and improvement of them for the Kauaʻi residents and visitors who access them. The degree of park-related problems is illustrated by a recent visitor survey (*Kauaʻi Visitor Survey, 2015*). Approximately 85% of visitors were very satisfied with Kauaʻi's beaches, whereas only 61% - 69% of them were very satisfied with the island's parks. Only 41% to 46% were very satisfied with Kauaʻi's roads and public services.

Table 2-2. State Parks on Kauaʻi

Park Name	District	Master Plan Status
Kōkeʻe State Park	Waimea-Kekaha	Approved in 2013.
Polihale State Park	Waimea-Kekaha	Currently no master plan.
Waimea State Park	Waimea-Kekaha	Approved in 2013.
Waimea State Recreational Pier	Waimea-Kekaha	Currently no master plan.
Russian Fort Elizabeth State Park	Waimea-Kekaha	Currently no master plan.
Ahukini State Recreational Pier	Līhuʻe	Currently no master plan.
Wailuā River State Park	Līhuʻe / East Kauaʻi	Currently no master plan.
Hāʻena State Park	North Shore	Draft plan released in 2015.
Nā Pali Coast State Park	North Shore / Waimea-Kekaha	Currently no master plan.

Provide Dedicated Funding Resources for State Park Improvements

In addition to traffic and parking issues at popular destinations, Hāʻena State Park, Kalalau (Nā Pali Coast Wilderness Park), Kōkeʻe State Park and Waimea Canyon State Park are underfunded relative to the demands on them. For example, limited parking at Hāʻena State Park has led to illegal parking and frustration for visitors and residents seeking to visit the many attractions nearby, and has contributed to high rates of theft and vandalism at the parking lot.

State Parks has been working with communities and stakeholders to develop master plans for major parks, such as Hā'ena, Waimea and Kōke'e. In order to implement solutions and improved park facilities per the master plans, funds will have to be raised – possibly through entry fees for visitors at heavily accessed areas.

1. PARTNERSHIP NEEDS

- a. Support implementation of the Waimea Canyon, Kokee, and Hā'ena State Park Master Plans.
- b. Support master planning efforts for Russian Fort, Polihale and Wailua River State Parks.
- c. Support adequate funding and staffing for capital improvements, including maintenance and enforcement for public parks, trails and recreation areas.
- d. Work with State Parks to improve and coordinate infrastructure and transportation improvements to reduce visitor impacts.
- e. Support the establishment of State Park entry fees for visitors to provide revenue to fund master planned projects and improvements.



Hiking trail in Kōke'e State Park, Waimea-Kekaha District

VI. ECONOMY

Kauaʻi strives to be a place where the economy is resilient, small businesses thrive, and all people have opportunities to access education, training, and employment. We must collaborate to find creative ways to leverage our assets to help other industries grow. We have to do this while honoring the rural character and natural beauty that we need to preserve.

The challenges to getting there are daunting. Kauaʻi has the highest cost of living in Hawaiʻi. A family of four here must earn nearly 10% more on average than the rest of the State, and more than 160% of the State minimum wage to meet their basic needs (*Self-Sufficiency Standard: Estimates for Hawaiʻi 2014*, DBEDT 2015). To accomplish this, many residents have to work multiple jobs, supplement income with home grown food or cottage businesses, and commute long distances to work from the neighborhoods that have affordable housing.

Both the 2000 General Plan and the Comprehensive Economic Development Strategy (2016 Draft) for Kauaʻi identify the need to encourage diverse economic growth opportunities that will provide living-wage employment to Kauaʻi residents.

Policies and regulations that enable economic revitalization, provide for affordable housing in each community, facilitate partnerships for education and job training, and protect Kauaʻi's treasured qualities, can help address these needs. The General Plan policies, maps, and actions address these concerns. Land Use Maps and associated policies establish land use patterns, infrastructure improvements, and zoning changes that will help revitalize commercial districts. Actions for agriculture and small business support programs and partnerships for education, small business development, and growth of promising sectors such as agriculture, clean energy, and arts and culture. Actions for tourism, the watershed, and maps for Heritage Resources uphold the importance of tourism while preserving the quality of Kauaʻi's treasured destinations.

Kauaʻi Economic Development Goals 2016-2020 (CEDS 2016)

- 1. Build, attract and retain a 21st century workforce.*
- 2. Encourage innovation and the development of small, mid-size and large businesses and organizations.*
- 3. Increase adaptability and resilience, particularly regarding natural disasters and climate change.*
- 4. Increase collaboration.*
- 5. Ensure sustainable development.*
- 6. Achieve greater food self-sufficiency.*
- 7. Develop plans and continue to build capacity for economic development in each of the six target industry clusters.*
- 8. Enhance the community's ability to thrive.*

Cultivating Economic Opportunity

The State and County recognize three factors key to economic development: talent, infrastructure, and capital. According to the Draft *Kauaʻi Comprehensive Economic Development Strategy* (CEDS, 2016), "*Kauaʻi is a talent-rich community in need of more job creation, workforce development, infrastructure improvements and greater access to capital.*" Kauaʻi's talent and entrepreneurial skills are evidenced by the many small businesses that thrive across the island. More than 57% of Kauaʻi's businesses have less than 5 employees (*State of Hawaiʻi Data Book*, 2014).

To realize Kauaʻi's goal of becoming more resilient and sustainable, small businesses and the infrastructure that supports them need to be prepared and protected so they can recover from unexpected events. There will need to be a diversity of living-wage jobs in different sectors, so that the island's dependence upon tourism is lessened. And, these jobs must be supported by a skilled and educated workforce. The CEDS acknowledges this, and identifies goals with objectives and priority actions to address the way forward. The text box lists the eight goals outlined in the CEDS 2016 update.

Diversifying Kauaʻi's Economy

The *Draft Kauaʻi Comprehensive Economic Development Strategy* (2016) recognizes that a diverse economy is needed to support sustainable economic growth on Kauaʻi. Six target industry clusters are identified as promising areas for growth:

- ▶ Food & Agriculture
- ▶ Sustainable Technologies & Practices
- ▶ Science & Technology
- ▶ Health & Wellness
- ▶ Sports & Recreation
- ▶ Arts & Culture

Together, these six sectors comprised approximately 30% of the private sector jobs on Kauaʻi in 2014, almost as large a share as tourism. The actions identified in the CEDS are aimed at providing infrastructure, capital, and workforce to support the growth of these sectors.

Balancing Growth and Sustainability

There is tension between the need for jobs and economic growth, and the protection of the rural character and natural beauty that make Kauaʻi special. These very qualities form the basis of Kauaʻi's appeal as a visitor destination. This means that a careful balance is needed to protect valued resources from "over-enjoyment" while making them accessible for visitors and residents alike.

The CEDS recognizes that Kauaʻi's approach to economic development must support the General Plan vision and be sustainable, comprehensive, and collaborative. Growth must support and be compatible with Kauaʻi's rural character and the desire of its residents to work close to home.

Collaboration & Partnerships for Growth

Growing economic opportunity requires cooperation and collaboration in the spirit of Kauaʻi Kākou. Kauaʻi Community College is a valued partner in developing education and workforce training to prepare youth and young adults for careers. The Chamber of Commerce, Kauaʻi Economic Development Board, and other business associations and economic development groups lead initiatives and partner with the County to support the needs of businesses. The County relies on these partnerships in its efforts to attract new industries and grow existing businesses.

The General Plan policies and actions support the goals of the CEDS to encourage the growth of promising industries, develop a competitive workforce, and strengthen small businesses. The following sections discuss policy and actions for Tourism, Agriculture, and Small Businesses.



A. Tourism

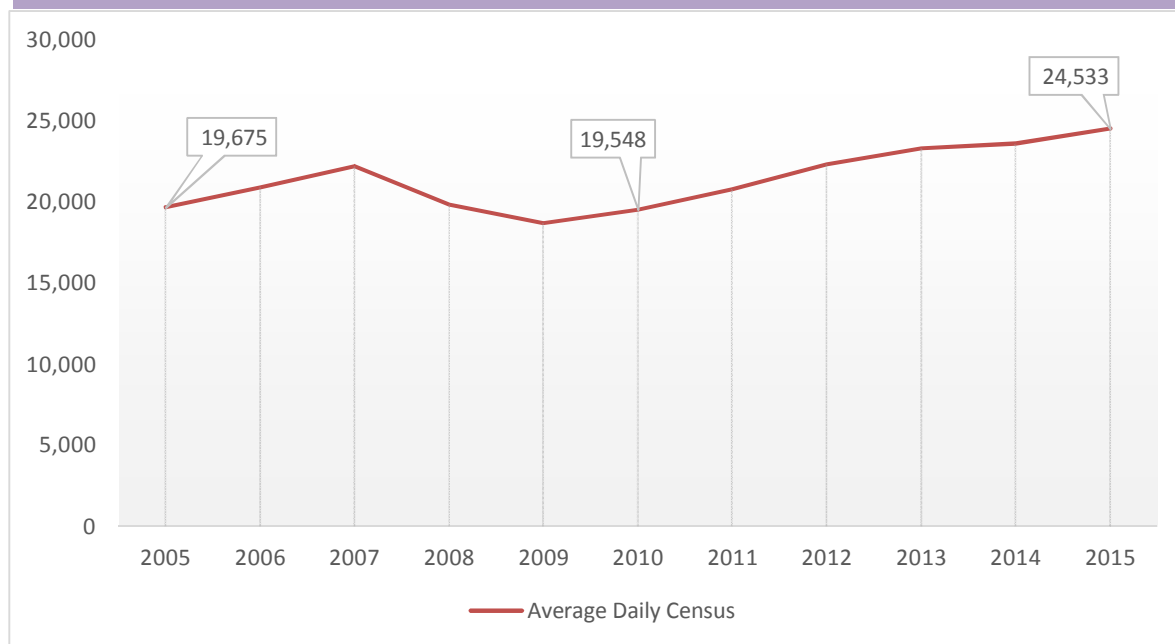
The visitor industry is the mainstay of Kauaʻi's economy. It accounts for a third of the County's total economic output and generates more than a quarter of the jobs. It contributes substantially to County tax revenue. The policy of the General Plan is to uphold Kauaʻi as a unique visitor destination by focusing on revitalization and limiting new resort growth to existing Visitor Destination Areas.

Managing Growth of the Visitor Population

Every year, over 1.1 million visitors are drawn to Kauaʻi's beautiful environment and rich array of cultural and outdoor activities. Research shows that most visitors are attracted to the island's peaceful and unhurried setting. These preferences align well with residents' desire to preserve Kauaʻi's natural beauty and small town character.

As much as visitors support Kauaʻi's economy, they also place stress on infrastructure and increase the demand for public services. As shown in Figure 2-8, in 2015 Kauaʻi had an average daily visitor census (ADVC) of 24,533 visitors, enough to increase Kauaʻi's population by more than 20 percent at any given time. ADVC is variable due to many factors including economic conditions, natural disasters, political conflicts, and others. On Kauaʻi, ADVC has been slowly growing at an average rate of about 2% per year since 2000, with a slight dip due to the economic recession of 2008-2009.

Figure 2-8. Average Daily Visitor Census (2005-2015)



The General Plan policies clearly articulate the need for managing tourism growth and associated impacts through legally available means – this includes regulating TVR's and other resort uses outside Visitor Destination Areas (VDA's), not expanding existing VDA's, and removing Resort-designated lands that do not have existing entitlements.

Defining Kaua‘i’s Carrying Capacity for Tourism

Many in the community believe that Kaua‘i has already hit its “carrying capacity” with regard to certain infrastructure systems, particularly the most heavily utilized parks and road networks. The traffic congestion along the highway in Wailuā-Kapa‘a is one of the most oft-cited examples of this. Popular destination such as Hā‘ena State Park are actively looking for ways to address over-crowding and other impacts through measures such as limiting parking.

So what is Kaua‘i’s carrying capacity for tourism? The *Kaua‘i Tourism Strategic Plan 2016 – 2018 Update (2015)* (KTSP) noted that when ADVC exceeds 25,000, there is a noticeable decline to both the visitor experience and the residential quality of life. As shown in Table 2-3, this now happens on a regular basis. The daily visitor count surpassed 26,000 in December 2014, and triggered visitor complaints. In July of 2016 the visitor count was nearly 30,000 per day.

Acknowledgement of a tourism carrying capacity is occurring at the State level as well - the State of Hawai‘i *Climate Adaptation Initiative* (Act 183) calls for analysis of a maximum annual visitor carrying capacity for the State and Counties.

The Visitor Unit Inventory

Resort and hotel properties account for 20% of the total revenue from Real Property, and vacation rentals account for an additional 21% (County of Kaua‘i Real Property Data, 2016). Over 40% of the County’s Real Property tax revenue comes from visitor accommodations.

Today’s visitor plant inventory is a mix of hotel units, timeshares, B&B’s, vacation rental units and condo hotels (See Figure 2-9). The majority of Kaua‘i’s visitor accommodation falls in the deluxe to luxury price range. Less than 3% of Kaua‘i’s accommodation is considered budget (campsites are not considered to be units).

The number of total visitor units on Kaua‘i dipped following the passage of three ordinances (864,876, and 904) that increased regulation on transient vacation rentals or units (TVR’s or TVU’s) outside of designated Visitor Destination Areas (VDA). The ordinances established a non-conforming use grandfathering process for the operation of TVR’s outside of the VDA. Under the current law, TVR’s are not allowed outside of the VDA unless they have an active Non-conforming Use Certificate.

Table 2-3. 2016 Average Daily Visitor Census by Month to Date

Month	Average Daily Census
January	27,581
February	24,817
March	24,773
April	22,510
May	22,153
June	29,135
July	29,258
August	24,082
September	20,979
October	22,244
Year-to-Date Average	24,753

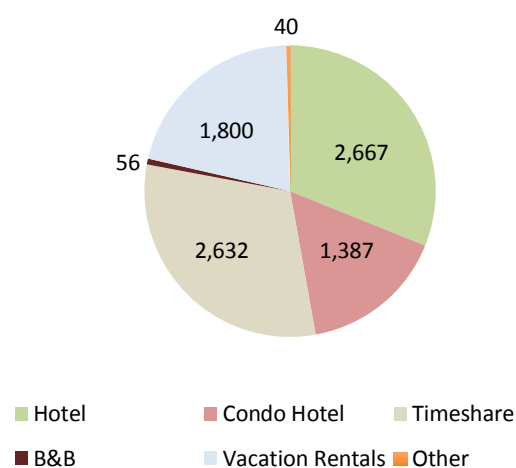
Source: Hawai‘i Tourism Authority, 2016

The Impact of Visitor Unit Inventory Expansion

Kauaʻi’s visitor inventory could expand by 3,000 units, considering the amount of “pipeline” projects which have received their final discretionary permit. Given that each unit supports an average of two or three visitors, construction of these units would expand ADVC by several thousand. Although the County’s projections do not foresee a drastic expansion of the visitor population over the long term, many are concerned about the impact of such an increase on Kauaʻi’s already burdened infrastructure.

Possibly compounding the potential problem are hundreds of acres of resort-designated land without entitlements, which have the potential to further expand the inventory. There was strong support to eliminate this potential in order to first absorb and manage impact from existing “pipeline” projects. The resulting policy is not in favor of expanding Visitor Destination Areas (VDA’s), even if such action was recommended in a previous plan. Another measure taken is removing General Plan Resort designations on non-entitled areas. Kauaʻi’s VDA’s are shown on Figure 2-10. Resort designations are described in Chapter 4, and Land Use Maps in Chapter 5.

Figure 2-9. 2015 Visitor Plant Inventory (# of units)



Managing Visitor Impacts on Infrastructure

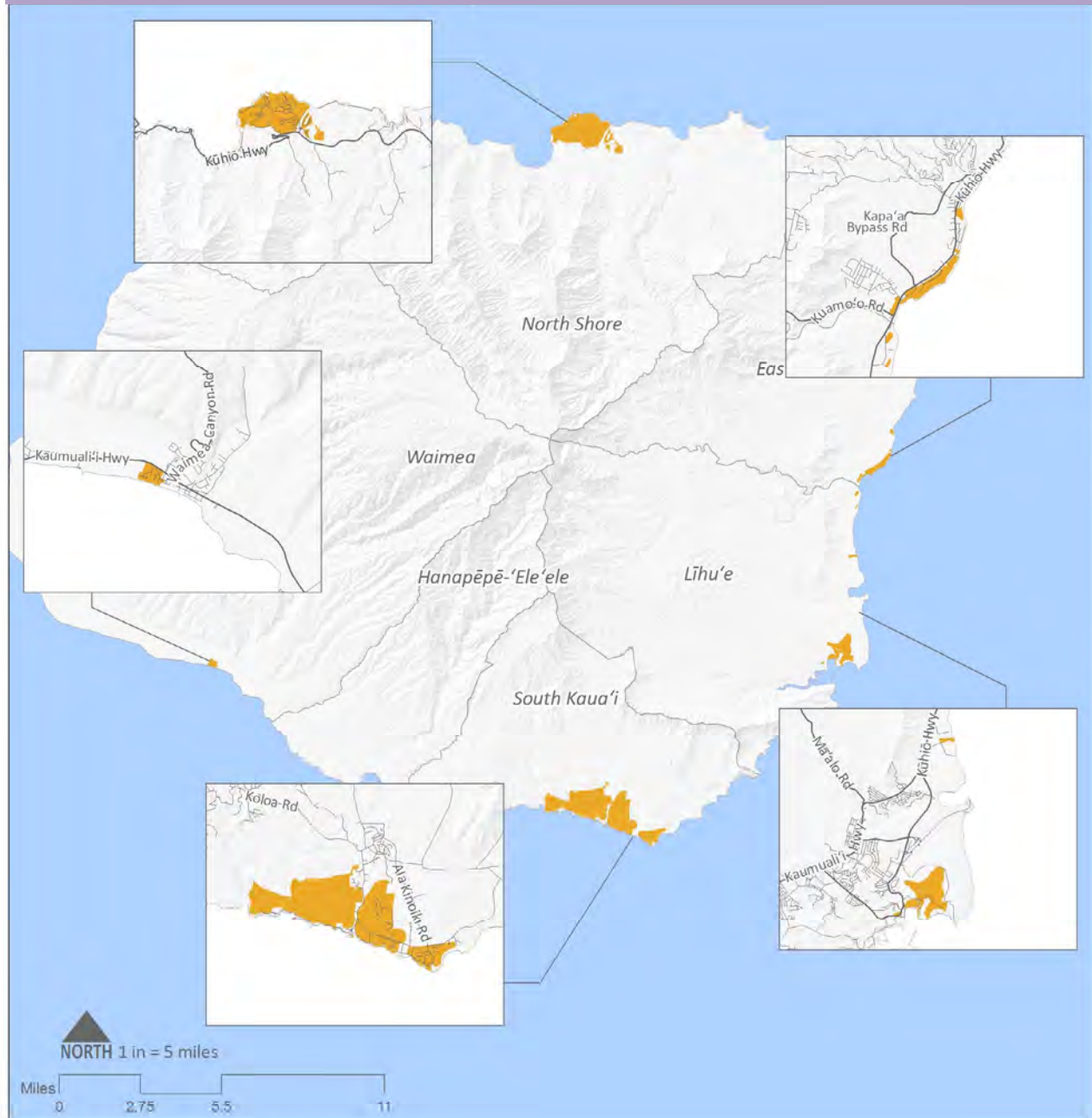
Improving the visitor experience and reducing impacts will also depend on adopting new ways of doing things. Taking shuttles to popular destinations instead of driving private cars is one example. Fortunately, Kauaʻi has a high percentage of repeat visitors – as much as 70%, according to the KTSP. Learning about and accepting different ways of accessing Kauaʻi’s attractions should be easier for experienced visitors, who might also appreciate such efforts to preserve the environment and culture. Managing visitor impacts also includes improving visitor facilities and parking at both County and State parks, and ocean safety at beaches. Given that impacts disproportionately affect certain areas of the island, particularly the North Shore and South Kauaʻi districts, shuttle efforts, parking improvements, and other solutions should be focused there.

Visitor and resident interaction is another place for improvement, particularly with respect to the awareness and appreciation of Hawaiian culture. One of the objectives of the *Kauaʻi Tourism Strategic Plan* is to reinforce authentic Native Hawaiian culture and local Kauaʻi culture. These are the qualities that make Kauaʻi truly unique as a visitor destination, since there are many other tropical and subtropical beach areas in the world.

Merging these common sets of values between visitors and residents can sustain a strong tourism sector that has a light footprint on Kauaʻi’s environment and meshes well with local culture and lifestyles. Effectively doing this first requires managing future growth in the visitor industry so it does not exceed the recognized carrying capacity of Kauaʻi’s resources and infrastructure. In addition, it requires improved transit options, better management of parks and beaches, and enhanced interactions with people involved in the visitor industry as well as other Kauaʻi residents. The ultimate

goal is to balance the visitor industry with natural and cultural preservation, the protection of community fabric, and the overall quality of life for residents.

Figure 2-10. Kaua'i Visitor Destination Areas



- Planning District Boundary
- Major Roads
- Roads
- Visitor Destination Areas



Resort area in Po'ipū, South Kaua'i District

1. PERMITTING ACTIONS AND CODE CHANGES

- a.** Encourage the revitalization -- rather than expansion -- of Kaua'i's resort areas in Po'ipū, Līhu'e, Wailuā, and Princeville.
- b.** Focus visitor uses, services, facilities and accommodation in the Visitor Destination Area.
- c.** Do not support expansion of existing Visitor Destination Area boundaries beyond resort-designated areas in this Plan.
- d.** Allow existing resort entitlements to build out and require any non-entitled resort-designated areas in this General Plan to attain full State and County zoning resort-related approvals by the year 2022, or within five years of Community Plan approval if an area is conditionally designated. Also, require short-duration expiration dates should development not be constructed as permitted.
- e.** Where appropriate, negotiate with entitled resort projects to reduce unit count if discretionary permits are sought again.
- f.** Do not provide for any spot-amendments to this General Plan expanding already-designated resort areas.

2. PLANS AND STUDIES

- a. Continually implement and update the Kaua'i Tourism Strategic Plan every three years.
- b. Through the Kaua'i Tourism Strategic Plan, explore development of a maximum annual visitor carrying capacity.

3. PARTNERSHIP NEEDS

- a. Engage partners in implementation of the Kaua'i Tourism Strategic Plan.
- b. Work with resorts, resort associations, and cottage industries to develop alternative transportation options for visitors, including shuttles and car sharing to reduce visitor impact on our roads, highways, and scenic places.
- c. Explore the establishment of a County tax on rental cars to help fund alternative transportation options for visitors.
- d. Work with State Parks to coordinate infrastructure and transportation improvements.
- e. Support the development and promotion of community-driven programs that reinforce the unique sense of place of communities, such as those with historical and/or cultural significance.
- f. Support programs that educate visitors on the vulnerability of Kaua'i's environment and promote sustainable tourism.
- g. Provide visitors with a unique, positive, culturally-rich, and safe experience on Kaua'i.
- h. Encourage visitor programming that heightens cultural sensitivity and cultural exchange and enhances visitor exposure to Native Hawaiian and local cultural values and practices.
- i. Support career preparation programs to attract new employees, especially local residents, to the visitor industry to ensure an available, well-qualified workforce.
- j. Support training and programs for the current visitor workforce to enhance knowledge and understanding of Kaua'i's local culture.
- k. Encourage more use of Native Hawaiian place names and increase understanding of the meanings.
- l. Encourage the visitor industry, airlines and the growing cruise line industry, to buy and promote Kaua'i products and support businesses on Kaua'i. Support career preparation programs to attract new employees, especially local residents, to the visitor industry to ensure an available, well-qualified workforce.
- m. Support the State Department of Transportation's efforts to increase the use of renewable fuel sources by airlines.
- n. Support carbon offset programs and incentives for passengers traveling to and from Kaua'i.

4. PROJECTS AND PROGRAMS

- a. Advocate for lifting the cap on existing Transient Accommodation Tax (TAT) funds distributed by the State to counties, thus increasing the allocation to Kauaʻi for services and infrastructure that support the island community.
- b. Improve route and destination signage to alleviate congestion associated with difficulties in finding desired locations.
- c. Improve waste disposal, collection, and management at popular destinations and provide more recycling options.
- d. Support projects to encourage visitor transportation mode shift from single occupancy vehicles to other modes.



Kalapakī resort area, Līhuʻe District

B. Agriculture

Agriculture is an important element in Kaua'i's identity as a rural place and it represents our greatest opportunity for economic diversification and food self-sufficiency. We can increase the productivity and profitability of all forms of agriculture by nurturing small-scale farms, promoting crop diversity, and through stronger partnerships. For this to occur, major challenges will have to be surmounted – from the upkeep of aging agricultural infrastructure to halting the tide of residential sprawl.

Agriculture Today

Agriculture and food industries remain one of the most promising economic sectors on Kaua'i. It is a substantial source of employment, with about 3,601 jobs on Kaua'i in 2014. It is also a sector that supports Kaua'i's vision of remaining a rural island, preserving open spaces, and producing more food and resources. While the number of jobs in agriculture has not increased substantially since 2001, earnings have increased by 53% to \$30,511 average annual earnings per employee (*Draft Kaua'i Comprehensive Economic Development Strategy Update*, 2016). Total earnings in the sector are upwards of \$113 million per year.

Kaua'i's agricultural lands are owned and managed by a small number of large

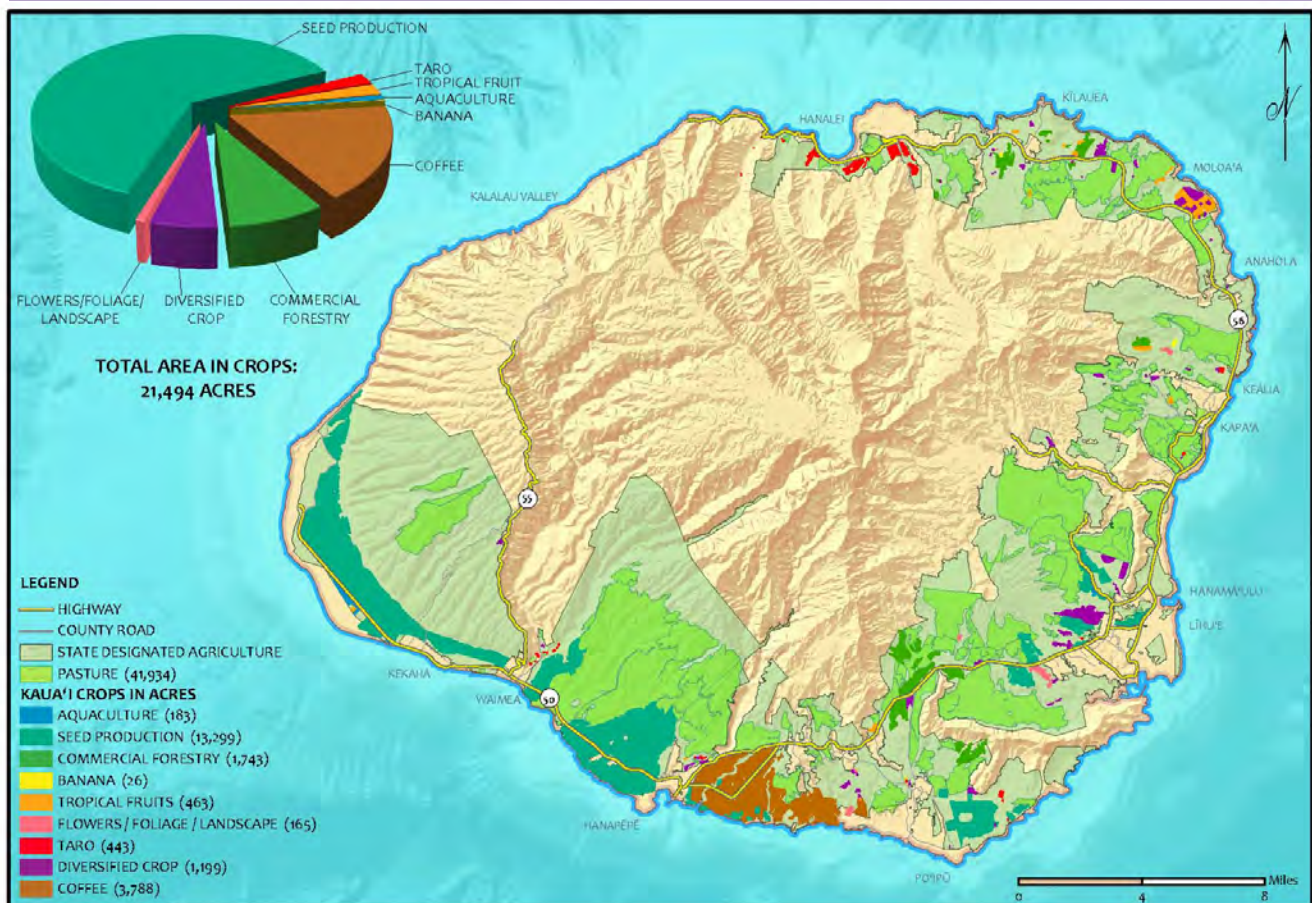
landowners. On the South and West Sides, agricultural land owners include the State, the State Department of Hawaiian Homelands (DHHL), Alexander & Baldwin (A&B), and Grove Farm (*Statewide Agricultural Land Use Baseline Study*, 2015). There are pockets of agricultural land in Līhu'e District, mostly owned by Grove Farm. East Kaua'i's agricultural lands were largely sold off and converted to large lot residential development following the closure of Amfac Hawai'i's Līhu'e Plantation, however there remain some tracts between Hanamā'ulu and Anahola that provide opportunities for cultivation. The North Shore is home to a large portion of Kaua'i's diversified agriculture operations, particularly around Moloa'a and Kīlauea. Taro production is concentrated in and around Hanalei. The North Shore's land ownership patterns are more fragmented, and it is among the most desirable areas for high end housing. This, coupled with regulations that permit agricultural condominiums, exerts development pressure on the North Shore's agricultural lands.

The *Statewide Agricultural Land Use Baseline Study* (2015) provides a snapshot of what is currently grown and raised on Kaua'i (Figure 2-11). Like the rest of the Hawaiian Islands, Kaua'i has shifted out of sugar cultivation within the last few decades, leaving much of its agricultural lands open to other uses. Over 40,000 acres are currently used as pasture for grazing animals, supported by three privately owned slaughtering facilities. The greatest share of Kaua'i's 21,000 acres of cultivated crop lands are in commercial seed production (13,299 acres), followed by coffee (3,788 acres) and commercial forestry (1,743 acres). The island has more taro cultivation than the rest of the state combined, with 443 acres under cultivation.



Produce at Kōloa Sunshine Market, South Kaua'i District

Figure 2-11. Kauaʻi's Agricultural Production (2015)



Source: Hawaiʻi Statewide Agricultural Land Use Baseline Study (2015)

The seed production industry has a much larger presence on Kauaʻi than on any other island, with nearly twice the amount of acreage as Oʻahu. Concerns about pesticide use and the cultivation of genetically modified organisms (GMO) by seed companies and other large agricultural producers have resulted in fact-finding inquiries, lawsuits, and proposed legislation regulating these activities. Nevertheless, these large agricultural operations provide substantial employment opportunities in rural areas of Kauaʻi, particularly Waimea and Kekaha.

This concern has carried throughout the community engagement process leading up to the crafting of this plan. The online survey response included a number of written comments seeking a higher degree of regulatory oversight concerning GMO and pesticide activities. However, given the judgment of the Federal Court striking down the Bill 2491 County ordinance on state statutory preemption grounds, no regulatory proposals are included in this plan. Should State laws be enacted to provide larger County authority for potential regulation of such agricultural activities, the General Plan could consider appropriate policies.

Protecting Important Agricultural Lands (IAL)

The agricultural district is under both State and County land use authority. The State Constitution sets the policy to “conserve and protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency, and assure the availability of agriculturally suitable lands” (*Important Agricultural Lands Study, 2015*). Retaining the integrity of agricultural lands means protection against encroachment and fragmentation.

Pursuant to the constitutional mandate, the State Legislature adopted Important Agricultural Lands (IAL) designation criteria in 2005. Once designated, IAL cannot be reclassified to State Land Use Urban District except under a “super majority” vote of both houses of the state legislature. Owners of these lands qualify for both State and County incentives, but those incentives have not been determined. The County’s IAL Study mapped potential candidate lands and set a goal for the County to lead designation of at least 21,158 acres (*Important Agricultural Lands Study, 2015*). Some major landowners have voluntarily designated their lands a total of 16,263 acres (*Important Agricultural Lands Study, 2015*).

County regulations limit density and subdivision on agriculture lands. Additional controls are needed to discourage development such as “gentlemen estates” – large lot agricultural subdivisions catering to a high end market. Such development patterns are largely opposed by the community. When this type of development does occur, residences and farm dwellings should be clustered to preserve the agriculture land and open space quality, while reducing costs of infrastructure and service provision.

Agricultural Water Infrastructure

The ditches and irrigation systems – vestiges of the plantation era – must be protected and restored. Without viable irrigation systems, the potential for intensive agriculture is jeopardized or lost. Irrigation reservoirs and ditches also retain and channel storm water away from settled areas. The State plans for and manages water infrastructure on State land through the State Agricultural Water Use and Development Plan. Private landowners maintain their own infrastructure, focusing on areas that are intensively farmed. Community partnerships such as the East Kaua'i Water Users Cooperative can also be instrumental in keeping irrigation systems functioning to serve agricultural operations. The condition of ditches outside those areas is variable and assumed to be deteriorating.

An emerging issue is the permitting of water diversion from streams to feed agricultural ditch systems. Many diversions have operated for a long time under a revocable State permit. However, the State now requires that such diversions obtain a water lease. The water lease application process requires environmental and cultural studies, including analysis of inflow stream standards. This may result in stricter diversion limits, which will impact agricultural operations if stream flow decreases.

Promoting Food Self-Sufficiency

The County’s *Important Agricultural Lands (IAL) Study* estimates that 21,158 acres of lands in food production could sustain 70,000 people on a diet of fruits, vegetables, starches (rice and potatoes), fish, chicken, pork, eggs, and dairy. The required acreage increases if beef production is included. Said another way, 1.70 acres per person is needed for food self-sufficiency. This number drops to 0.30 acres per person without beef. The estimate without beef production was used to determine the goal for County-designated IAL. Kaua'i has adequate land to achieve food self-sufficiency, but the market demand may not be in place to meet this goal. However, a strong agricultural sector can strengthen Kaua'i's self-sufficiency by increasing food and resource production for both local consumption and export.

Partnerships to Support Existing and New Agricultural Enterprise

For the agricultural sector to be productive and profitable, agriculture must be recognized as a collection of both large and small businesses supported by a workforce, strong public-private partnerships, and the community. In addition to providing support to established operations, consideration must be given to the many aspiring farmers on both private and state-leased small-scale farms, especially on the North Shore and East Kauaʻi, where many smaller agricultural lots are located. New farmers face barriers to entry such as the high cost of labor and land, government regulations, and stringent thresholds and rules for farm worker housing. Another issue is the lack of tax incentives for active agriculture. If support is not provided, landowners may find it easier to utilize their agricultural lands for passive uses, such as ranching.



Agricultural lands with a backdrop of the Hāʻupu Mountains, Līhuʻe District

Government is involved in the success of agriculture through tax and other incentives, such as water and infrastructure access or improvements, as well as by land use standards to protect agricultural lands and businesses. The community can support agriculture by recognizing its significance in promoting health and wellness and increasing economic independence.

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Ensure lands within the Agriculture designation are used for agriculture and related activities, including farming, aquaculture, commercial forestry, and animal husbandry.
- b. Establish urban growth boundaries or other land preservation easements to limit conversion of agricultural lands to non-agricultural uses.
- c. Develop specific controls on the subdivision and alteration of agriculturally-zoned lands to prevent the dissipation of agricultural potential, the loss of rural character, and the conversion of land use to urban land use designations.
- d. Allow for clustering, with criteria, for landowners of designated IAL.
- e. Amend the Subdivision Ordinance to require preservation of viable irrigation systems – both government-owned and privately-owned – to support the supply of irrigation water to farms.
- f. Support landowner and farmer-initiated designations of important agricultural lands that at least meet criterion #5 of Act 183 (SLH 2005), “land with sufficient quantities of

water to support viable agricultural production.”

- g.** Use IAL maps and tools when reviewing landowner/farmer-initiated petitions for the designation of IAL or for evaluating priority lands for IAL designation proposed by the State or County.
- h.** Revise the agricultural property tax regime, including but not limited to the Agricultural Dedication program, to increase incentives to lease land to productive farms and prepare an

ordinance or rule amendments as appropriate.

- i.** Reduce water rates for landowners of agricultural lands in active production.
- j.** Work with the State Department of Agriculture and Land Use Commission to clarify rules and authorities relating to permitting of agricultural structures and uses on designated IAL.

2. PLANS AND STUDIES

- a.** Develop a definition for "rural" and "rural zone" for Kaua'i to include its relationship to agriculture.
- b.** Develop a comprehensive update to the water inventory and management plan.
- c.** Improve upon or redevelop a system for local and export marketing of food and primary resources.
- d.** Work with the University of Hawai'i to conduct an island-wide food self-reliance study to calculate how much of the food consumed locally is produced locally.
- e.** Continue regular monitoring of the state of Kaua'i's agricultural activity to know what food is consumed by Kaua'i residents and how much of that food is grown on Kaua'i.

- f.** Using the same approach as the State Agricultural Land Use Baseline Study (2015), continue regular monitoring of where Kaua'i farms, what crops are being grown, and what water sources serve each area of agricultural production.
- g.** Increase access to healthy food in underserved neighborhoods and build more equitable food systems, from cultivation to disposal.
- h.** Consider the relationship and proximity of other land uses to agricultural lands in planning efforts.

3. PARTNERSHIP NEEDS

- a. Work in partnership to increase small scale diversified farming.
- b. Support partnerships that promote agriculture as the basis of the island's economy.
- c. Increase agricultural production, including the development of secondary and tertiary products and industries.
- d. Work with the State Department of Agriculture and the State Land Use Commission to clarify the reclassification incentive provided through designation of Important Agricultural Lands (IAL) (HRS 205 Part III Important Agricultural Lands).
- e. Strengthen partnerships with agriculture groups who provide incentives and opportunities for agricultural housing, jobs, education, marketing, processing/transport of goods, and other needs.
- f. Maintain irrigation works and easements where feasible and beneficial to existing or potential agricultural uses.
- g. Support legislation and other initiatives that seek to improve water access and infrastructure for agricultural purposes, including allocating money for the development of an agricultural water use plan.
- h. Support commercial agricultural producers with agricultural cooperative extension services, marketing, and business development.
- i. Coordinate with local, regional, and State agencies to expand commercial agriculture, attract new agricultural support and value added industries, and promote locally-grown commodity sales.
- j. Collaborate with State and Federal agencies to expand direct financial and tax assistance to agricultural enterprises.
- k. Work collaboratively with state and Federal agencies, private business and farm organizations on initiatives such as regional agricultural parks.
- l. Actively monitor, review, comment, and advocate on pending major State and Federal legislation that could impact agricultural land use or industry within Kaua'i County; coordinate position statements with Kaua'i Community College, the Farm Bureau, and other agricultural interest groups.
- m. Market Kaua'i agriculture and food products within Kaua'i and to out-of-state markets.
- n. Increase school classes/programs to prepare Kaua'i's youth for future careers in diversified agriculture and aquaculture, with additional emphasis on business skills.
- o. Allow the use of SNAP benefits at farmers markets.
- p. Pursue opportunities to link visitor industry marketing with marketing of Kaua'i agricultural products.
- q. Promote more community and school gardens.
- r. Facilitate the establishment of community commercial kitchens.

- s. Increase access to healthy foods, including grocery stores and farmers markets with locally grown fruits and vegetables.
- t. Require that prospective buyers of property adjacent to agricultural land be notified through title report that they could be subject to inconvenience or discomfort resulting from accepted

farming activities, pursuant to HRS Chapter 2054.

- u. Support collaboration between the USFWS, County, farmers, and other stakeholders for education and cooperation relating to protection of native birds and protecting the right to farm.

4. PROJECTS AND PROGRAMS

- a. Define the County's role in supporting and incentivizing agriculture and establish a lead to implement a program.
- b. Develop County-level incentives program for IAL designations, specifically to encourage food production to increase self-reliance.
- c. Establish a minimum goal for designation of IAL.
- d. Improve upon the IAL designation program as an effective tool for preserving high-quality agricultural land.
- e. Study the feasibility of revising the agricultural property tax to increase incentives to lease land to small farmers and prepare an ordinance or rule amendments as appropriate.
- f. Float bonds to fund improvements for water infrastructure for irrigation in

priority areas, to benefit lands designated as IAL.

- g. Establish, as part of the County's economic development strategy, programs that promote and maintain local commercial agriculture.
- h. Continue to support the Sunshine Markets and other means of marketing Kaua'i agricultural and food products to Kaua'i residents, businesses and visitors.
- i. Establish a County-wide composting program.
- j. Reestablish an Agricultural Specialist position with the Office of Economic Development.
- k. Develop a Food Production & Education Center (a.k.a commercial kitchen incubator) at KCC in order to support small business and locally-produced foods.

C. Small Businesses and Promising Economic Sectors

Kauaʻi is rich in entrepreneurial talent and skills that should be nurtured, cultivated and celebrated. We depend on the success of our small businesses, which make up the vast majority of our establishments. The ability to work from home and establish cottage industries is in keeping with our values of preserving our rural communities and lifestyles. With a focus on promising economic sectors identified in County plans, we can encourage economic growth that is in keeping with the General Plan’s vision, goals, and policies.

Small businesses are the basis of Kauaʻi’s economy. Over half of Kauaʻi’s businesses have 4 or fewer employees, and 70% of people work at businesses with less than 100 employees. Nurturing small businesses, particularly in the target industry clusters identified in the CEDS, will help ensure a robust and resilient economy. Attracting or building industries that support the goals of sustainability, health, and resilience will help advance the General Plan Vision and policies.

Supporting Cottage Industries and Rural Economic Development

Kauaʻi has a strong small business base and a growing cottage and home-based industry sector. If nurtured, these assets can help revitalize local communities and enable people to work where they live. Infrastructure such as broadband internet, co-working spaces, and other supporting means that enable people to work from home or within their communities can help improve quality of life for all residents on Kauaʻi by reducing traffic on the roads and creating more demand for local services and amenities.

From a permitting perspective, the County can examine its Comprehensive Zoning Ordinance (CZO) to ensure it does not create unreasonable barriers to working from home. “Home Businesses” are permitted in every zoning district, but zoning restrictions may limit certain types of business operations. The CZO is silent on deliveries to residential uses, but prohibits “frequent bulk shipments” from or to a home business. Restrictions on permitted equipment may also limit the growth of cottage industries in residential areas.



Food Truck in Līhuʻe

Another area of opportunity for Kauaʻi’s rural communities lies in its sugar plantation legacy. Former mill sites such as those found in Waimea, Kekaha, Kōloa, and Līhuʻe offer potential for redevelopment or adaptive reuse to accommodate manufacturing and industrial uses.

Nurturing Entrepreneurs and Small Business

There is a wealth of entrepreneurial talent on Kauaʻi that can be cultivated through improved access to networking, mentorship, equipment, training, and resources. Incubators and accelerators can serve this function, providing professional development services as well as shared equipment and resources. Incubators and co-working spaces create a supportive entrepreneurial community and encourage innovation and collaboration between multiple types of businesses. Access to capital and affordable office and commercial space can help small businesses scale up once they are ready to strike out on their own.

The Role of the Pacific Missile Range Facility

The Pacific Missile Range Facility (PMRF), located on the West Side, is one of the foremost aerospace test sites in the U.S. PMRF leverages Kauaʻi's location in the center of the Pacific Ocean for the benefit of aerospace and space launch testing. The base supports approximately 900 civilian jobs and 75 active duty members. The 900 civilian jobs comprise \$89.72 million and the 75 active duty members comprise approximately \$7.5 million of the facility's \$118 million operating budget in FY 2016.

Historically, the Pacific Missile Range Facility (PMRF) has been the driving force behind the establishment of technology-based business on Kauaʻi.

PMRF's continued vitality contributes significantly to Kauaʻi's high technology industry and provides opportunities for supportive businesses and entrepreneurs.

Flourishing Arts, Culture, and Creative Industries

Kauaʻi has served as a premier film, TV and photo shoot destination for the past 80 years. Film and photo productions for major production companies and media outlets are regularly staged here. A vibrant arts scene has flourished with the development of monthly or weekly "Art Nights" in communities around the island, including Hanapēpē, Kīlauea, and Kapaʻa. The *Kauaʻi Arts & Culture Feasibility Study Final Report* (September 2015) found "robust pockets of arts and culture" and reported that "visual arts and crafts such as painting, drawing, ceramics, woodworking and jewelry-making; performing arts including music, dance and theater; literary arts and publishing; media arts in photography, film and graphic design; and arts and traditions from Hawaiian culture, Japanese culture, Filipino culture and more."

Pursuing Renewable Energy and Clean Tech

The momentum of KIUC in pursuing ambitious renewable energy targets, coupled with Kauaʻi's goals for emissions reductions in transportation, energy, and other areas will provide significant opportunities for clean technology businesses. Clean tech tends to be low or non-polluting, provide higher wage jobs, and help address sustainability goals. Welcoming these types of businesses can move Kauaʻi toward a more promising future with greater opportunities for those that wish to live and work here.



Hanapēpē Art Night, Hanapēpē-ʻEleʻele District

1. PERMITTING ACTIONS AND CODE CHANGES

- a.** Lessen zoning restrictions for home-based businesses.
- b.** Reduce the costs and regulatory hurdles associated with starting a business.
- c.** Increase inventory of industrial zoned lands.

2. PLANS AND STUDIES

- a.** Support the priority actions in the Comprehensive Economic Development Strategy.
- b.** Develop business improvement districts and Main Street programs to provide funding to revitalize downtowns.

3. PARTNERSHIP NEEDS

- a.** Support small business development training through Kauaʻi Community College (KCC).
- b.** Build the capacity of existing and new businesses, and increase the skills and readiness of Kauaʻi's students and workforce.
- c.** Invest in opportunity industries that can diversify Kauaʻi's economy and provide living wages.
- d.** Promote cross-sector linkages between Kauaʻi's anchor and opportunity industries to grow the market for local products and services.
- e.** Provide small businesses with resources for resilience and preparedness.
- f.** Support initiatives and programs to revitalize town centers and increase demand for local-serving businesses.
- g.** Support programs and partnerships that provide business planning assistance, career planning, entrepreneurial training, incubation, and assistance with permitting, licensing, and regulatory issues.
- h.** Partner with business associations and organizations to expand offerings for training, mentorship, networking, and affordable workspace.
- i.** Support programs and initiatives that encourage manufacturing and support Kauaʻi's maker economy.
- j.** Strengthen market linkages between the tourism industry and Kauaʻi made products such as fashion, food, and music.
- k.** Explore partnerships and initiatives with PMRF that expand opportunities for innovation and tech-based businesses.
- l.** Work with banks and community development organizations to increase access to capital for small businesses and start-ups.
- m.** Work with business associations and insurance providers to educate businesses on insurance options for business interruption, natural

disasters, and other unexpected occurrences.

- n. Educate businesses on financial planning and funding sources for hazard preparedness and recovery.
- o. Work with utilities and suppliers to create discounts and incentive

programs to purchase back-up power generators and other equipment.

- p. Establish community commercial kitchens.

4. PROJECTS AND PROGRAMS

- a. Invest in shared facilities and resources that can be utilized by multiple opportunity clusters, such as Creative Industries and Technical Services.
- b. Provide infrastructure that increases the competitiveness of businesses on Kauaʻi and allows them to thrive in all parts of the island.
- c. Utilize County facilities and funds to support shared workspaces, makerspaces, and equipment for small businesses to utilize.
- d. Support programs and infrastructure that enables employees to telecommute or work in satellite locations.
- e. Attract new technology and energy businesses that complement Kauaʻi's economic and sustainability goals.
- f. Support programs to build capacity for economic development in each of the six target industry clusters identified in the CEDs plan.

- g. Support the development of the Kauaʻi Creative Technology Center in Līhuʻe.



Storefronts in Kapaʻa, East Kauaʻi District

VII. HERITAGE RESOURCES

Natural and historic landmarks give a place its unique character. They are fundamental to our sense of place, and our community's cultural identity. Heritage resources symbolize our diversity, strengthen our shared values, and help perpetuate strong aloha spirit that unites the Island. They are also a constant visual reminder of the reverence and respect that Kaua'i's residents have for the legacy of their ancestors.

Kaua'i is a community that honors its Native Hawaiian heritage, values historic places, and is shaped by its diverse languages and cultural traditions. These heritage resources help cement our attachments to Kaua'i and our sense of belonging to the community over generations. We do not live in a time detached from earlier eras; we are part of an ongoing multi-generational community with responsibilities to both prior and future generations. Many individuals and organizations help care for historic and cultural resources, often on a volunteer basis. These efforts honor and preserve the past, and ensure that future generations can learn from this history.

Planning is by nature forward-thinking, but it needs to be rooted in the past. This General Plan Update will guide the next 20 years of Kaua'i's development, but that guidance needs to stem from an understanding and appreciation of how our island has developed, and how historic features have shaped our lives. A significant part of Kaua'i's future depends upon protecting and preserving its past. Kaua'i's heritage resources are not under any imminent threat, but do require more consistent and comprehensive attention to ensure their long-term survival. In addition, we should consider new and innovative ways to protect some of our historic resources, while honoring and preserving their character and using them in ways consistent with their original purpose. Also, we should try to identify additional heritage resources worthy of protection and preservation. Kaua'i's heritage resources are not static. History is constantly evolving as new insights, discoveries, and meanings emerge over time.

The actions in this sector address historic buildings and structures, cultural sites and resources, and landmarks and scenic resources. While these three categories have certain distinct characteristics and management approaches, they should be viewed as a whole in terms of how they shape our understanding and appreciation for Kaua'i. There are also some General Planning approaches that can be used for all three. Heritage Resource Maps that show the locations of these resources on the island are included at the end of this section and in Chapter 5.

Using Existing County Authority to Protect Heritage Resources

The Comprehensive Zoning Ordinance, Building Code, and other existing County planning and administrative mechanisms can be used in various ways to help preserve and protect heritage resources. There are opportunities to revise existing policies, procedures, and rules to accomplish this goal.

Financing Heritage Resource Protection and Preservation

Property Tax Assessments and the Open Space Fund are existing County mechanisms that could be used in different ways to help finance heritage resource protection. Other possibilities include establishing new low-interest revolving loan programs.

Strengthening Community Roles in Heritage Resource Preservation

Community-based efforts and organizations play significant roles in heritage resource protection and preservation. More attention should be given to heritage resources in community planning processes, and non-profit groups should be encouraged and enabled to do more to identify, protect, and preserve them. Community involvement is a cornerstone to effective and durable protection of heritage resources.

A. Historic Buildings, Structures, and Places

Historic buildings and structures are critical to preserving Kaua'i's unique history, town centers, and sense of place. It is our kuleana to ensure that each community's treasured structures are preserved and celebrated.

Kaua'i has approximately 60 buildings and complexes listed on the National Register of Historic Places and/or the Hawai'i Register of Historic Places. These designations require reviews prior to demolition or inappropriate renovation, and make them eligible for financial assistance such as grants, tax incentives, or other forms. The area encompassing the Wailua ahupua'a and portions of southern Oloheua and Hanamā'ulu ahupua'a were identified as eligible to be listed as Historic Districts through the National Registry of Historic Places. Continued research and inquiry is needed to establish if other historic assets might merit similar designations. Efforts to preserve Kaua'i's historic buildings and structures depend a great deal on the work of Kaua'i's Historic Preservation Review Commission, established in 1986. Their work helped Kaua'i become a Certified Local Government in 2014 under the National Historic Preservation Act (1966). This enables Kaua'i to set standards for historic preservation and helps the County increase their eligibility for Federal funding for historic properties.

Revising Building and Zoning Codes to Support Preservation

The County can help to preserve historic buildings and structures through land use and building regulations, as well as partnerships and targeted financial assistance. Compliance with modern building and zoning codes is often a challenge when renovating historic properties. Sensible alternatives to strict code and permit requirements can make the difference between leaving an historic property to further deteriorate, be demolished, or allowing it to be restored and thrive with a new purpose.

1. PERMITTING ACTIONS AND CODE CHANGES

- | | |
|--|---|
| a. Amend the Comprehensive Zoning Ordinance (CZO) to broaden the type of uses that may be allowed in an historic structure. | is prepared, and Kaua'i Island Burial Council recommendations are adhered to, before final approvals are given. |
| b. Support renovation of historic structures through building code amendments. | d. Provide a real property tax exemption for historic properties, including commercial properties. |
| c. In the case of development where burials are known to exist, ensure an Archaeological Inventory Study (AIS) | |

2. PLANS AND STUDIES

- | | |
|--|---|
| a. Ensure the inventory of historic resources is accurate and current. | c. Explore the utilization of the Open Space Fund to be used for historic preservation purposes. |
| b. Update the 1990 County of Kaua'i Historic Resources Inventory and Management Plan. | |

3. PARTNERSHIP NEEDS

- a. Preserve important historic buildings and structures that illuminate Kauaʻi's history.
- b. Use existing regulations, programs, and authorities to help preserve historic buildings.
- c. Establish a low-interest revolving loan fund for rehabilitation of historic properties.
- d. Collaborate with HDOT Airports Division and other agencies in future planning of land uses at the Burns Field as a part of the Hanapēpē Community Plan.

4. PROJECTS AND PROGRAMS

- a. Maintain the character of historic structures and bridges.



Historic Hanapēpē Swinging Bridge, Hanapēpē-ʻEleʻele District

B. Cultural Sites and Resources

Archaeological resources provide vital insight to how our ancestors lived in harmony with the land and managed the use of natural resources in a sustainable manner.

Stewardship of Cultural Sites

Kauaʻi has 30 archaeological sites listed on the National Register of Historic Places and/or the Hawaiʻi Register of Historic Places, with hundreds more sites inventoried by the State Historic Preservation Division of DLNR. These sites may be found from mauka to makai on Kauaʻi, many still stewarded by families who have subsisted on the island since time immemorial.

Kahua O Kāneiolouma in Poʻipū is a recent example of a cultural complex restored through private-public partnership that can be used as a model for cultural restoration projects.

The Salt-making or salt pans area of Salt Pond Beach Park in Hanapēpē on Puʻolo Point is an example of an ancient cultural site that still functions today. Salt makers descended from thirteen families who are recognized stewards of this special resource area continue to use the area yearly to create ʻālae paʻakai, which is sea salt enriched with minerals found in the area. The Burns Field Airport in this location (originally known as the Auxiliary Flying Field at Port Allen Military Reservations) was created in 1929, becoming a Territorial Airport in 1931. The airfield was renamed in 1933 after a pilot killed in WWI by an order issued by General Douglas MacArthur. Today the airfield is used by one commercial vendor for air tours and by the County Fire Department. The Fire Department uses a small portion of the airfield for helicopter landings to assist with emergencies as well as storage for emergency equipment. However, the continued operation of the airstrip has been a concern for residents and salt-makers. Vehicle use on the beach and other land use activities may also negatively impact the integrity of salt-making in this area.

Discoveries of new cultural sites are generally triggered by development activities. Requirements and standards for conducting archaeological site surveys are administered by the State's Historic Preservation Division, a branch of the State Department of Land and Natural Resources (DLNR). Absent other purposes for conducting archaeological surveys, most future discoveries will likely depend on the amount and locations of proposed new development.

Honoring Traditional Cultural Places and Practices

Native Hawaiian traditional cultural places and practices are the foundation of Kauaʻi's cultural identity. Over recent decades renewed interest in Hawaiian values and cultures has manifested itself in language, place names, art, fashion, music and dance, food, sports and recreation, and other aspects of daily life on Kauaʻi. There is a strong and growing commitment to deepening awareness and knowledge of Native Hawaiian culture and tradition, and perpetuating its imprint upon how Kauaʻi residents live, work, and shape their future existence on the island. The preservation, protection, and enhancement of traditional cultural places and practices enables this commitment to be realized.

Kauaʻi residents also celebrate and honor other cultural places and practices associated with their history. Kauaʻi's plantation era history is recognized through events such as the Kōloa Plantation Days Celebration. The General Plan policies uphold the County's commitment to honor Native Hawaiian rights.

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Preserve and restore important archaeological and cultural sites, and maintain customary access to these sites.
- b. Create natural, landscaped buffers between archaeological sites and adjacent uses.
- c. In the case of development where known burials exist, ensure Kaua'i Island Burial Council recommendations are adhered to.

2. PLANS AND STUDIES

- a. Acknowledge the importance of archaeological sites and wahi pana during Community Planning processes.

3. PARTNERSHIP NEEDS

- a. Work with State Historic Preservation Division to educate landowners about the historic preservation review process.
- b. Promote County and community partnerships to preserve and raise awareness about traditional cultural places.



Heiau, Wailua, East Kauaʻi

C. Landmarks and Scenic Resources

Certain views and landmarks define Kaua'i's sense of place for residents and visitors alike. The majestic peaks of Wai'ale'ale and Kawaikini, the dramatic ruggedness of Waimea Canyon, and the lushness of the Alaka'i Swamp are examples of land formations that are inspiring and uplifting to experience. Preserving views of scenic landscapes is vital to sustaining Kaua'i's uniqueness and identity.

Other less known landmarks are no less important to defining our sense of place, particularly for the communities near them. For example, Crater Hill is an important coastal landform near Kīlauea Town while Hā'upu Ridge frames the Līhu'e District and divides it from the South Kaua'i District. Landforms such as Kālepa Ridge and Kilohana Crater have similar framing qualities and help define and characterize nearby communities as distinct settlement areas.

Community-Based Efforts Strengthen Awareness and Preservation

Many landmarks are prominent in Native Hawaiian history and 'ōlelo, and awareness of them is fundamental to understanding and appreciating Kaua'i. One way of raising awareness is the Kaua'i Nui Kuapapa program, a joint effort between County government and community leaders to inform residents and visitors about the significance of place on Kaua'i. The project uses a combination of physical signage and online information to convey the history and unique features of Kaua'i's five major districts or moku, and the estimated 54 traditional ahupua'a within them that define the Native Hawaiian land management units that run from the mountains to the sea. The ability for people to better know about the historical significance of individual areas on Kaua'i helps instill a sense of pride and curiosity about Native Hawaiian culture within specific place-based contexts.

Preserving Kaua'i's Traditional Identity

Preserving views does not simply entail preventing them from being totally obscured, but also means not disrupting their integrity and 'intactness' with structures or other features that detract from their beauty and continuity. Preservation of landmarks and scenic resources is perhaps the most important aspect of maintaining the historic essence of Kaua'i over time, regardless of population growth, development, and other changes that will occur.

The County's ability to preserve landmarks and scenic resources depends primarily on its zoning policies and abilities to acquire land for conservation. Since public funds to acquire land are limited, future preservation of landmarks and scenic resources must rely first and foremost on zoning and permitting regulations.

Historic and Scenic Roads

Scenic views along roadways are abundant on Kaua'i. Kaua'i already has one federally recognized scenic byway, which runs through Kōloa in South Kaua'i. In some cases, the roads themselves have historic significance. This is the case for Highway 83 between Hanalei and Hā'ena on the North Shore, which is designated as a historic road. Community Plans for each District provide an opportunity to identify specific roadways and features worthy of recognition and protection.

1. PERMITTING ACTIONS AND CODE CHANGES

- a.** Prepare amendments to the CZO, Special Management Area Rules, and the Subdivision Ordinance to provide specific criteria and guidelines for evaluating and protecting scenic views and landmarks in the siting of new development.
- b.** Consider regulatory tools such as zoning overlays or corridors to preserve views from roads or public places to the ocean, and to and from mauka to makai.

2. PLANS AND STUDIES

- a.** Identify key landmarks and scenic resources through community plans. See Figure 5-8, Island Heritage Resource Map.

3. PARTNERSHIP NEEDS

- a.** Support the Hawai'i Scenic Byway Program.
- b.** Support the Kauaʻi Open Space Commission in identifying and acquiring priority open space areas.

4. PROJECTS AND PROGRAMS

- a.** Support Kauaʻi Nui Kuapapa and other efforts to spread awareness of Kaua'i's original place names.
- b.** Support implementation of the corridor management plan for the Holo Holo Kōloa Scenic Byway.



Holo Holo Scenic Byway “Tree Tunnel”, South Kauaʻi

VIII. ENERGY SUSTAINABILITY

Energy is a critical part of progressing our goals of resilience and sustainability. So long as the majority of our energy sources are imported, Kaua'i will contribute to fossil fuel related emissions and impacts and remain vulnerable to global fluctuations in price and supply. This reality is not acceptable to us. Kaua'i is already leading the way in renewable energy targets in Hawai'i, and we will continue to set an example of energy sustainability and global citizenship through setting emissions reductions targets.

Kaua'i as an Energy Sustainability Leader

Kaua'i's high energy costs have largely been due to our relatively small market, and in the past, the need to import virtually all sources of energy. Fortunately, there has been significant progress over the past decade that has made energy sustainability no longer the distant dream it once was, particularly for certain sectors.

Kaua'i is a leader in energy conservation and development of renewable energy projects, and we want that trend to continue by continuing to set and meet ambitious targets. Our ratepayer-owned electric utility, the Kaua'i Island Utility Cooperative (KIUC) aims to exceed the State's goals for energy production from renewable sources by achieving 50% of its energy production from renewable sources by 2023. Kaua'i also will be the first County in Hawai'i to set targets for reductions of all greenhouse gas emissions so we can do our part to mitigate the advent of climate change.

The General Plan's policies and actions for energy are intended to support the efforts of KIUC and renewable energy providers in reaching the goal of energy independence, and to provide enough flexibility so that strategies can adjust based on the best available information. Policies and actions support efforts to increase energy conservation and establish emissions reductions targets for climate change mitigation.

Progress Toward Energy Independence

Participating stakeholders working on the *Kaua'i Energy Sustainability Plan (2010)* set a vision of achieving 100% local energy sustainability by 2030. At that time, the only notable progress was from increases to ridership on the Kaua'i Bus and a few small photovoltaic (PV) projects beginning to appear on the grid. Since then, however, KIUC has catapulted the Island ahead and now generates approximately 40% of our electricity from renewable sources. A biomass plant that generates approximately 12% of the island's energy came online in late 2015, and is fueled with locally grown trees. KIUC, with over 40 megawatts of PV on our small Island grid, is viewed as a national leader in the integration of photovoltaics. It is not uncommon for as much as 90% of the Island's electricity to come from PV during the daytime.

Energy Efficiency and Conservation

Energy conservation and efficiency measures are equally as important as renewable generation in moving Kaua'i toward a clean energy transformation. Innovations in several areas will help to reduce our energy load:

1. **Building efficiency:** Buildings can become 40-70% more efficient with implementation of supportive codes and standards between now and 2050 (*Roadmap to Zero Emissions*, Architecture 2030). This applies to existing and new buildings. The County can lead by example by investing in LEED certified buildings, helping the local building industry to catch up with the rest of the Country in making LEED a standard practice.

2. Energy Storage: Bulk storage of electricity is needed to allow the utility to shift energy from periods of high production to periods of high demand. As at the time of this plan, two approaches to bulk storage are under development by KIUC. They are (a) utility scale chemical batteries, and (b) pumped storage hydro. The industry is rapidly evolving, and other approaches, such as distributed storage or integration of electric vehicles may become commercially viable in the near future.

3. Responsive electric loads: Electric utilities have traditionally provided electricity to customers whenever there is demand. In a 100% clean energy grid, customer demand itself will become a tool to manage the integration of variable sources of clean energy. Both price signals (time of use pricing) and demand response control at the equipment/system level will aid utilities in managing the grid.

The County has significant roles and opportunities to increase energy conservation and efficiency through code requirements, planning, incentives, and education to encourage behavioral changes by individuals and businesses.

Addressing the Transportation Sector

While we have progressed by leaps and bounds on local renewable energy production for electricity, meeting our goals must also mean addressing and finding ways to reduce or offset the fossil fuel consumption of the transportation sector. Technological breakthroughs in electric vehicles and alternative fuels may be able to help with some of that, but until those technologies take hold and become affordable, reductions to fossil fuel consumption for transportation will largely depend on individuals changing personal travel patterns and behaviors. We can also work with the airlines and visitor industry to promote alternative fuels and carbon offset programs.



Electric Vehicle Preferred Parking & Charging, Līhu'e District

A. Energy Sustainability

Kauaʻi's energy profile has evolved significantly since the 2000 General Plan, particularly since 2010. A combination of solar, hydro, and biomass generation projects accounted for only 13% of the Kauaʻi Island Utility Cooperative's (KIUC) energy sales in 2014, but it rose to over 36% in 2015. Renewable resources have been able to meet an average of 77 percent of Kauaʻi's energy demand during peak solar hours, spiking to as much as 90 percent. (*Kauaʻi Utility Reaches 90% Renewable Energy Utilization, 2016*).

KIUC has adopted an ambitious goal for renewable resources to generate at least 50% of Kauaʻi's energy by 2023, surpassing the State's goal for 40% of energy from renewables by 2030. Future progress on renewables will allow Kauaʻi to become more self-reliant for its energy in a manner that is more environmentally sound and economically sustainable than its traditional reliance upon fossil fuels.

While much of renewable energy production depends on KIUC and private sector initiatives, the County can assist with the transition to renewable energy through various means including land use planning, economic development, transportation planning, and County government operations.

Innovations in Energy Sustainability and Conservation

Efforts to reduce energy consumption are just as important as power generation, particularly during nighttime hours when solar power generation is not available. Energy conservation begins at home, and technologies such as 'smart meters' are available to KIUC customers to allow them to better manage their energy use. These and other measures have helped Kauaʻi residents reduce their electricity consumption by an average of 10 percent from 2007 levels. Kauaʻi's average household electricity use of 465 kilowatt-hours per month was the lowest of any County in the State in 2013. As more renewable sources come on line from public and private sources, and as more residents use smart meters, greater energy conservation and lower monthly energy bills will benefit residents and businesses.

Renewable energy projects that integrate additional benefits besides power production are also valuable. Solar arrays that are integrated with agricultural production are one example, as are water management projects that incorporate hydropower production. Landfill sites present opportunities for methane gas production, which can be stored and used for buses on Kauaʻi.

Increasing Kauaʻi's renewable energy production capacity also represents a potentially significant contribution towards reducing the island's greenhouse gas emissions to help mitigate climate change.

1. PERMITTING ACTIONS AND CODE CHANGES

- | | |
|--|---|
| <p>a. Promote increased energy conservation and renewable energy production. Optimize the mix of energy crops that can provide fuel for power production on Kauaʻi.</p> | <p>c. Streamline and expedite planning and permitting processes involving renewable energy facilities.</p> |
| <p>b. Optimize the mix of energy crops that can provide fuel for power production on Kauaʻi.</p> | <p>d. Require new buildings to incorporate economically-feasible design and equipment to save energy.</p> |

2. PLANS AND STUDIES

- a. Work with the University of Hawai'i to do an island-wide study of energy crop production, and determine how much energy production comes from locally grown crops.

3. PARTNERSHIP NEEDS

- a. Support the Kaua'i Island Utility Cooperative (KIUC) and private initiatives for solar, biomass, hydro, and other clean energy production types.
- b. Identify sites where new renewable energy facilities might be co-located with other land uses
- c. Review County operations to identify ways to conserve energy, particularly during nighttime hours.
- d. Continue regular monitoring of the amount of Kaua'i's energy production that is from fuel grown on the island.
- e. Support State and Federal efforts to price carbon, such as a carbon tax or fee and dividend programs.

4. PROJECTS AND PROGRAMS

- a. Install more solar energy systems on County facilities.
- b. Pursue ground transportation energy conservation and alternative fuel projects.



Photovoltaic array. South Kaua'i District

B. Reduction of Greenhouse Gas Emissions

Kauaʻi is a leader in renewable energy and we are transitioning our island away from the use of fossil fuels for power generation. But we should not stop there. Doing our part to reduce carbon emissions from buildings, transportation, and other sources is our kuleana as global citizens.

Climate Change is the Paramount Challenge of this Century

Since the 2000 General Plan, the impacts of climate change have become more apparent. They include coastal erosion, coral bleaching, higher temperatures, more frequent wildfires, reduced trade winds, increased frequency of tropical storms, and other impacts. The severity of these impacts over time will depend in large part upon the success of the global effort to reduce greenhouse gas emissions. On one extreme is business as usual, where global average temperatures could increase over 4 degrees Celsius by the year 2100, bringing much greater severity of all the aforementioned impacts and an unstable climate for centuries into the future. On the other extreme, an aggressive global effort to reduce greenhouse gas emissions could keep average temperatures from increasing more than 2 degrees Celsius relative to pre-industrial levels, and could help to stabilize the climate.

Other sections of this document address the specific concerns that arise when planning for sea level rise and related impacts of climate change. This section outlines Kauaʻi's commitment to be part of the solution to mitigating one of the factors that causes and exacerbates climate change; that is, reducing and ultimately eliminating our emissions, primarily from the burning of fossil fuels.

Setting an Example

Policy makers at local and state levels have identified the need to reduce our dependence on fossil fuels for numerous reasons, including greenhouse gas emissions reductions. In 1998, the State of Hawaiʻi completed a climate change action plan, which states: *"Hawaiʻi can and should play a role in reducing its greenhouse gas emissions that contribute to climate change."* In 2007, Act 234 was signed into law, and required the State to reduce greenhouse gas emissions to 1990 levels by 2020. This milestone has already been achieved well ahead of schedule. However, much greater levels of emissions reductions are now in order.

In 2014, the State adopted the Hawaiʻi Climate Change Adaptation Initiative (Act 83) to address the impacts of climate change on the State's economy, environment and way of life. It established an Interagency Climate Adaptation Committee to develop a Sea Level Rise Vulnerability and Adaptation Report and Statewide Climate Adaptation Plan.

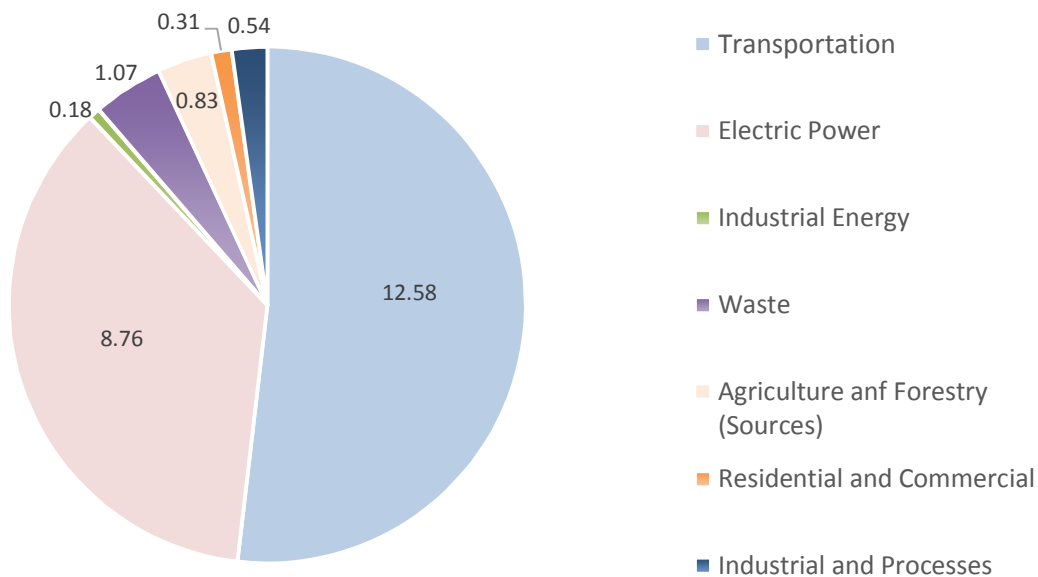
As discussed in previous sections, Kauaʻi is already making fantastic progress in the energy sector, with 40% of our electricity currently from renewable sources. In the ground transportation sector, Kauaʻi County has laid the foundation for similar gains. The County has retooled its roadway planning and is beginning to build and rebuild streets with increased attention to pedestrians, bicyclists, and transit. The local bus service has also continued to grow over the past decade and will be an essential component of a low carbon ground transportation system.

The behavior and actions of individuals are critical to making these shifts happen. Like most US residents, people on Kauaʻi emit more than double the per capita world average greenhouse gas emissions per year. It is everyone's kuleana to look at ways they can reduce their personal carbon footprint, in keeping with the spirit of Kauaʻi Kākou.

Goals for Emissions Reductions

This General Plan includes a policy that furthers Kaua'i's shift to clean energy through an 80% reduction in greenhouse gas emissions by 2050, as compared to 1990 levels. This emissions reductions target is in line with the best available science and recommendations by the Intergovernmental Panel on Climate Change (IPCC). Statewide emissions for the year 2007 are shown in Figure 2-12.

Figure 2-12. Composition of Hawai'i GHG Emissions (Excluding Sinks, Including Aviation), 2007 (MMTCO₂Eq)



Achieving an 80% reduction in carbon dioxide (CO₂) emissions will require a wholesale transformation of our electricity and transportation systems, and will have far reaching implications for other sectors such as tourism, agriculture, and consumption of imported goods. These systems have evolved over a century of increasing access to and growth in the use of fossil fuels.

By achieving this level of emissions reductions, Kaua'i will be doing our part to prevent global average temperatures from increasing. Further, this transformation will provide significant benefits across our island economy, particularly where we can leverage local assets and play a leading role.

Addressing Air Travel

Emissions from air travel to support both resident and tourist travel accounted for an approximately equal share of petroleum use compared to ground transportation and electricity in 2013. The State's 1998 climate change action plan noted: *"...the difficulty Hawai'i faces in making significant reductions in its emissions. Jet fuel is essential to Hawai'i's tourism-based economy and the wellbeing of its people."*

Since that time, the airline industry has made considerable strides in improving per passenger efficiency through both aircraft technology and seat management. However, growth in tourism has offset much of these gains and aviation emissions remains a critical challenge. This is particularly true in Hawai'i due to our much greater dependence on air travel than in less isolated communities.

Although local government influence over airline emissions is very limited, the County, with help from the State, can regularly track these emissions and assure that the industry is meeting the commitments it has laid out to fit into a low carbon society in the coming decades.

Inventorying Greenhouse Gases

According to the *State of Hawaiʻi Greenhouse Gas Inventory* of 1990 and 2007, Kauaʻi contributed 1.2 million metric tons of carbon dioxide equivalent gases in 2007. These emissions were primarily from the combustion of fossil fuels for electricity, ground transportation, and air transportation.

Maintaining an accurate greenhouse gas inventory will be critical to tracking progress as we move towards our goals. The State of Hawaiʻi Department of Health is currently completing its third sector-based statewide greenhouse gas inventory in 2016. Future efforts should be put into building an inventory tool that automatically updates from the various sources of data, as opposed to the current practice of periodic, static reporting. Sector based emissions tracking is relatively straightforward, with data already available from multiple sources, and several well-established protocols existing for municipalities that are accepted on an international level.

Notably, current inventories do not reflect the greenhouse gas emissions embodied in the significant volume of consumer goods imported to Kauaʻi every year. Portland, Oregon and Oakland, California, two of the first jurisdictions to analyze consumption based emissions in their community, found that emissions from consumer goods accounted for approximately twice the amount of greenhouse gas used by other sectors. In order to effectively manage our emissions, tracking and managing the embodied emissions associated with the manufacture, production, and delivery of imported goods we use will be an important component of our efforts.

Climate Action Planning and Community Engagement

A community led climate action planning process will be an important tool to maintain progress towards the long term goal of an 80% emissions reduction by 2050. Such a process will need to be maintained with an ongoing commitment both by Kauaʻi County and by its community partners. Focus on key sectors and their inter-relationships will be necessary in order to continue making progress with emissions reductions. These sectors include infrastructure, ground transportation, tourism, consumption and materials management, food and agriculture, and natural resources management.

The process should seek to continually integrate climate change mitigation and adaptation goals to a greater and greater extent with existing planning processes including the General Plan, community plans, and individual sector plans as they are revisited.

Finally, successful climate action planning will hinge on continuous engagement across the community. The majority of Kauaʻi's greenhouse gas emissions are the result of individual choices over the short and long term by Kauaʻi residents and businesses. Engaging the people in our community and encouraging them to take ownership of the process will be key to gaining the support and collaboration needed for long-term success.

Transformation as Opportunity

Kauaʻi's extensive fossil fuel dependence means that there is a large task ahead to transform, and ultimately decarbonize Kauaʻi's economy. There will be many benefits to making this transformation. Clean energy in the electricity sector already provides local jobs, helps stabilize electricity costs, and reduces dependence on imported fossil fuels. Transforming the ground transportation sector will encourage healthier living, revitalize neighborhoods and downtown business areas, and allow those with limited mobility more options for getting where they need to go. Addressing tourism and air travel will

be very challenging, but Kaua'i's commitment to sustainability will resonate with the values of modern travelers.

We must study our island systems and how they function, so that we can find ways of reducing or substituting fossil fuel use. This will involve researching and integrating new technologies, as well as finding ways to increase efficiency or use less fuel. For example, in ground transportation, Kaua'i can make headway through broader adoption of electric vehicles. It will also be essential to reduce vehicle miles travelled through mode shift. We also need to work toward land use patterns that create higher density communities that are less auto-dependent over the long term. The General Plan actions for Climate Change Mitigation support these goals.

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Promote higher density residential development near job centers and amenities, while strongly discouraging development that will require residents to commute via automobile to jobs in other areas of the Island.
- b. Reduce the carbon footprint of both new and existing buildings and infrastructure through policies and actions that maximize efficiency and minimize the use of fossil fuel resources on the grid.
- c. Accelerate the transition to alternative, carbon-free fuels in the ground transportation sector with regulations and policies that support electric vehicle adoption and other alternative fuel infrastructure.
- d. Require large new developments and infrastructure projects to include a project carbon footprint analysis estimating the anticipated change in emissions resultant from the proposed project and documenting the emissions reduction strategies deployed by the project to minimize its emissions.
- e. Support continued reductions in emissions from local energy production.

2. PLANS AND STUDIES

- a.** Develop a climate plan that focuses on key sectors and their inter-relationships with respect to emissions reductions, to be updated every five years. Include intermediate year emissions reductions for all major sectors.
- b.** Accelerate zero waste strategies, including policies and actions that encourage Island residents to move towards lower levels of consumption, and to reuse materials to the maximum extent possible.
- c.** Conduct a greenhouse gas emissions inventory for the County.

3. PARTNERSHIP NEEDS

- a.** Partner with the State, Federal Government, and other local jurisdictions to share best practices regarding climate planning, including support for system-wide carbon fees or taxes at the state or national level.
- b.** Develop and maintain partnerships within the electricity, transportation, tourism, agriculture, waste, and small business sectors to meet emissions reductions goals.
- c.** Work in collaboration with sector partners to establish short term (every 5 years) intermediate (2030) and long term (2050) emissions reduction targets in ground transportation, electricity, air transportation/tourism, and consumption & materials management.

4. PROJECTS AND PROGRAMS

- a.** Support a methane and biogas capture and containment project at the Kekaha Landfill.
- b.** Increase the availability of building energy performance information around the Island for both the residential and commercial sectors.
- c.** Support innovative carbon offset projects, such as growing trees to sell as carbon credits.

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IX. PUBLIC SAFETY & HAZARDS RESILIENCY

Educating our people and practicing public safety and preparedness for hazards is part of what it means to live on Kauaʻi. The more that each of us is prepared and does our part, the safer and more resilient we will be as a whole.

Given the realities of living on an island that is subject to hurricanes, tsunamis, wildfire, earthquakes, and a host of natural hazards, Kauaʻi has no choice but to embrace the idea of resilience. This General Plan broadens this definition to include economic resilience, community health, and the many other factors that influence how well a community can withstand and bounce back from impacts. For the purposes of this Section, the focus is on increasing public safety, awareness, and preparedness. Maps showing hazard areas around the island and critical public facilities are included in Chapter 5.

Planning for Hazards

Hazard mitigation refers to actions and measures taken before an emergency occurs and includes any activity to reduce the impacts from a disaster. It reduces the damages and costs of response and recovery, allowing communities to more quickly bounce back. Assessing risks is a key component in identifying the actions that can be taken to mitigate negative impacts.

Supporting and protecting the facilities and systems needed for recovery is a key part of the equation. Harbors and airports need to be maintained so that they can withstand severe events. Roads, power plants, and critical infrastructure located in high hazard areas should be relocated to less vulnerable areas. If relocation is not possible, then they should be hardened. Buildings must follow the most recent codes and wind loading requirements. Emergency warning systems and communications systems need to be kept in good working order. Small businesses, as the backbone of Kauaʻi's economy, should have continuity plans and assistance so they can bounce back quickly following disasters.

Committing to Resilience

In June of 2015, Mayor Bernard Carvalho signed an executive order "To Sustain Kauaʻi as a Disaster Resilient Community." The executive order supports implementation of key recommendations in the County's recently updated Multi-Hazard Mitigation and Resiliency Plan. These include a County-wide risk and vulnerability assessment, community resilience planning, public-private partnerships, building code changes, disaster preparedness education, and others.



Damage from Hurricane Iniki, Photo Courtesy Hawaiʻi Emergency Management Agency

A. Police, Fire, Ocean Safety, and Emergency Services

Our first responders are critical to maintaining health and safety on our island. As the population grows, we need to do our part to ensure that police, fire, and emergency services are supported and that our resident and visitor populations are educated about ocean safety and fire prevention.

Expanding Services for Growth

Kaua'i's police, fire, and emergency services departments provide a wide range of security and emergency response duties for the island's residents and visitors.

Kaua'i has three police stations, located about 25 miles apart from one another. These include stations at Hanalei to serve the North Shore communities, Waimea to serve the west side communities, and the headquarters in Līhu'e to serve the east and south side communities. Kaua'i had 161 police positions in 2015. The size of the police force has not expanded in over 25 years. Kaua'i had a ratio of 1.79 officers for every 1,000 persons in 2015 (including residents and visitors). In order to achieve the national average for police presence, Kaua'i would need to add 109 officers by 2035 to service the estimated future residential and visitor population (*Adequacy of Future Infrastructure Analysis, 2016*).

Kaua'i's Fire Department responds to multiple types of hazards, including structural and outdoor fires, ocean and back-country rescues, aircraft accidents, and hazardous materials emergencies. The Department also conducts fire inspections and investigations, and handles fire code review and enforcement. There is at least one station in each planning district capable of addressing all basic fire and medical calls. Kaua'i had 135 firefighters in 2015, which translates to two firefighters per 1,000 persons. This ratio is favorable compared to the national average of approximately 1.76 firefighters per 1,000 persons. Kaua'i would need to add 120 new fire fighters by 2035 in order to maintain its current ratio to serve the projected population of residents and visitors. This level of expansion would likely require adding two or three new fire stations, most likely in Kīlauea, Koloa, and Līhu'e. A related infrastructure issue is that certain bridges are undersized to handle larger emergency response vehicles.

Promoting Ocean Safety

As a community with substantial marine recreation activity, the Kaua'i Fire Department's role in ocean safety is extremely important for residents and visitors. Kaua'i's shorelines are popular and attractive for swimming, surfing, and other water sports. They can also be notoriously dangerous, particularly for weaker and inexperienced swimmers. The Fire Department is responsible for the island's Ocean Safety Program which includes ten lifeguard towers, three jet-ski operations around the island, and 45 Water Safety Officers. The Fire Department also runs an education and community awareness program and a training center for these operations.

Protecting Kaua'i from Hazards

The Fire Department's hazardous materials ("hazmat") operations were previously focused on environmental accidents in industrial centers and on transportation corridors. With the increased national focus on terrorism since 2001, current hazmat responsibilities must also address chemical, biological, radiological, nuclear and environmental hazards from foreign or domestic terrorism. These needed skills sets and testing equipment have required significant additional training.

The Police and Fire Departments have extensive responsibilities in the event of natural disasters such as hurricanes and tsunamis. It is important that these first responders have effective communications systems and emergency supplies that are well protected.

1. PERMITTING ACTIONS AND CODE CHANGES

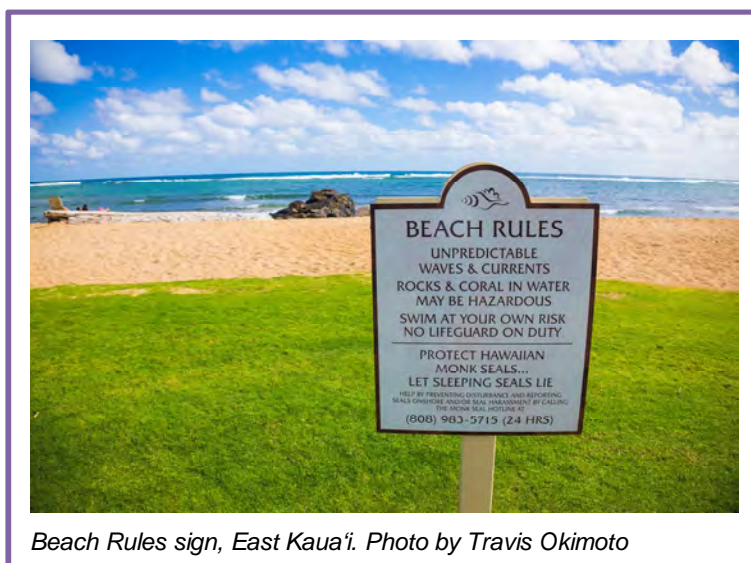
- a. Maintain effective levels of public services to protect the growing population.
- b. Upgrade and enhance facilities to address existing vulnerabilities and support necessary growth in emergency response personnel.

2. PARTNERSHIP NEEDS

- a. Support the State and County's organized response system to wildfires.
- b. Implement and update the Kauaʻi Community Wildfire Protection Plan.

3. PROJECTS AND PROGRAMS

- a. Upgrade bridges in key areas to ensure emergency vehicles can service all residents and visitors.
- b. Construct new fire stations to accommodate anticipated growth in firefighting force.
- c. Strive to attain a police force, fire fighting force and water safety officer force whose coverage meets or exceeds national standards.
- d. Support continuous training for all emergency response officers.



Beach Rules sign, East Kauaʻi. Photo by Travis Okimoto

B. Hazards Resiliency

Kaua'i is subject to multiple natural hazards, including flooding, coastal erosion, hurricanes, tsunamis, landslides, and wildfires. Climate change makes many of these hazards worse by causing rising temperatures, sea levels, changing rainfall patterns, changing wave and wind patterns, and changes in frequency and intensity of storms. Coastal flooding, marine inundation, and coastal erosion in particular are predicted to be exacerbated by future accelerated sea level rise.

Planning for Resilience

There is probably no other challenge to the overall resilience of a community than a significant natural disaster, such as Hurricane Iniki in 1992. These types of hazards impact all community members, regardless of their age, economic status, or other characteristics. They require the community to function as one 'ohana, with a collective need to prepare and respond. Recent County level plans address this need directly. Island Heritage Resource Maps can be found in Figures 5-15 through 5-21.

The *Kaua'i Climate Change and Coastal Hazards Assessment* (2014), a technical study for this General Plan Update, focused on the coastal hazards present on Kaua'i (erosion, flooding, wave inundation, and wind) and how these hazards are affected by climate change and sea level rise. This study provided a host of policy and planning options to address hazards and climate change.

The *County of Kaua'i Multi-Hazard Mitigation and Resilience Plan (MMRP)* (2015) updated vision of resilience encompasses the need to strengthen and support community, economy, and environment:

"The communities of Kaua'i County actively build resilience through local planning and environmental initiatives. This resilience of the communities enhances their ability to withstand the impacts of disasters and longer term effects of climate change.

Focus on agriculture and local livelihoods enhances sustainability, and will enable survival should catastrophic events occur that prevents imported products from reaching Kaua'i. Environmental restoration efforts in the ahupua'a of Kaua'i have improved the ecological resilience of the environment."

Recommendations from both of these plans are incorporated into General Plan actions.

Create Resilient Communities and Prepared Citizens

Communities that have experienced significant natural disasters such as Kaua'i know the importance of planning and preparation at the individual and neighborhood level. Depending on the scale and duration of the event and whether damages have occurred that isolate neighborhoods, it could be hours, days, or even weeks before first responders can access a site and a recovery effort can begin. Consequently, communities have begun taking it upon themselves to develop neighborhood plans and procedures for caring for their own. On Kaua'i, The *Hanalei to Hā'ena Community Disaster Resilience Plan* (2014) provides a model that other communities can follow. Information, programs and resources are available to support community based preparedness efforts. The County Fire Department offers free Community Emergency Response Team (CERT) training to individuals and groups, with the goal of having trained CERT teams in every neighborhood on the island. The Emergency Management Agency offers online resources including checklists for emergency kits and information on business preparedness.

Public Safety and the Tsunami Zone

Many transient vacation rentals are located within tsunami evacuation areas. Unlike resorts, which have tsunami evacuation plans and procedures in place to protect guests, visitors staying in units without onsite managers may be less prepared and more vulnerable should a disaster occur. Tsunami and hazard information should be provided before visitors book their vacation rental, so they are aware their accommodation is located in a high hazard area.

Vacation rentals may not be equipped with emergency supplies or adequate information about warning sirens, evacuation shelters, and other important safety information. Informing visitors about tsunamis and other natural hazards should begin when they arrive on island. Educational materials should be readily available and prominently displayed. Clear signage indicating the tsunami evacuation area and evacuation routes will help those unfamiliar with the island to reach safety.

Actions that encourage hazards resiliency and community preparedness are provided below.

1. PERMITTING ACTIONS AND CODES

- | | |
|--|---|
| <p>a. Minimize coastal development in areas of high risk of erosion, flooding, tsunami inundation, and sea level rise.</p> | <p>d. Designate areas to serve as public shelters when designing and constructing new public buildings.</p> |
| <p>b. Provide for adequate emergency shelters and communication systems in all planning districts.</p> | <p>e. Include conditions in transient vacation rental and homestay permits that require disclosure to visitors and occupants of hazard risks and instructions for evacuation in cases of natural hazards, such as tsunamis, hurricane, or flooding. Require disclosure of hazards prior to entry of TVRs or homestays.</p> |
| <p>c. Periodically review and update the <i>Multi-Hazard Mitigation and Resilience Plan</i>, as well as building codes and permitting standards for alignment with DRR efforts.</p> | |

2. PLANS AND STUDIES

- | | |
|---|---|
| <p>a. Encourage community-based disaster resilience plans and incorporate components into future Community Plan updates. Plans should include an assessment of risks and vulnerabilities in the local economy to hazards.</p> | <p>critical lifeline and facilities standards of the National Incident Management System (NIMS).</p> |
| <p>b. Develop a post-disaster recovery plan that incorporates disaster mitigation considerations into development and land use plans and procedures. Ensure that post-disaster plans comply with transportation, debris clearance, and</p> | <p>c. Work with the State Office of Conservation and Coastal Lands(OCCL) to update the <i>Coastal Erosion Mitigation Plan</i> for Kauaʻi.</p> |
| | <p>d. Identify and index communities that have existing disaster resilience plans. Provide support to current and ongoing community hazard risk reduction, mitigation, and planning efforts.</p> |

3. PARTNERSHIP NEEDS

- a. Designate evacuation routes, critical facility access routes, and public shelters in cooperation with local communities. Encourage storage of food and water in communities in order to encourage local recovery.
- b. Encourage the integration of agricultural planning and coordination into disaster risk management to improve local food security, sustainability, and community resilience to hazards.
- c. Plan for maintenance of critical facilities and infrastructure in the event of a hazard. Identify mitigation opportunities in utility service plans and implementation resources.
- d. Work with communities to verify available spatial data, identify gaps, and improve risk assessments by updating data in the County database. This may require additional funding and human resources.
- e. Improve public awareness materials distributed by the County through periodic updating with the best available data and maps.
- f. Enhance channels to the community by distributing materials at outreach and community events, via online and printed media, discussion on radio and news media, and by incorporating into the process of community resilience planning.
- g. Enhance integrated updating, consistent access, and use of geographic information systems (GIS) and spatial hazard data for streamlining Disaster Risk Reduction (DRR) efforts across agencies.
- h. Continuously update the spatial database and geographic information systems that have been developed for risk vulnerability assessment. Use these to identify potential risks to communities and critical facilities, to assist in decision-making, and to ensure County-wide consistency in planning activities.
- i. Enhance and use the County's geographic information system (GIS) and data to improve decision-making and ensure consistency in planning, permitting, and construction to reduce disaster risks.
- j. Improve data gathering and accounting for risk and vulnerability assessments for wind, droughts, and wildfires.
- k. Use GIS maps to improve building codes and permitting for alignment with DRR. Make hazard risk information available to permit applicants.
- l. In assessing telecommunications vulnerabilities and planning pre-disaster preparedness measures, consult with the Utility Disaster Preparedness and Response Group for advice and recommendations.
- m. Utilize local communications networks, community organizations, and local information sharing modes, both traditional and new (such as social media) to disseminate warning,

response, and preparedness info. Include local communications strategies in resilience plans.

- n.** Ensure that existing designated shelter and critical services are built or retrofitted to withstand projected hazard scenarios. Incentivize and encourage residents and hotels to integrate hardened shelters into their structures.
- o.** Reduce ‘flash fuels’ such as dry vegetation in high use areas and encourage vegetation clearing and clean-up programs.
- p.** Assess the need for and make shelter facilities accessible to special needs groups, pet owners, and unique local conditions.
- q.** Ensure the capacities of shelters, infrastructure, and critical facilities can accommodate the population exposed to catastrophic events according to recent census numbers, projected growth models, and projected hazard scenarios.
- r.** Support the development of a Common Operational Picture, which incorporates real-time asset status tracking for Emergency Management.

4. PROJECTS AND PROGRAMS

- a.** Ensure that the County’s updated GIS database, including all maps, data, and hazard information is consistently available County-wide to all agencies and departments. Facilitate sharing through participation in the Hawaiʻi Geographic Information Coordination Council.



Flooding in Kapaʻa, East Kauaʻi District. Photo Courtesy Hawaiʻi Emergency Management Agency

C. Global Warming and Climate Change Adaptation

Climate change and its associated symptoms could have wide-ranging impacts to Kaua'i's environment, economy, and way of life. Understanding and incorporating the best available information on climate change is critical to planning effectively and taking proactive measures to adapt to climate-related changes.

Anticipating Climate Change Impacts

There is substantial documentation of global warming trends over previous decades, but predicting the rate and extent of future warming and associated sea level rise is difficult. The best available scientific forecasts suggests planning for at least one-foot rise in sea level by year 2050 and a three-foot rise by year 2100. Given the range of uncertainty, the National Oceanic and Atmospheric Administration (NOAA) recommends a scenario-based planning approach that balances the degree of potential change with the tolerance for risks associated with that change. For example, new infrastructure with a long anticipated life would represent very low risk tolerance while an uninhabited area with no endangered species could tolerate greater risk from climate change impacts.

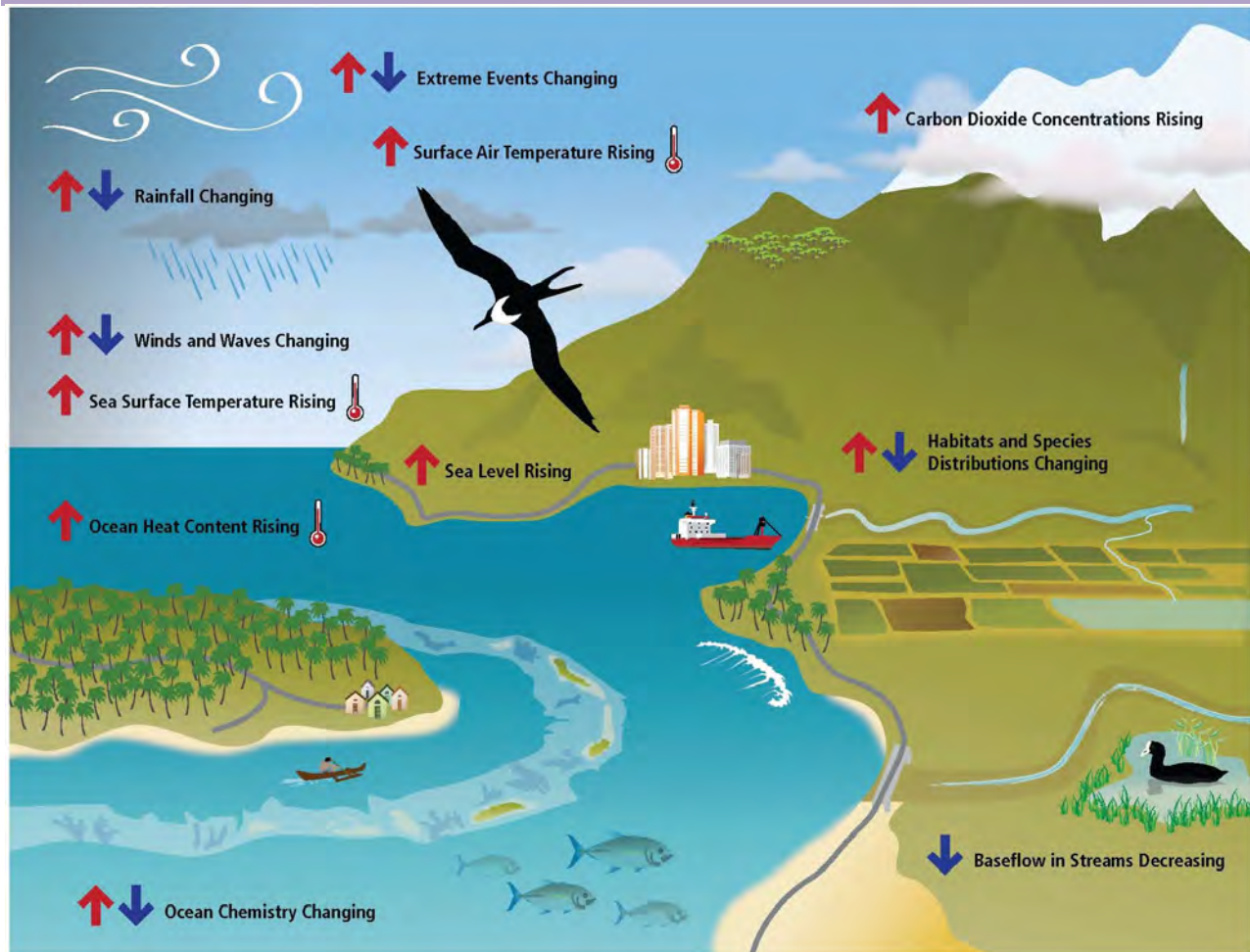
Coastal areas are expected to experience the greatest amount of change, which in turn will impact the roughly twenty percent of Kaua'i residents who live near the shoreline. There are many pieces of critical infrastructure along the coast and in low lying areas, including roads and bridges, harbors, wastewater and storm water systems, potable water systems, and energy facilities. Climate change could impact several other aspects of Kaua'i's environment, economy, and daily life, such as agricultural production, tourism and recreation, and wetlands or other important natural habitats.

Climate change is also prompting the movement of people away from vulnerable coastal areas, and in some cases, whole islands. The State of Hawai'i has already received some of the world's first climate immigrants from low-lying Pacific nations such as the Marshall Islands and Micronesia (*As Pacific Islands Flood, A Climate-Driven Exodus Grows*, Scientific American, 2013).

Climate change can also impact food security, as evidenced by the widespread and severe droughts in California over the past several years. With approximately 90% of our food being produced outside of Hawai'i, this is an important issue for Kaua'i. Kaua'i residents will be facing these challenges for decades and even centuries into the future.

Water supply may also be impacted by climate change, especially if Hawai'i's convective rainfall patterns are disrupted. Increased evapotranspiration will make Kaua'i's arid environments, such as the West Kaua'i plateau, more dry and may impact agriculture as well. Fortunately, salt water intrusion into the aquifer is not considered a major threat due to the buoyancy of salt water and the low permeability of the caprock in coastal areas. Ocean acidification will also impact marine environments – such as coral reefs – thus having a great impact on Kaua'i's fisheries.

Figure 2-13 depicts the various possible impacts that climate change could have on Kaua'i's natural and built environment.

Figure 2-13. Possible Impacts of Climate Change on Kauaʻi

Source: Pacific Islands Regional Climate Assessment

Planning for Adaptation

The *Kauaʻi Climate Change and Coastal Hazards Assessment* (2014) was prepared as a technical study for the General Plan. It discusses the likely coastal hazard impacts of climate change and suggests measures for adaptation, resiliency, and mitigation. The *Kauaʻi Multi-Hazard Mitigation and Resilience Plan* (2015) also examines natural hazards with an emphasis on an integrated and collaborative approach to risk reduction and building community resiliency.

Initial mapping of sea level rise (SLR) inundation in selected areas of Kauaʻi was done utilizing data from the National Oceanic and Atmospheric Association (NOAA) Digital Coast Sea Level Rise Viewer. The areas modeled include 1 foot, 3 foot, and 6 foot SLR scenarios for shorelines in Waimea, Hanapēpē, Poʻipū, Nāwiliwili, Wailuā, Kapaʻa, Anahola, Hanalei, and Hāʻena. Appendix E includes the 1 foot and 3 foot SLR maps of these areas. They illustrate the types of impacts that might occur, and act as a screening tool to identify vulnerable areas that may require further study, or where dense development should be avoided. The maps only depict still water flooding and do not show erosion or wave inundation impacts. They serve as an interim planning and assessment tool until new hazard maps are released by University of Hawaiʻi researchers. This data, combined with FEMA flood maps, were used to evaluate and refine the General Plan land use maps in Chapter 5.

Responding to climate change will require a comprehensive approach with actions that cut across many sectors. Since the rate and extent of climate change is uncertain, an “adaptive management” approach is best suited to deal with the inherent uncertainties. Also needed is a framework to address the impacts of climate change. Adaptive management is dependent upon the constant and thorough monitoring of climate change variables, building and revising different scenarios, and developing flexible response mechanisms and actions. One recent County action was to revise the shoreline setback ordinance by an additional 20 feet to account for sea level rise and associated impacts. The shoreline setback ordinance should be revisited over time as new sea level rise information and projections become available.

Effectively dealing with climate change will require cooperation and participation by all Kaua'i residents, businesses, institutions, and government. Because the General Plan influences the earliest stages of the development process, it provides an important opportunity to prevent and mitigate the impacts of potential future disasters associated with climate change.

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Use the best available climate and hazard science to inform and guide decisions. Determine a range of locally relevant (context specific) sea level rise (SLR) projections for all stages of planning, project design, and permitting reviews. At the time of this General Plan Update publication, the science suggest planning targets of at least one foot by 2050 and three feet by 2100.
- b. Regularly review and refine relevant policies, rules, and regulations based on the most currently available climate and hazard science and projections
- c. Identify lands/areas that may serve as buffers from coastal hazards and restrict development within them.
- d. Periodically update the shoreline setback and coastal protection article of the comprehensive zoning ordinance to allow for adjustments in the setback calculations based upon best-available SLR data.
- e. Update the Floodplain Management Program to incorporate sea level rise planning information, utilizing options detailed in the Kaua'i Climate Change and Coastal Hazards Assessment or other relevant resources.
- f. Within the special management area (SMA) and Zoning Permit program:
 - (a) Require applicants to analyze coastal hazard impacts and include mitigation in permit applications;
 - (b) impose development conditions upon permits that minimize the impacts of exacerbated flooding, storm surge, and erosion due to sea level rise;
 - (c) strengthen rebuilding restrictions for nonconforming structures such that these structures are relocated a safe distance from the shoreline in hazardous areas;
 - and (d) add conditions that prohibit shoreline armoring.
- g. Update the subdivision standards to:
 - (a) restrict residential subdivisions in areas prone to current and future coastal hazards, including sea level rise;
 - (b) outside of these natural hazards areas, provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources.

- h.** Periodically update the building code to ensure that the standards for strengthening and elevating construction to withstand hazard forces in hazardous areas utilize the best available science and planning information.
- i.** When considering project alternatives during the environmental review process, evaluate relocation outside of hazardous areas, elevation of structures, and “soft” hazards such as beach nourishment. When considering environmental mitigation, incorporate climate resilience measures.

2. PLANS AND STUDIES

- a.** Conduct detailed hazard, risk, and vulnerability assessments for critical infrastructure and low-lying coastal communities when updated sea level rise, erosion rates, and wave inundation information is available.
- b.** Identify priority planning areas where resources and planning efforts need to be focused and identify how and where to use adaptation strategies such as accommodation, retreat, and protection.
- c.** Encourage strategic retreat and relocation to safer areas based on the results of the assessments above.
- d.** Use results of hazard, risk, and vulnerability assessments to inform adaptation strategies to be incorporated into community plans or other planning processes.
- e.** Acknowledge, support, and/or take part in university, government, and private efforts to develop planning information and guidance to address how accelerated sea level rise will effect erosion rates and wave inundation.
- f.** Support implementation of the Hawai'i Climate Adaptation Initiative (Act 83) and development of the Sea Level Rise and Vulnerability Adaptation Report for Hawai'i and the Statewide Climate Adaptation Plan.

3. PARTNERSHIP NEEDS

- a.** Work with the State Department of Land and Natural Resources (DLNR) to ensure conservation lands have appropriate vegetative ground cover to prevent soil erosion, including native and non-native plant species appropriate for Puu Ka Pele, and Nā Pali-Kona Forest Reserve locations.
- b.** Ensure consistent public access to communications, warning systems, roads, and infrastructure in remote areas in the event of a hazard.

- c. Consider incentive programs, such as a tax incentive program or a transfer of developments rights program to relocate potential or existing development out of

hazardous or sensitive areas. Consider creating a relocation fund through increased development fees, in lieu fees, or other funding mechanisms.

4. PROJECTS AND PROGRAMS

- a. In accordance with Hawai'i State Planning Act Priority Guidelines, consider multiple scenarios of SLR

and associated flooding, wave inundation, and erosion impacts when developing and approving capital improvement projects.



Flooding in Kapa'a, East Kaua'i District. Photo Courtesy Hawai'i Emergency Management Agency

X. OPPORTUNITY AND HEALTH FOR ALL

This General Plan is based upon core goals for Kauaʻi to be a place with healthy and resilient people, and to be an equitable place with opportunity for all. These goals are more than just compatible; they are mutually reinforcing and essential to the overall vision of this Plan. The General Plan introduction noted the large number of people who are dissatisfied with Kauaʻi. This is partly due to the inability of many residents to receive the full benefits that our island and community has to offer. We know the impacts this can have on people's physical and emotional health, particularly for our youth.

This General Plan is the first to set goals focusing on nurturing healthy, resilient, diverse, and equitable communities. The following passage sums up the impact these factors have on our lives:

"If you live in a community with parks and playgrounds, grocery stores selling nutritious foods, access to good jobs and to other economic opportunities, clean air, safe streets, good schools, ample health care and social services, and neighbors who look after one another, you are more likely to thrive.

If you live in a neighborhood without these essentials, you are more likely to suffer from obesity, asthma, diabetes, heart disease, or other chronic ailments. You are also more likely to die of a stroke, a heart attack, or certain forms of cancer. You are more likely to be injured or killed during a crime, in a car crash, or simply crossing the street." -- Policy Link, *Why Place and Race Matter* (2011)

This General Plan includes ways to effectively address those factors that hinder some of our population from attaining their desired quality of life. This includes the quality of the built environment; the affordability of housing; the ability to walk or bicycle to key destinations; the safety of streets, parks, and schools; access to health care and public services; the availability of healthy foods and education; and access to recreational areas and beaches that support active lifestyles. It is particularly important to our future that we prioritize our keiki that are most in need.

This section includes subsections and actions that relate to Social Equity, Access to Education and Training, and Access to Health Services. These aspects touch all segments of society across different communities, generations, and ethnicities. They are crosscutting by nature, and have far reaching impacts on our lives. The proposed actions are focused on increasing community resilience and bettering health outcomes through improving the natural, built, and social environment.

A. Social Equity

Social equity is critical to healthy, diverse communities on Kaua'i. We can achieve this by expanding access to economic opportunity, quality education, affordable housing, and health services and ensuring no one racial or income group is unfairly disadvantaged.

Equitable communities are those that:

- ▶ Grow good, accessible jobs that provide pathways to the middle class.
- ▶ Increase the economic security and mobility of vulnerable families and workers.
- ▶ Cultivate homegrown talent through a strong cradle-to-career pipeline.
- ▶ Create healthy, opportunity-rich neighborhoods for all.
- ▶ Build resilient, connected infrastructure.
- ▶ Increase access to high-quality, affordable homes and prevent displacement.
- ▶ Expand democracy and the right to the city.
- ▶ Ensure just policing and court systems.

(Policy Link, All-In Cities: Building an Equitable Economy from the Ground Up, 2016)

Caring for Our Most Vulnerable

The General Plan prioritizes the needs of those that are the most vulnerable and marginalized through identifying priority equity areas around the island (Figure 2-14). These are areas where there are high concentrations of people living in poverty (Figure 2-15), children receiving public assistance, and people identifying themselves as minorities (Figure 2-16).

On Kaua'i, the following areas are identified as priority equity areas:

- ▶ Līhu'e-Puhi-Hanamā'ulu (Līhu'e District)
- ▶ Anahola (East Kaua'i District)
- ▶ Kōloa (South Kaua'i District)
- ▶ Hanapēpē-'Ele'ele (Hanapēpē-'Ele'ele District)
- ▶ Kaumakani (Waimea-Kekaha District)

Strengthening Community Networks

Strong community networks are essential for healthy and resilient communities. This means individuals, organizations, and businesses that know and take care of one another in the spirit of Kōkua. It means a healthy ecosystem of non-profit and community based organizations that can strengthen and enhance government efforts to address social issues through partnerships. It also means healthy individuals and families that can meet their basic needs so that they can care for one another and their greater community.

Conditions such as poverty, lack of education, crime, homelessness, discrimination, and violence erode our community relationships. Sprawling growth that moves people and businesses away from town centers and into our cars weakens rural communities. Weaker social networks and less cohesive neighborhoods are associated with higher rates of violent crime and health issues including depression, smoking, and alcohol and drug abuse.

The General Plan policies support vibrant, cohesive communities that provide people with opportunities to gather, meet, and converse on the street and in public places, and have shared positive experiences.

This includes venues for art and culture, ample public spaces, pedestrian-oriented streets, and community events that bring people together and inspire civic pride.

Celebrating Diversity

Recognizing, celebrating, and serving all forms of diversity contributes to a sustainable society. Kauaʻi treasures its diversity and recognizes the need to embrace all cultures, yet it struggles with many inequities in health, economic status, and access to housing, education, jobs, and services that need to be addressed. Kauaʻi has an extremely diverse population by national standards. 67% of people on Kauaʻi identify as a minority race as defined by the U.S. Census, which is slightly lower than the State (75.3%), but much higher than the nation as a whole (27.6%). While this racial and ethnic diversity is well integrated and widely accepted in Kauaʻi, there are social inequities that are disproportionately linked to race and many of these inequities are concentrated in specific communities. Figure 2-16 shows concentrations of people identifying as minorities by census designated place (CDP).

Figure 2-14. Priority Equity Areas

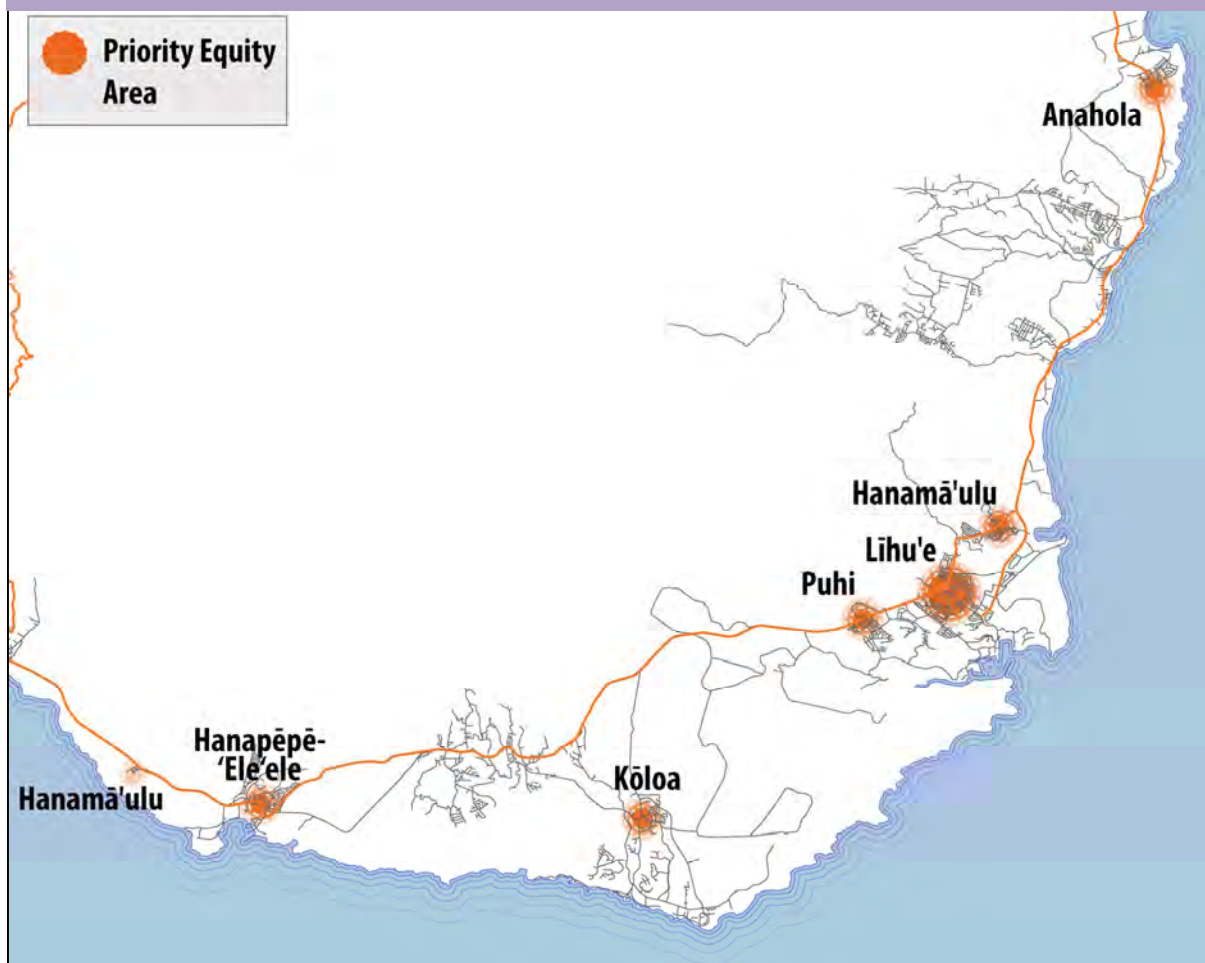
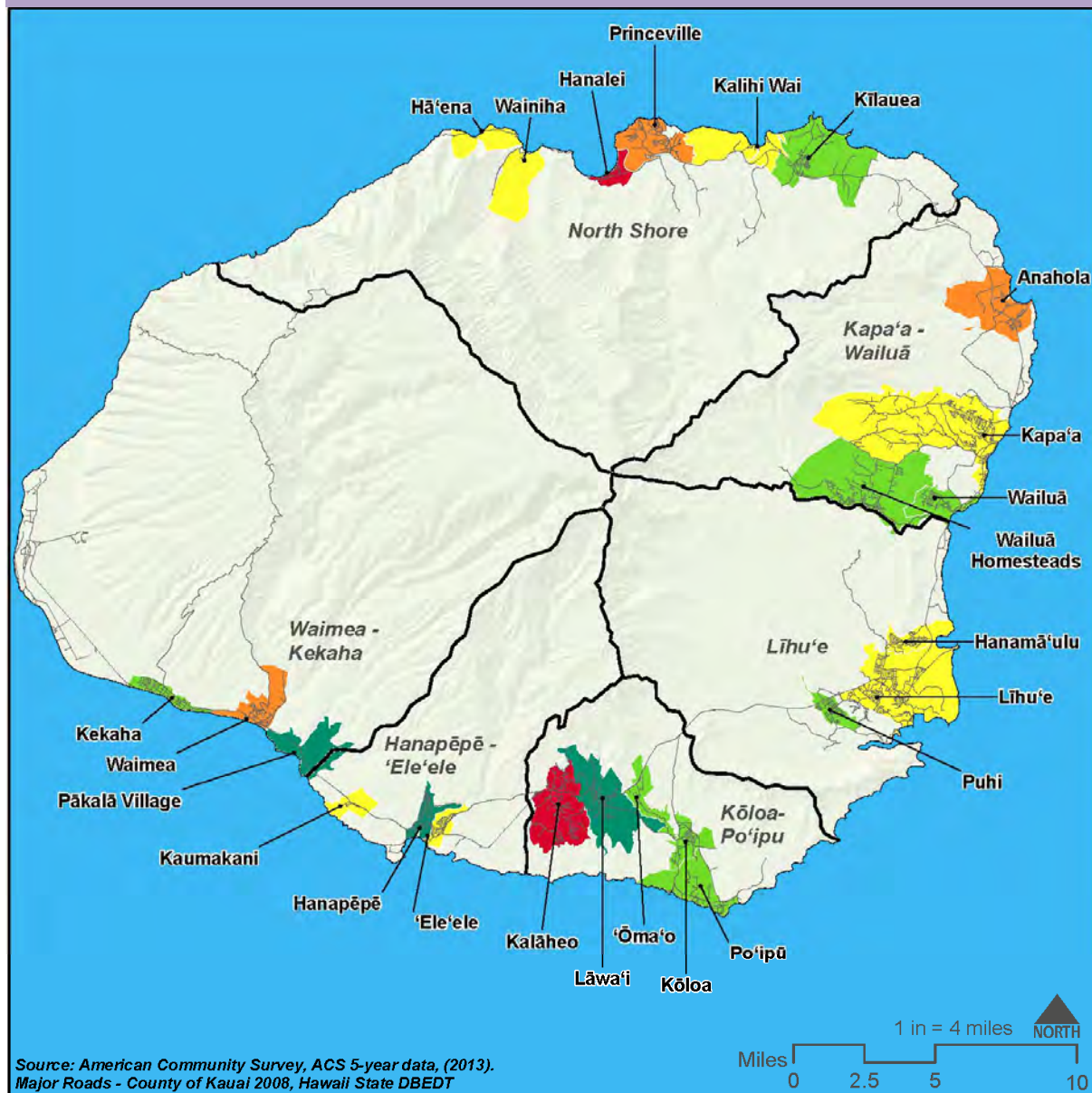
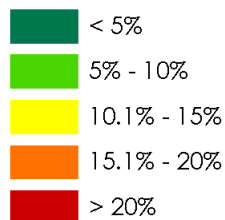


Figure 2-15. Population Living in Poverty (%) by CDP



Population that lives below the federal poverty line by Census Designated Place (CDP)

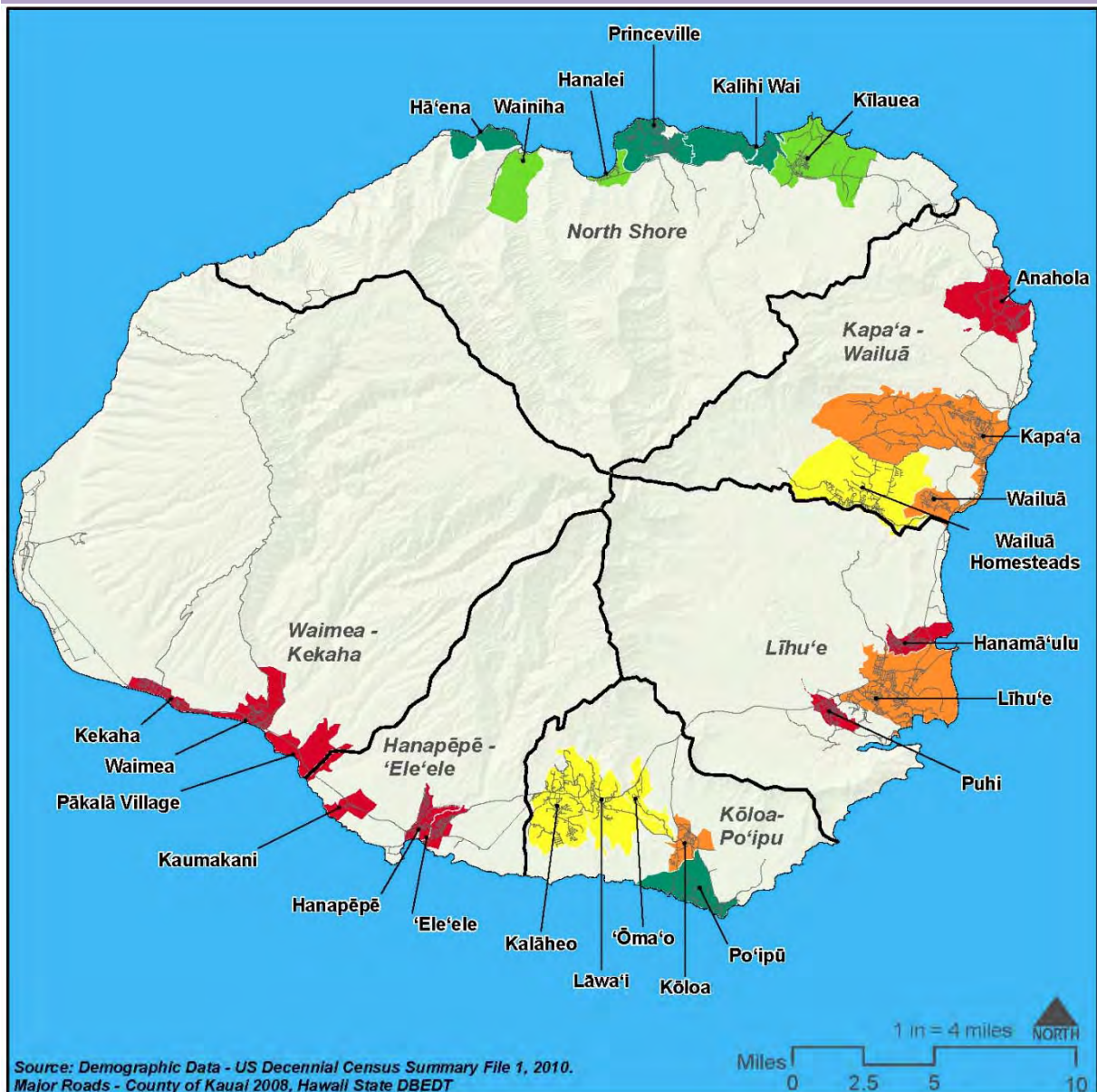


Impoverished Population (%)

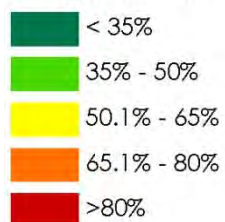
Kauai County - 11.2%
State - 11.2%
U.S. - 15.4%

Development Plan Areas
Census Designated Place (CDP)
Major Roads

Figure 2-16. Population Identifying as a Minority (%) by CDP



**Population Identifying as a
Minority Race by Census
Designated Place (CDP)**



Minority Race %

Kauai County - 67.0%

State - 75.3%

U.S. - 27.6%

Development Plan Areas

Census Designated Place (CDP)

Major Roads

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Establish health and opportunity criteria for prioritizing County programs and policies.
- b. Support the establishment of community standards for wages and benefits, ensure fair scheduling, and support worker organizing.
- c. Ensure fair hiring, equal pay, and equitable promotion opportunities within the County workforce.
- d. Reduce barriers to employment and services, such as credit checks and criminal history questions on applications for jobs and housing in both the private and public sector.
- e. Limit the proliferation of predatory lending establishments through licensing and zoning powers.
- f. Ensure that Federal, State, and County infrastructure resources are equitably distributed to low income communities.
- g. Leverage market-rate development to support long-term affordable housing through inclusionary zoning and other tools.
- h. Expand and preserve affordability in neighborhood centers around the island through zoning, incentives, and development.
- i. Provide cost-effective housing solutions in proximity to community resources and services.

2. PLANS AND STUDIES

- a. Complete a study to establish ratios for different categories of housing for workforce (<140% of median income), elderly, and disabled.

3. PARTNERSHIP NEEDS

- a. Target economic development efforts to grow high-opportunity industries that have potential for growth and to create jobs for people with less than a four-year degree.
- b. Leverage the County's procurement and contracting to assist minority and female entrepreneurs and triple-bottom-line businesses such as social enterprises, cooperatives, and B Corps.
- c. Implement targeted and local hiring practices and invest in pre-apprenticeship training on development and infrastructure projects.
- d. Ensure low-income students receive quality public education through strategies including comprehensive, place-based cradle-to-career initiatives.

- e. Support reform to school disciplinary policies to keep youth in school and on track to graduate.
- f. Deepen partnerships with Kaua'i Community College for workforce development and training programs and apprenticeships.
- g. Foster racially and economically integrated neighborhoods.

4. PROJECTS AND PROGRAMS

- a. Develop funding sources to expand, improve, and maintain high-quality transportation, water, parks, broadband, and other infrastructure in underserved neighborhoods.
- b. Create dedicated sources of funding to meet affordable housing needs over the long term.
- c. Establish land bank/trust for affordable housing (nonprofit arm). Buy and sell houses as leasehold property, and manage inflation to cost of houses.
- d. Leverage infrastructure investments to bring jobs and contracting opportunities to underserved communities.
- e. Increase access and affordability of public transit for youth and other transit-dependent populations.
- f. Ensure all residents have an opportunity to have a voice in County initiatives by making special efforts to reach low-income people, youth, non-English speaking immigrants, people with criminal records, and other traditionally underserved groups.
- g. Support programs for low-interest loan programs to purchase, expand, or rehabilitate homes on Kaua'i.



Lights on Rice Parade, Lihu'e

B. Access to Quality Education and Training

The policy to nurture our keiki demands a strong, comprehensive and quality education system. A positive educational experience encourages children to become lifelong learners who contribute to their communities and the world. Ultimately, education must provide our children, teens, college students and adults with the knowledge and skills needed to obtain a well-paying job on Kaua'i.

Increasing Access to Early Education and Care

Accessible daycare and preschool is a significant community need. In 2015, there were 27 licensed preschools and 36 licensed family child care homes on Kaua'i. The combined capacity of these facilities is 1,100 children, which contrasts with Kaua'i's population of approximately 4,400 children under five years old. Most preschools and child care homes have a long waitlist. Exacerbating the demand for preschool is a change in State law which raised the age limit for Kindergarten.



Wilcox Elementary School, Lihue District

Providing Quality Education and Facilities from K-12

The Kaua'i District's 14 public schools are administered by the State Department of Education (DOE) which controls budgeting, administration, standards and curricula. The State DOE began a strategic planning process in 2012. The 2017-2020 Strategic Plan for the State DOE is focused on making students ready for college, career and community life. School performance is measured through reports which consider test results, attendance, safety and many others. Between 2000 and 2015, Kaua'i public school enrollment declined by 1,400 students – making current enrollment far below the projected increase in the previous General Plan. Despite this decrease, the State DOE estimates that enrollment will increase from approximately 9,300 in 2015 to 11,500 by 2035.

School facilities also serve vital community functions such as being venues for public meetings, religious services, and events. In many cases they function as public shelters in the event of hurricane and tsunami warnings.

In addition to public schools, Kaua'i has a number of small but active private and charter schools. Some of these schools are based on religious belief while others provide alternative educational experiences. Kaua'i's four Hawaiian immersion schools help sustain the Hawaiian language and culture.

The County's main role is to coordinate with the State DOE over siting of new schools and to help guide facility expansion in the case of new development. This includes ensuring there are proper and supportive land uses and safe transportation networks adjacent to schools.

Improving K-12 Education beyond the Classroom

As supported in the State DOE Strategic Plan, schools should serve the community by graduating students who are ready to become positive and contributing community members. This includes reducing bullying and preparing youth for careers. The Keiki to Career Program is a network of 40 community organizations that collaborate to strengthen families, reducing bullying, and assist schools with real-world relevancy,

financial literacy training and career preparation. In addition, more lifelong learning and intergenerational education is needed, particularly for developing stronger and more supportive parenting.

Supporting the Kaua'i Community College and Increasing Training Opportunities

The Kaua'i Community College (KCC), part of the University of Hawai'i system, is Kaua'i's only post-secondary school educational facility and offers several associate degree programs. In addition to academic training, the college provides technical, vocational and cultural learning programs. Sustainability, agriculture and science have become a focus of recent programs and initiatives at KCC. The college is undertaking a master planning effort to increase student enrolment and guide facility development.

Many community members were concerned that the lack of a university on Kaua'i forces keiki to seek their bachelor's and advanced degrees off island which results in a "brain drain" of local talent. At the same time, funding limitations and current enrolment figures are obstacles in moving KCC toward university status. Another impediment to increasing student enrolment is the lack of student housing or dormitories. Given its location in Lihu'e, a major growth area, there is room for the campus to develop and expand needed facilities. Additionally, as more infill development and missing middle housing occurs in Lihu'e, this will increase the range of housing types available to students. To support this, the Future Land Use Map designates the campus area as "University" – a new designation in the General Plan designed to facilitate the growth and development of KCC.

1. PERMITTING ACTIONS AND CODE CHANGES

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| <p>a. For large new development and in new growth areas, work with the State DOE to ensure adequate school facilities, either at existing schools or at new school sites, will be available when the development is complete.</p> | <p>adequate school facilities for the children anticipated to live in their development.</p> |
| <p>b. Have developers pay their fair share of all costs needed to provide</p> | <p>c. Review development standards to support the use, expansion, and development of family childcare homes, preschools, and charter schools.</p> |

2. PARTNERSHIP NEEDS

- | | |
|--|---|
| <p>a. Promote schools as community resources for learning about specialized environmental, cultural, and historic subjects pertinent to Kaua'i.</p> | <p>c. The State DOE should design school facilities to facilitate community use during non-school hours.</p> |
| <p>b. Schools should assume important community functions such as recreational centers, meeting facilities and emergency shelters.</p> | <p>d. The State DOE should retrofit existing facilities and design and construct new facilities to serve as public hurricane shelters.</p> |

- e. Support the Keiki to Career Kaua'i programs and activities.
- f. Continue and expand the Safe Routes to School program to encourage healthy, safe and active living.
- g. Support increased enrollment at the Kaua'i Community College and the development of supportive housing and facilities for student, staff and faculty at the Puhi campus.

3. PROJECTS AND PROGRAMS

- a. Prioritize pedestrian, bicycle, and road safety improvements around and adjacent to schools.
- b. Prioritize the development and improvement of play areas or tot lots for small children in areas with high concentrations of family care homes, such as Lihu'e and Kapa'a.



Wilcox Elementary School, Lihu'e District

C. Community Health

Improved community health results when the built environment supports active living and when people have access to the resources and information they need to make healthy choices and be active participants in their health.

Improving Access to Health Services

Access to health services is a critical component to building a healthier and more equitable community. The Kauaʻi Community Health Improvement Initiative (KCHII) was established in 2013 to create a health improvement framework for Kauaʻi that aligns the various policies and stakeholders involved in health, expands the concept of public health, and creates lasting partnerships. The KCHII applies the ahupuaʻa system to individual and community health by recognizing that “upstream” root causes of poor health need to be addressed in order for the “midstream” effects and “downstream” consequences to improve. Upstream (or mauka) causes include political and policy contexts and socioeconomic conditions. Midstream effects include access to health care, qualities of the built environment, and health risk factors. These influence “downstream” consequences such as chronic disease and mortality. In this model, improving health requires effective policies to address upper and middle stream factors through improvements to the built environment, transportation, education, and other areas.

Kauai’s lack of family planning services, comprehensive, medically accurate sex education and public education about the availability and affordability of family planning services has resulted in high social and economic costs, including a higher than average teen pregnancy rate and a high unintended pregnancy rate among the general population.

Kauaʻi also needs increased participation in vaccination, disease screening and early detection and management of chronic disease. For example, there are low rates of HPV vaccinations on Kauaʻi. Support efforts to increase those rates are needed through increased education and access, in order to promote sexual and reproductive health and prevent human papillomavirus (HPV)-related cancer.

Addressing Substance Abuse

The Life Choices Agency was created in 2003 to deal with Kauaʻi’s substance abuse issues. Since then, headway has been made in certain areas. For example, the number of drug-related offenses by adults has dropped from 290 in 2010 to 58 in 2014 (*2015-2020 Kauaʻi Drug Response Plan*). However, many community members feel the increasing use of meth and other serious drugs is a top community issue, especially for youth. The *2015-2020 Kauaʻi Drug Response Plan* calls for a continuum of on-island treatment facilities and services. For example, the County has a need for a residential treatment facility. It is expensive to send those in need to Oʻahu, especially as treatment is often a lengthy process. An adolescent treatment and healing center is being planned for Kauaʻi that would provide residential substance abuse treatment and healing services.

Improving Community Health through Effective Planning

The *Kauaʻi Community Health Needs Assessment (2013)* identifies five priority issues where policy can address upstream and downstream causes of health:

- ▶ **Community Design and Planning (Built Environment):** Walkable, bikeable, and safe communities to encourage and promote physical activities and social connectivity.
- ▶ **Housing:** Transitional/homeless/affordable housing/senior housing.
- ▶ **Health and Wellness:** Easy, convenient access to affordable healthy food for busy families (concern about unhealthy fast food). Screening, early detection and management for breast cancer, cervical

cancer, diabetes, cholesterol, hypertension, colorectal cancer, and HIV as elements for upstream prevention.

- ▶ **Medical Care:** Available, accessible, affordable and integrated mental healthcare/substance abuse/developmentally disabled services and facilities. Available, accessible, affordable and integrated medical care, also known as “first to last breath”.
- ▶ **Education and Lifelong Learning:** Health education for keiki, kūpuna, ohana, and school/work/church sites (health literacy and workplace wellness).

Anticipating Future Threats to Community Health

In 2015, the State House of Representatives acknowledged that climate change will intensify existing and cause new health threats, including acute and chronic disease, stress and mental health issues, dengue and other vector diseases (*Climate Change and Health Working Group Report, 2015*). These impacts will more heavily fall on vulnerable populations – including the elderly and households experiencing poverty.

The following recommended actions are comprehensive in nature and designed to provide a coordinated and integrated approach to address specific community health needs in an equitable manner. They are designed to work in concert to improve some of the most significant health issues in Kauaʻi’s population, and support the vision of a more healthy and resilient community.

1. PERMITTING ACTIONS AND CODE CHANGES

- | | |
|---|---|
| <p>a. Provide access to frequent and convenient public transit near major job centers and health care facilities.</p> | <p>d. Consider zoning options that limit the opening of fast-food restaurants close to schools, daycare centers, or parks.</p> |
| <p>b. Change the land use code to support healthy community design.</p> | <p>e. Consider ordinances that increase visibility of health foods in stores, particularly those that accept Supplemental Nutritional Assistance Program (SNAP) and electronic benefit transfer (EBT) purchases.</p> |
| <p>c. Support the adoption and implementation of policies for smoke-free beaches, parks, condos, and cars with keiki under 13 years.</p> | |

2. PLANS AND STUDIES

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|---|--|
| <p>a. Include community health concerns in future Community Plans.</p> | <p>b. Implement and update the Kaua'i Community Drug Response Plan.</p> |
|---|--|

3. PARTNERSHIP NEEDS

- | | |
|--|---|
| <p>a. Support implementation of the Kauaʻi Community Health Improvement Initiative.</p> | <p>gardens and health/nutrition education programs.</p> |
| <p>b. Increase support and expand participation in the Better Choices, Better Health program.</p> | <p>d. Support programs for anti-tobacco education in schools.</p> |
| <p>c. Support pilot programs for intergenerational community</p> | <p>e. Support programs that increase availability of family planning services, sexual education, condoms, and contraception.</p> |

- f.** Support programs that increase access to nutritional counseling.
- g.** Work with fast-food restaurants to offer healthy options and improve labeling.
- h.** Support legislation for taxation of sugar-sweetened beverages
- i.** Support legislation to eliminate the General Excise Tax on purchases of fresh fruits and vegetables.
- j.** Work with the State to allow the use of Supplemental Nutrition Assistance Program (SNAP) benefits at farmers markets.
- k.** Support programs to increase participation in vaccination, disease screening, and early detection and management of chronic disease.
- l.** Increase access to healthy food in underserved neighborhoods and build more equitable food systems, from cultivation to disposal.
- m.** Support improved access to family planning services and vaccinations.
- n.** Support programs that improve Kaua'i's ability to respond to and recover from public health threats such as infectious disease and mosquito-borne disease outbreaks.
- o.** Support development of strategies to anticipate and reduce the health impacts of climate change.
- p.** Support programs to expand the availability of health care providers to meet identified needs.
- q.** Increase access to mental health services and the availability of mental health providers.

4. PROJECTS AND PROGRAMS

- a.** Prioritize sidewalk and bus stop improvements for accessibility near major health care facilities and group homes.
- b.** Improve the connectivity of essential services, including emergency response.
- c.** Ensure that low-income neighborhoods have high-quality parks, playgrounds, and green spaces.
- d.** Leverage Federal resources such as community development block grants and neighborhood-focused programs to create opportunity-rich neighborhoods.

D. Access to Recreation

Some of Kauaʻi's most unique and treasured areas are either on, or accessed through private property. Access to these areas is important for the health and vitality of the community, and must be balanced with education about responsible stewardship.

Addressing Access to Privately Owned Recreational Space

Kauaʻi has a growing number of valued recreational, cultural and scenic resources that are privately owned, or accessed through private property. Unfortunately, the trend is toward lessening public access to these areas for liability, privacy, and other reasons. When such resources become popular they are vulnerable to overuse, vandalism or littering, and increased risks of accidents that result in injuries or deaths. Privately held recreational spaces include numerous waterfalls and some of the island's most beautiful stretches of undeveloped coastline. Kīpū Kai in Līhu'e District is an example of the latter – it is privately owned and currently inaccessible without permission, however there is a trust with provisions that will entrust it to the State within the next few decades. Māhā'ulepū is a rugged and undeveloped coastline area in South Kauaʻi that is currently accessed through private roads and easements that are open to the public during daylight hours. Permanent public access is desired by the community. Many waterfalls that were previously popular have been closed off, including Ho'opi'i Falls and Kīpū Falls.

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Require a minimum access-way width of 10 feet and locate access ways at convenient intervals.

2. PLANS AND STUDIES

- | | |
|--|--|
| <ul style="list-style-type: none"> a. Maintain, inventory, and provide information on legal public access-ways to beaches and inland recreation areas. Conduct research on easement documents that have been executed or signed but not recorded. b. Create regional networks of public trails. Partner with private | <ul style="list-style-type: none"> landowners for missing connections via managed access. c. Community plans should explore solutions for protecting access to recreational opportunities, including fishing, hunting, surfing, hiking and other activities. |
|--|--|

3. PARTNERSHIP NEEDS

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| <ul style="list-style-type: none"> a. Inventory and improve hunting access to Forest Reserves and government trails. b. Apply for potential funding for trail acquisition, development, and | <ul style="list-style-type: none"> maintenance through Nā Ala Hele and the Hawaiʻi Tourism Authority. c. Focus trail acquisition in areas with a low number of public trails compared to the population, |
|---|--|

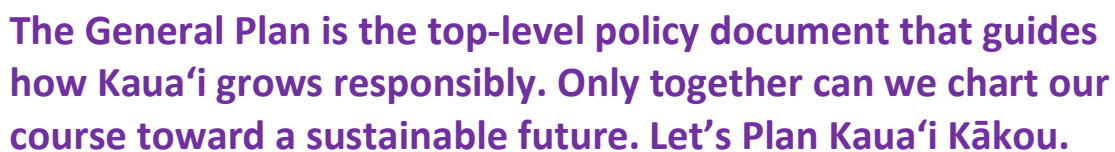
including South Kaua'i, Līhu'e, Anahola and Hanapēpē-Eleele.

- d. Work with landowners, community groups, and the Public Access, Open Space, Natural Resources Preservation Fund Commission to explore options for permanent public access to privately owned areas, such as the Māhā'ulepū coastline. Consider use of conservations easements and other tools.
- e. Manage access where necessary to preserve Māhā'ulepū's natural and cultural resources and to ensure public safety. Consider providing a comfort station and visitor education resources on the rich natural and cultural heritage of the area.
- f. Develop more ATV, motorcycle and mountain bicycling facilities so such activity is focused in areas not conducive to environmental damage.
- g. Develop a public shooting range.
- h. Work with the State to improve public access to landlocked State land that is managed by DOFAW. Increase recreational opportunities in these areas.
- i. Explore the use of surfing reserves to protect access to surf breaks, improve parking for surfers at key surf destinations, and provide appropriate signage.



Ho'opi'i Falls in East Kaua'i District is privately owned and no longer publicly accessible as of 2016.

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3.0

IMPLEMENTATION & MONITORING

3.1 IMPLEMENTING THE PLAN

Throughout the public process, many raised comments concerning the island's current state compared to the visions and goals set forth in the 2000 General Plan. Further, those intimately familiar with the last general plan commented on its inability to allow for robust monitoring and feedback as a means of implementing recommendations. Many shortcomings raised by community members arose largely in the context of questioning why good elements laid out in the previous general plan were never fulfilled.

In an attempt to compensate for the need to see progress, many suggested the adoption of specific numerical benchmarks to gauge whether an objective was attained. For example in the area of agriculture, some raised whether the plan should require a fixed percentage of food be grown and consumed on island.

The difficulty with creating and adopting guideposts as these is three-fold: 1) each statistical benchmark may not reflect the reality in its ability to be implemented given the twenty-year planning horizon in this plan; 2) agencies may neither have the resources nor the method to easily glean the information necessary to accurately monitor a prescribed benchmark; and 3) the benchmarks may distract from the overall big picture on what future state the community wishes to attain and instead create points of fixation leading to myopic and disjointed decision making.

Beyond the difficulties monitoring brightline benchmarks, attaining goals remains a function of political and economic realities locally and globally. For example, Kaua'i, like other counties in Hawai'i, faces mounting fiscal constraints resulting from worldwide economic changes and the continued reduction in Federal funding for infrastructure and other programs like earmarks.

Kaua'i's small tax base compared to its land mass, and long distances between communities that make providing public services and infrastructure expensive. However, the expectations for quality public facilities and infrastructure remain high. Although suggested actions for implementation spanned all sectors, their aggregate costs well exceed the ability's community to either directly pay for such implementation or receive external funds as adequate support.

Rather than lock in a rigid means of monitoring whether success remains apparent, a more dynamic means of building a sound set of results-based activities for the General Plan is necessary. A common model for evaluating future acts by the public and private sector would more easily allow for an overall turn in the directions the community desires through these incremental changes in our society.

Given the stated vision and goals, policies and actions by sector, this Plan's ideal future state for the island achieves many of the community's objectives by directing growth to existing centers. For example, implementation would gauge whether strong linkages are apparent between the General Plan and capital improvement investments either by project, or as a program.

The evaluation model would allow decision makers the ability to prioritize actions and direct resources toward those most integral toward furthering the plan's vision. Finally, shared responsibility and accountability for implementation are imperative to staying focused and to making measurable progress.

This Chapter discusses approaches and methods available for monitoring and evaluating implementation of the Plan's objectives while providing a framework for keeping all community members abreast of how their community is changing in real time.

3.1.1 TOOLS FOR IMPLEMENTATION

There are several major vehicles through which the plan will be implemented, following the General Plan's adoption:

1. Code Changes
2. Permit Review and Approval Process
3. Community Plans
4. Functional Plans
5. Capital Improvement Program
6. Departmental Structure and Programs
7. Partner and Developer Contributions

Comprehensive Zoning Ordinance, Zoning Maps & Development Codes

The County regulatory system is the most direct method toward attaining many objectives laid out in the plan. The Comprehensive Zoning Ordinance (CZO), Zoning Maps, and other development codes will require updating following this plan's adoption for consistency and adjustment with the new vision for the island. Active development of these amendments is a necessary step toward goal attainment, and should be evaluated in the broader context of the ideal future state while keeping in mind the details necessary to avoid conflicting regulations and loopholes.

Permit Review and Approval Process

The other direct approach toward attaining the plan's goals lay in the approval of permits. The General Plan policies and policy maps provide a basis for evaluating a development proposal for its conformance with the County's vision and desired direction. Deference should be given toward remaining consistent with the big picture envisioned by this document rather than making expedient or convenient decisions based upon areas of gray or conflicting action statements that will inevitably arise over time.

Community Plans

The community planning process for each planning district must be carried out in collaboration with community groups and committees on a regular basis. Home rule empowerment is necessary to galvanize community buy-in on this Plan and build upon each district's role in the overall island wide vision.

Functional Plans

Functional Plans for infrastructure systems and facilities, parks and housing need updating to guide public investment in support of the General Plan vision and policies.

Capital Improvements Program and Appropriations

The County's six-year Capital Improvements Program (CIP) can help aid guide the incremental investment consistent with the goals set forth in this plan. The CIP update process should include a review and incorporation of General Plan actions, particularly those identified as short term priorities, to ensure the County is making progress on its priority actions. Further, appropriations should also be evaluated in the context of what the community sees as the ideal future state.

Departmental Structure and Programs

Implementation and monitoring of the plan must be supported by the structure and programs of County agencies. Parties responsible for implementing actions, as well as monitoring, reporting, and updating the plan are clearly identified.

Partnerships & Developer Contributions

Public-private partnerships and developer contributions contribute significantly to funding County public facilities and infrastructure improvements. With the exception of standardized water and sewer facility charges, the contributions required of developers tend to be adopted ad hoc in association with specific zone change applications. The 2000 General Plan called for the County to standardize these transactions, make them more predictable and explore other applications for public-private partnerships. That recommendation is carried forward in this General Plan. Vehicles for such partnerships could also include Transfer of Development Rights (TDR), improvement districts, community facility districts, and impact fees.

3.2 MONITORING PROGRESS

A comprehensive and transparent effort to monitor the implementation and effectiveness of the General Plan will occur every two years and will include 1) performance measure reporting, for both the vision and the 20 policies, and 2) tracking of action implementation (see Action Matrix, Appendix H). A “Kākou Committee” will be established to guide this process. More frequent reporting on performance measures and action implementation will be facilitated through an online dashboard that provides updated information as it becomes available.

3.2.1 PERFORMANCE MEASURES

Performance measures can be used to track the progress toward achieving the 2035 Vision for Kauaʻi.

The Kauaʻi General Plan for the first time introduces the use of performance measurement into the planning system. During the update process, the CAC and other participants expressed the desire for greater accountability for results goals set and for actions identified in the General Plan. A review of what had happened since the 2000 General Plan was adopted was frustrated by the lack of regular reporting on results and actions.

To correct this situation, this General Plan sets a framework for measuring results that arise from the General Plan. There are two levels within the framework, plus a third model for evaluating incremental actions as they arise. The first pivots off the four Goals of the plan:

- ▶ Sustainable Island
- ▶ Unique and Beautiful Place
- ▶ Healthy and Resilient People
- ▶ Equitable Place, with Opportunity for all

The second level of the framework addresses each of the twenty policies presented in Section 1.2.

Within each framework, two types of performance measures are assigned. The first type is for the planning system, and addresses the question, how well are plans reflecting each goal. To some extent, these are process measures. The second type is outcome measures, which address the question of whether the right changes are occurring in the society and environment of Kauaʻi. Neither the planning process nor the outcome performance measures are exhaustive for the associated goal. Rather, they are

representative measures that are readily accessible (that is, already being collected). They can be made into a dashboard with the addition of baseline, targets and timeframes.

Under the framework, The Planning Department would gather and combine the measures on an annual basis and report them to the Planning Commission and County Council. They may or may not include recommendations for improvement in the framework, alternate measures, and/or new actions.

The performance measures for each goal are presented in Table 3-1. Table 3-2 lists performance measures for the twenty policies.

Table 3-1. General Plan Goals & Performance Measures

Performance Measures for Outcomes	How Measured
Sustainable Island: <i>Growing responsibly to meet the needs of current and future generations without depleting resources.</i>	
Growth in # jobs	State Data
Growth in income	Census data
Growth in percentage who can afford a home	Real estate data American Housing Survey
Unique and Beautiful Place: <i>Stewardship and protection of the natural, cultural, social, and built environment assets that are of value to the community.</i>	
Biodiversity/habitat preservation	National Wetlands Inventory
Increased use of renewable energy	EPA Watershed Data
Ecological systems with protective plans	KIUC Data
Reduction of waste generation	DPW data on solid waste
Healthy and Resilient People: <i>Increasing vitality and resilience of communities and bettering health outcomes through improving the natural, built, and social environment.</i>	
Reduced incidences of diabetes due to overweight	Health Dept. data
Increased miles of sidewalks and bikeways	DPW data on roads
Equitable Place with Opportunity for all: <i>Fostering diverse and equitable communities with vibrant economies, access to jobs and housing, and a high quality of life.</i>	
Percent disadvantaged with access to transit	Kaua'i Bus data
Change in travel time per mode	Elderly Affairs data
Number of units built for seniors	

Table 3-2. Performance Measures by Policy

Table 3-2 provides performance measures for the twenty General Plan policies. Because this is a longer and more comprehensive list of measures, they might be updated separately from the goal performance measures shown in Table 3-1. The Planning Department choose to keep them continuously updated as changes occur. They could be posted on the departmental web site and provide an ongoing dashboard on overarching progress toward implementing the General Plan.

GENERAL PLAN POLICIES		PLANNING PROCESS MEASURES <i>How well do plans reflect this goal?</i>		OUTCOME MEASURES <i>What changes are occurring in the society and environment on Kaua'i?</i>	
#	Policy	Performance Measure	How measured	Performance Measure	How measured and sourced
1	Manage growth to preserve rural character	GP and CPs designate areas of growth to be complete & walkable; CZO Ordinance	Adopted GP Land Use maps Adopted community plans	# applications received in Neighborhood Center/General/Edge areas	Permit application reviews
2	Provide housing for working families	COK, Housing Dept, <i>Consolidated Plan</i> ; Community Plans	New projects proposed (public and private)	# units built in a year that are affordable # affordable units on island # low income units	Building Occupancy permits
3	Recognize the identity of Kaua'i's towns & districts	Town plans prepared with walkable town centers; Update Historic resources inventory	PL Department records	# festivals and activities celebrating place # towns with place signage	KVB records Kaua'i Historic Foundation
4	Design healthy & complete neighborhoods	Districts with bike path and pedestrian plans	PL/DPW records	# miles bike facilities in CIP or completed # miles sidewalks in CIP or completed	PL and DPW records

GENERAL PLAN POLICIES		PLANNING PROCESS MEASURES <i>How well do plans reflect this goal?</i>		OUTCOME MEASURES <i>What changes are occurring in the society and environment on Kauaʻi?</i>	
#	Policy	Performance Measure	How measured	Performance Measure	How measured and sourced
5	Make strategic infrastructure investments	Acres of land with capacity to develop; Update Water Plan to conform to GP; update WW Facility Plans	PL Calculations; DOW DPW/WW	\$ spent to provide sewer and water to designated growth areas; increase domestic water supply, storage & distribution in infill areas.	DOW budget WW budget
6	Reduce cost of living	Housing Plan for more affordable units Public Transit plan	PL calculation: Access to transport & affordable housing	Combined Housing & Transportation Cost as %-age of HH income # houseless or at risk of houselessness	ACS (Census) State Homeless Study
7	Build a balanced transportation system	Kauaʻi <i>Multi-Modal Land Transportation Plan</i> Complete mid-range Transit Plan	Tracking of Perf. Measures and modal goals in MMLTP plan	Incr. % using public transit or alternate modes; \$ devoted to public transit or building bike facilities	PL calculations; CIP Annual Budget
8	Address Wailuā-Kapaʻa traffic	<i>Kapaʻa Transportation Solutions</i> (HDOT)	5 priority projects (fiscally constrained) 5 additional priorities	# priority projects in design # priority projects in construction	State CIP Budget and STIP
9	Protect Kauaʻi's scenic beauty	State, County or NGO Plans to preserve special areas; review shoreline districts and SMA regulations	PL outreach to alliances and partners	# alliances to preserve special areas # acres under protection; SMA regulations reviewed and updated	PL records

GENERAL PLAN POLICIES		PLANNING PROCESS MEASURES <i>How well do plans reflect this goal?</i>		OUTCOME MEASURES <i>What changes are occurring in the society and environment on Kaua'i?</i>	
#	Policy	Performance Measure	How measured	Performance Measure	How measured and sourced
10	Uphold Kaua'i as a unique visitor destination	<i>Kaua'i Tourism Strategic Plan</i> identifies unique actions; Revitalize resort areas in Po'ipū, Wailuā & Princeville	KVB/OED Tourism Plan	# activities per year unique to Kaua'i	KVB records
11	Help business thrive	<i>Comprehensive Economic Strategy</i> (CEDS)	OED records show activities identified	# New businesses started # Business survive >5 years # jobs created # incubators formed to help businesses in 5 key sectors	DBED&T or OED records
12	Help agriculture lands be productive	CEDS strategies for agriculture; Urban growth boundaries; Establish Rural zone in CZO	OED; PL Department	# acres in active product # crops for local use # pounds ag export	State DOA records
13	Protect our watersheds	Upper Watershed plans; Lower Watershed drainage and buffer areas	DLNR; County PL/DPW	# watersheds considered clean # actions to protect	DLNR
14	Complete Kaua'i's shift to clean energy	<i>Kaua'i Energy Sustainability Plan</i>	KIUC	% of goal attainment (100% by 2040)	KIUC

GENERAL PLAN POLICIES		PLANNING PROCESS MEASURES <i>How well do plans reflect this goal?</i>		OUTCOME MEASURES <i>What changes are occurring in the society and environment on Kauaʻi?</i>	
#	Policy	Performance Measure	How measured	Performance Measure	How measured and sourced
15	Prepare for climate change	<i>Kauaʻi Multi-Hazard & Resilience Plan</i> ; Prepare Hazard, Risk & Vulnerability Assessments for low-lying areas; GP Hazard Maps and policies; identify buffer areas	PL review	# adaptation measures identified # mitigation actions taken	PL with Sea Grant
16	Respect native Hawaiian rights and wahi pana	State and County programs to protect rights	PL review	# trails or sites designated for protection	PL research
17	Protect access to Kauaʻi's treasured places	Public access points map Identify areas where access needs to be restored/improved	DLNR; <i>Kauaʻi Parks & Recreation Master Plan</i>	# Public access points by planning district # Priority areas with restored/improved access	GP and CP Heritage Maps
18	Nurture our keiki	<i>Kauaʻi Community Health Needs Assessment</i> ; Keiki-to-Career Life Skills and Resilience programs	DOE Private	# youth program for K-6 # Teen programs Reduction in teen pregnancies and arrests	DPR
19	Honor our kūpuna	<i>Kauaʻi Community Health Needs Assessment</i> ; Provide elderly housing and support services	Office on Aging	# senior programs per planning district	Office on Aging

GENERAL PLAN POLICIES		PLANNING PROCESS MEASURES <i>How well do plans reflect this goal?</i>		OUTCOME MEASURES <i>What changes are occurring in the society and environment on Kaua'i?</i>	
#	Policy	Performance Measure	How measured	Performance Measure	How measured and sourced
20	Communicate with aloha	Extensive and transparent community involvement in planning; Increase public/private collaboration	PL calculation PL calculation of PPP/establish Kakou committee?	# participants in County planning and decision making # of public/private partnerships Visitor ratings of aloha spirit are high	PL calculation Council records of testimony PL/OED calculation HCVB Visitor Satisfaction Survey
		Local pride programs	OED		

3.2.2 EVALUATING INCREMENTAL ACTIONS FOR GENERAL PLAN CONSISTENCY

Many have heard of the saying "one should not lose sight of the forest for the trees." The forest is full of beautiful trees, but when one becomes fixated in looking at the individual aspects of each tree, they may forget that it is merely one of thousands in the whole forest. This analogy reflects our propensity to lose sight of the big picture when faced with an individual decision. This approach to evaluating incremental actions throughout the course of the Plan's time horizon is meant to help prevent us from becoming engrossed with one detail, one project or one policy and help those responsible for plan implementation to take a step back, take a deep breath and realign intentions with the main objective of furthering the vision, goals, and policies of the Plan.

Table 3-3 sets forth a framework for assessing incremental actions as they arise, either in the form of budgetary decisions, permitting proposals, policy changes or similar acts. As a practice, those agencies should become accustomed toward contextualizing their individual jurisdictional activities with the General Plan in this manner.

Table 3-3. Incremental Action Evaluation for General Plan Consistency

Building a Solid Foundation	
a.	Describe the issue, problem or need based on the current situation (why this needs to be addressed).
b.	Describe the ideal future state (goal, big picture) specific to this sector or component of the plan).
c.	Describe the target state (sometimes called objectives) – what you want to ultimately achieve by 2035 in specific, clear and measurable terms.
Developing Results-Based Actions	
a.	Describe “why” the current situation exists (or challenges to achieving the ideal future state – these reasons may serve as points of intervention that will make up the actions by sector.
b.	Describe the interventions (actions) that should be taken in order to achieve the target state (specific to each of the 3 “whys”). <ul style="list-style-type: none"> Does this come from the plan? Has it been modified from the plan?
c.	Who might the implementing partners be for each intervention (actions)?
d.	Assumptions – What makes you think these actions will address the three “whys”?

3.2.3 TRACKING AND REPORTING PERFORMANCE MEASURES AND ACTION IMPLEMENTATION

To monitor General Plan implementation, the Planning Department will report on completed actions using the Action Matrix (Appendix H). To monitor progress toward the vision and assess trend conformance with the policies, the Planning Department will review and report progress on the General Plan's policy performance measures (listed in Table 3-2) every two (2) years. The goal-oriented performance measures listed in Table 3-1 may be tracked and reported upon more frequently. To ensure transparency and community participation in the implementation and monitoring of progress toward the vision, the Planning Department intends to establish a "Kākou Committee" appointed by the Mayor's office. Such a committee would include both public and private partners that have a stake in implementing the General Plan.

Biannual review of policy performance measures will be accomplished through facilitated meetings of the Kākou Committee, as well as interviews with each County agency responsible for implementation. Planning Department Staff will prepare a checklist of actions that each agency is responsible for and indicate whether or not the action is completed, whether it is still applicable, and note any changes.

The final report will be presented to the Planning Commission and made available to the public online. It may also be presented to the Mayor's cabinet and forwarded to the County Council. The release of the report will be accompanied by community outreach and an open house to keep the public informed and engaged in the Plan's implementation.

3.2.4 COMMUNITY EDUCATION & CAPACITY BUILDING

Kaua'i's planning system is complex. From the State Land Use Districts to County zoning, it is difficult for many to understand the terminology and potential impact of community planning. Education, especially focused at youth, has the potential to increase the quality of input and level of discussion on complex issues where tradeoffs are involved. During the General Plan process, many community members expressed a desire to be more educated about land use planning. The Planning Department is already working with some schools on youth planning curriculum, and is considering offering "Planning 101" seminars to coincide with the General Plan monitoring cycle.

3.2.5 UPDATING THE GENERAL PLAN

The Kaua'i County Code requires the County Planning Department to conduct a comprehensive review and update of the General Plan Update every ten (10) years. In practice, that does not always happen, and even if it did, ten years is a long time when information and conditions are constantly changing. This plan aspires to be adaptable and responsive by building in a bi-annual review and reporting process that allows the County to take stock and keep a record of its progress, evaluate what's working and what's not, and consider how to change course or incorporate the best available information. The policies, actions, and land use map may be updated in response to unexpected trends or new information. In this way, this General Plan can be a "living document".

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Bottom Image: Port Allen generating facility and solar farm.

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4.0

FUTURE LAND USE

The Future Land Use Map spatially represents the County's growth policy and communicates the desired development pattern to residents, landowners, businesses, and government agencies. The map will guide future boundary amendment action at the State level and amendments to zoning districts and development standards at the County level.

4.1 DIRECTED GROWTH

The Future Land Use Map, shown in Chapter 5, is the backbone of the General Plan and is a critical element in the State and County's land use and regulatory planning system. Map consistency is required for all boundary and zoning amendment actions. The map represents the development pattern needed to accommodate projected growth and support the 2035 Vision and Goals.

The Map was updated through an in-depth public and technical process. Specific changes were based on community input obtained through visioning workshops, community meetings and stakeholder consultation. Existing entitlements and legal rights were considered as well. Updated population projections determined the extent of new growth areas, while sea-level rise and other technical planning information informed whether or not certain areas are appropriate for development. A detailed overview of the process is included in Section 4.4.

The Future Land Use Map aligns with the General Plan's policy by directing growth to existing communities through infill and mixed-use development that provides a range of more affordable housing types. New communities, located adjacent to existing towns, will be designed to support housing for locals, a range of civic space, and the County's multimodal transportation goals. Consistent with the desire to limit growth North of the Wailua Bridge due to congestion concerns, the majority of growth is steered to the Lihue and South Kaua'i Planning Districts. This also serves to reduce the cost of living by locating more housing near major job centers. Additional growth is allocated to the Waimea-Kekaha, Hanapēpē-Eleele, East Kaua'i and North Shore planning districts based on historic and natural increase trends.

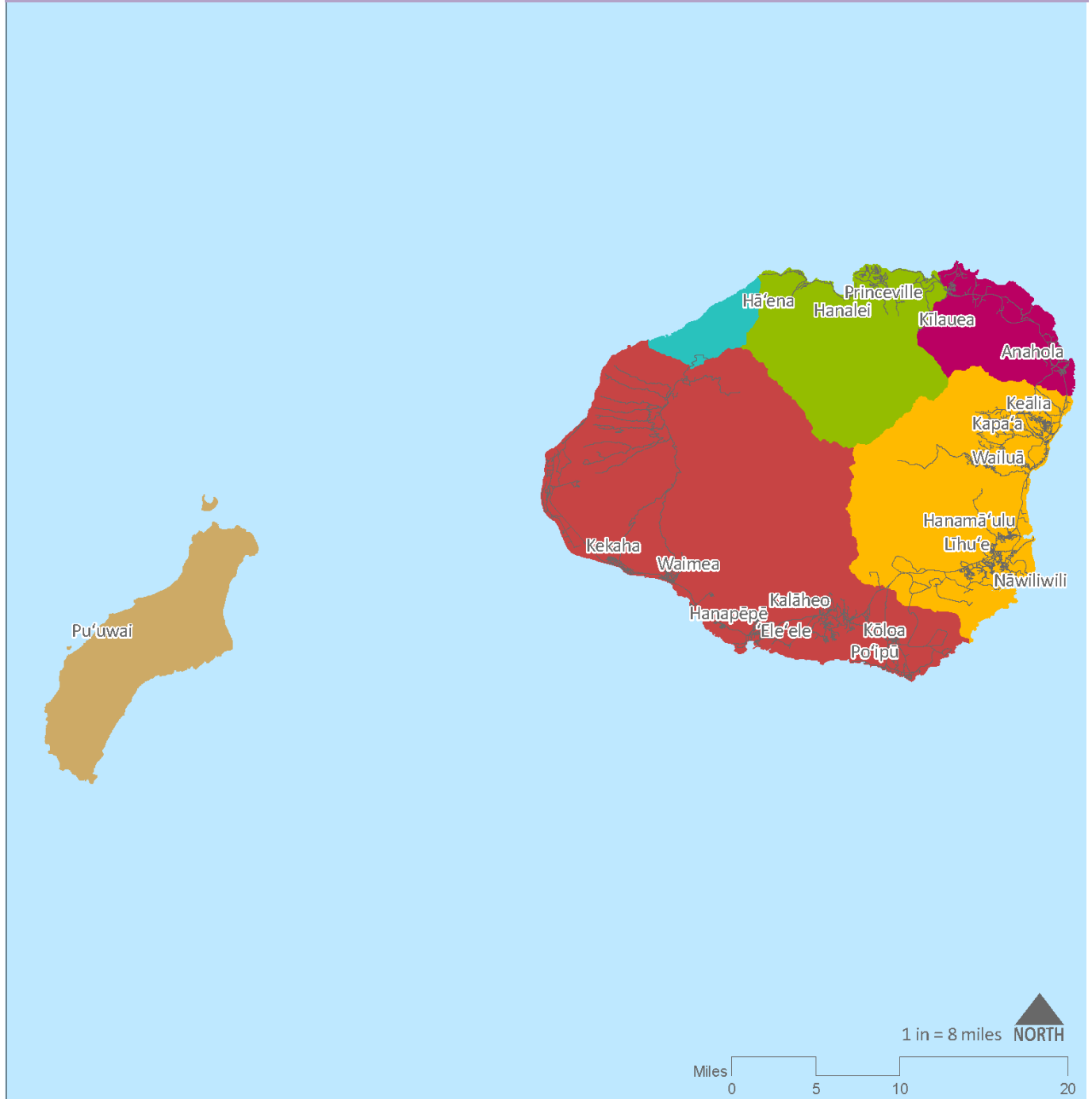
The Need to Direct Future Growth

Building Upon Historic Settlement Patterns

Prior to Western settlement, a complex system of land division existed across Hawai'i. An island, or moku, was divided into several moku, the largest units within each island. Kaua'i has five moku and Ni'ihau represents a sixth. Moku were divided into ahupua'a, land sections that extended from the mountains to the sea. The size of the ahupua'a depended on the resources of the area. Each was a self-sustaining unit, with resources to provide for the local population, and sufficient surplus to allow for trade.

Kaua'i embraces the concepts of moku and ahupua'a and seeks to perpetuate the names, symbols, and knowledge associated with them through education and signage. The Kaua'i Nui Kuapapa program was established for that purpose, and signs have been installed along Kaua'i's roadways to indicate moku boundaries (also shown on Figure 4-1).

Figure 4-1. Kauaʻi Nui Kuapapa, Moku o Kauaʻi



- Kona
- Puna
- Koʻolau
- Haleleʻa
- Nāpali
- Niʻihau

Kaua‘i’s towns were originally sited at sea harbors and crossroads, some of which pre-dated the arrival of Europeans. During the plantation period, settlements on Kaua‘i were plantation camps centered on sugar cane fields. These places were built to a pedestrian-oriented scale that made it possible to get around on foot. The surrounding sugar cane fields created a greenbelt that differentiated towns from agricultural and natural areas. This relationship between built areas and surrounding natural or agricultural lands heavily influences Kaua‘i’s character and has fostered Kaua‘i’s rural identity.

Even with the rise of the automobile and the trend of sprawling development patterns, the legacy of these walkable settlements are seen in Kōloa, Hanapēpē, Hanalei, Kapa‘a, and other towns. The directed growth policy seeks to revitalize, restore, and celebrate these characterful towns as unique places that promote healthy economies and community life.



Kona Moku sign along Kaumuali‘i Highway, South Kaua‘i (2015)

Protecting Kaua‘i’s Rural Character

Kaua‘i’s natural environment has always defined the character of the island. Its built environment consists of small, mostly rural communities separated by expanses of open space and working agricultural lands. Each community maintains a unique sense of identity and has features and qualities that its residents would like to see preserved. Each also has elements that can be improved upon. Shared challenges in Kaua‘i’s communities include preserving and restoring the vitality of neighborhood centers, providing local-serving goods and services, improving walkability and connectivity, and increasing opportunities for social interaction and employment.

While Līhu‘e is widely seen as the appropriate urban center for the island, most people in outlying communities would rather not drive to Līhu‘e for their daily needs. However, the current land use pattern of growth forces them to do so, adding to the burden upon the island’s roads and infrastructure. Policies and development patterns supporting compact communities with vibrant neighborhood centers will reduce transportation impacts contributing to a sustainable future and help preserve the laid-back lifestyle that Kaua‘i residents value.

The *Land Use Buildout Analysis* (2015) indicates that if existing development trends continue, significant residential growth would occur on the agricultural and open zoning districts, and be comprised of predominantly single-family homes on large lots. Moreover, this growth would be focused on the North Shore and East Kaua‘i planning districts, as it has over the past 15 years. Such development would exacerbate sprawl onto agricultural land, stress limited rural infrastructure, and increase traffic – ultimately undermining Kaua‘i’s sense of rural character.

The Future Land Use Map was developed to avoid and reverse these trends. By focusing development, uses and density within and around existing towns, agriculture land and the open space between towns can be preserved. The strategy is to accommodate as much of the projected housing need within and adjacent to existing developed areas, and discourage new residential and resort development in areas not directly adjacent to existing communities. This means allowing and incentivizing increased density and infill within a five-minute walk of town centers.

Supporting Compact Development and Growth Allocations

Some communities have already taken steps to focus growth in their existing town cores through recent planning efforts. “Special Planning Areas” were established through the Līhu’e Town Core Urban Design Plan (2010) and the South Kaua’i Community Plan (2015). Compact, mixed-use development is supported by place-based zoning codes which focus on building size, type, and location rather than use, particularly in neighborhood centers and new communities. The Land Use Map provides the framework for similar planning efforts to occur at the Community Plan level for other planning districts.

The Future Land Use Map also manages growth through the spatial allocation of anticipated population and housing increases. The location and extent of new growth areas were determined through the population projections which assigns future growth to each of the six planning districts (refer to Chapter 1). Consistent with the General Plan’s policies and the Līhu’e Community Plan (2015), 40 percent of future growth is allocated to the Līhu’e District. South Kaua’i will accommodate 25 percent of future growth. East Kaua’i, which is the most populous district, is projected to receive 20 percent of future growth. 15 percent of future growth is allocated to the remaining three districts – North Shore, Waimea-Kekaha, and Hanapēpē-Ēleele – to provide for natural population increase.

4.2 FUTURE LAND USE MAP DESIGNATIONS

The Future Land Use Map designations describe the desired type of land use in broad terms. All boundaries are generalized and do not carry the legal weight of metes and bounds. In many cases, more specific planning and regulatory action is required to refine and implement the map. Some previous designations have been carried through, but the policy for these designations may have changed. Other designations have been consolidated or modified into new categories. Designations were developed or updated based on an in-depth public process described in Section 4.4 and Appendix C. The twelve designations include:

- A. Natural
- B. Agriculture
- C. Homesteads
- D. Neighborhood Center
- E. Neighborhood General
- F. Residential Community
- G. Urban Center
- H. Industrial and Transportation
- I. Military
- J. University
- K. Parks and Recreation
- L. Golf Courses

The following section describes the designations in detail and includes Table 1-5, which summarizes the designations by acreage, density, intensity and use. Major changes by Planning District are summarized in Table 4-2, while a more detailed rationale of the process and community-level analysis is included in Section 4.4.

A. Natural

Areas designated as Natural have either limited development capacity or are not suitable for development due to topography, hazards vulnerability, sensitive resources, and other constraints. They include all State Land Use Conservation District lands and some County Open Zoning District land. These areas include the many ridges, waterfalls, river valleys, and rugged coastlines of the island that comprise its open spaces and scenic views. Very few residential uses are found in the Natural designation and are generally not encouraged.

Actions for the Natural Designation are found in the following Chapter 2 sections: The Watershed, Shared Spaces and Heritage Resources.

Changes from the Previous General Plan Land Use Map

Natural replaces the Open Designation in the previous General Plan. The Open Designation included undeveloped natural areas as well as some areas that are vegetated but developed and actively managed, such as golf courses.

B. Agriculture

It is the County's policy to preserve and protect Agricultural lands, particularly those of the highest quality. Therefore, Important Agricultural Lands (IAL) are also identified on the Future Land Use Map. Preserving agricultural lands contributes to self-sufficiency and helps preserve Kaua'i's rural character and lifestyle. Agriculture lands are held in reserve for agricultural purposes with little residential development. These areas range in scale from large agricultural fields to small diversified farms.

While the 2000 General Plan acknowledged issues related to residential encroachment into agricultural lands, this development pattern continued to expand, especially on the North Shore and East Kaua'i. The General Plan recognizes that residential development on agricultural lands is an unsustainable trend, and emphasizes preserving agricultural lands in intact form while limiting other uses. When development does occur, it should be clustered so as to minimize the requirements for new infrastructure and the impacts on open space and adjacent land uses.

Actions for the Agricultural Designation are found in the following Chapter 2 sections: Agriculture and Agricultural Worker Housing.

Changes from the Previous General Plan Land Use Map

The Agriculture designation was expanded to include those lands no longer designated Resort or Residential Community. It has also been modified to differentiate between Important Agriculture lands (IAL lands) and non-IAL Agricultural lands.

C. Homesteads

Homesteads are existing low-density rural residential communities that were created in the early 1900s under the 1895 Land Act. There are numerous homestead lots, mostly within South Kaua'i and East Kaua'i districts, that have a residential community form. The Homestead designation allows for single-family dwellings even if the parcel is in the State Land Use Agricultural District. The State Land Use Law requires residential dwellings within the State Land Use Agricultural district to be "farm dwellings," meaning that the occupant needs to earn income from agricultural use of the land (HRS §205-4.5(a)(4)). However, single-family dwellings are permitted on lots existing before June 4, 1976 (HRS §205-4.5(b)). Lands mapped as Homestead are included within this designation although the underlying zoning is agriculture because they are entitled to

residential use and many parcels have long been developed with single-family residences. The policy for Homestead areas is to allow incremental buildout of existing areas, while limiting the development and dispersal of new homesteads and agricultural communities.

Changes from the Previous General Plan Land Use Map

The Homestead designation is new and was created to acknowledge existing rural community form of homesteads in Kalāheo, Wailua and Kapaʻa.

D. Neighborhood Center

Neighborhood Center is a new designation focused on historic town cores and corresponds to existing or future areas appropriate for accommodating infill development and growth. Centers consist of a mixed-use core with a cluster of retail and service activity, civic spaces and primary destinations, along with residential uses. This core area can support an interconnected network of streets and blocks that encourage multimodal transportation access. Centers typically comprise a mix of detached and attached buildings between 1-5 stories in height.

Actions for the Neighborhood Center Designation are found in the following Chapter 2 sections: Town Centers, New Communities, and Transportation.

Changes from the Previous General Plan Land Use Map

Neighborhood Center is a new designation. It updates the previous Town Center boundary and replaces Urban Center and Residential Community in some areas. The designation works with Neighborhood General to indicate existing and new mixed use centers where growth and revitalization should be prioritized.

E. Neighborhood General

The Neighborhood General Designation applies to areas within a quarter mile, or five-minute walk, from Neighborhood Centers. This designation is intended for medium intensity mixed-use environments that support the town core with housing, services, parks, civic/institutional, home occupation, and commercial uses. Buildings in this designation are mostly detached, with some attached, 1-2 stories in height that can accommodate a range of multifamily housing types.

Actions for the Neighborhood Center Designation are found in the following Chapter 2 sections: Housing, Shared Spaces, and Transportation.

Changes from the Previous General Plan Land Use Map

Neighborhood General is a new designation. It was designated over the existing Urban Center and Residential Community designation where it was included within a quarter mile radius of Neighborhood Center. This included the Agriculture Designation in some areas.

F. Residential Community

This designation indicates existing areas that are primarily residential with few to no other uses. These areas are located outside the quarter mile boundary of Neighborhood Center and is no longer intended to be utilized as a growth tool to indicate areas of future development. The exception is the Lima Ola affordable housing project in ʻEleʻele. Instead, the majority of future residential needs are directed to the existing and proposed Neighborhood Center and Neighborhood General designations.

Actions for the Residential Community Designation are found in the following Chapter 2 sections: Housing and Shared Spaces.

Changes from the Previous General Plan Land Use Map

In addition to being largely replaced by Neighborhood Center and Neighborhood General, Residential Community was removed from areas where it was not possible to accommodate compact and walkable development directly adjacent to existing towns. This includes areas west of Waimea Town, along Ala Kalanimaka in Kōloa, on the Huleia Plateau in Puhi, and mauka of the Princeville Airport. All these areas have converted to Agriculture.

G. Urban Center

The Urban Center Designation has largely been replaced by Neighborhood Center and Neighborhood General. Urban Center is only applied in the Līhu'e District, which is expected to absorb half of the island's future growth to 2035. Līhu'e contains multiple neighborhood centers with overlapping walksheds, creating a nearly continuous urban fabric. In this district, Urban Center is applied to urbanized areas that accommodate intensive urban uses and zoning such as general commercial and general industrial. Actions for the Urban Center Designation are found in the Līhu'e Community Plan and the following Chapter 2 Sections: Shared Spaces, Housing.

Changes from the Previous General Plan Land Use Map

Previously, the Urban Center designation was applied to “centers of government, commerce and transportation that serve the entire County or a large region.” In addition to Līhu'e, this included Port Allen, and an area adjacent to Kapa'a Middle School. The Neighborhood Center designation replaces Urban Center in Port Allen. The policy addressing Wailua-Kapa'a Traffic and managing growth north of the Wailua Bridge influenced the decision to remove the swath of Urban Center from the area adjacent to Kapa'a Middle School.

H. Resort

Entitled or partially entitled resort development could add more than 3,000 resort units to the existing visitor unit inventory. Most of these entitlements have no expiration date. Given concerns regarding stressed infrastructure including roads, wastewater systems, and parks, the policy is to prohibit expansion of Visitor Destination Area (VDA), and where possible, to reduce VDA boundaries and remove Resort areas where entitlements do not exist. Many in the community desired a shift toward a “use it or lose it” approach toward resort development. Use it or lose it refuses lack of action toward entitling over the past few decades, indicates the market's ability to start and absorb this type of product in that spatial location, or a developer's willingness to make forward progress toward utilizing the General Plan designation. Given this community desire, the General Plan Update reduces the island's total resort acreage.

Changes from the Previous General Plan Land Use Map

Consistent with the policy to not expand the Visitor Destination Area (VDA), Resort Designation was removed or reduced in unentitled areas (without County Resort Zoning or Visitor Destination Area) and where there was little community support for resort expansion such as Nukoli'i. Further restrictions are required on remaining areas without entitlements, by policy in *Actions by Sector VI Economy Section 1 Permitting Actions*, to insure furtherance of the “use it or lose it” policy, and provide a short window for areas like Princeville and Kikiaola to either require the developer to commit investment toward using the areas as resort or it will revert to agricultural usage.

Table 4-1. Changes to Resort Areas

District	Action
Waimea-Kekaha <i>Kīkīaola Land Company</i> <i>holdings east of Waimea</i> <i>Plantation Cottages</i>	70 acres of Resort Designation changed to “Conditional” Resort, to allow for a detailed community process to determine the appropriateness, scale and extent of future resort development in Waimea-Kekaha.
Līhuʻe <i>Non-entitled resort lands in</i> <i>Nukoliʻi, south of Kauaʻi Beach</i> <i>Resort</i>	30 acres of Resort was designated Agriculture.

I. Industrial and Transportation

These designations apply to areas that exclusively accommodate business, transportation, production-oriented, and light industrial uses. In general, these uses need to be buffered from surrounding land uses due to noise and other considerations. Lands within the Transportation designation are used predominantly for major shipping and transportation facilities including Līhuʻe Airport, Nāwiliwili Harbor, and Port Allen Harbor.

Actions for Transportation are found in Chapter 2.

Changes from the Previous General Plan Land Use Map

The Transportation Designation was newly applied to the Princeville Airport, which was previously designated Residential Community. The Industrial designation is new. Industrial applies to areas with existing Industrial zoning and includes potential Industrial areas such as the Makaweli and Kōloa mill sites.

J. Military

The Military designation describes lands under the control of the U.S. Armed Forces. It is unchanged from the equivalent designation in the 2020 General Plan. Uses within the Military designation include residential, office, and various facilities related to the mission of the installation. The public is typically restricted from access. This designation is limited to the Pacific Missile Range Facility at Barking Sands.

Actions for PMRF are found in Chapter 2.

Changes from the Previous General Plan Land Use Map

The Military designation is unchanged.

K. University Zone

University Zone is applied to the parcels owned by the Kaua'i Community College (KCC), the island's only post-secondary educational institution. The designation acknowledges KCC's plans for expansion and that the area should provide facilities, housing and uses to serve the student, faculty, and staff population.

Actions for Access to Quality Education are found in Chapter 2.

Changes from the Previous General Plan Land Use Map

The University Zone designation is a new designation on the General Plan Land Use Map.

L. Parks & Golf Courses

The Park Designation describes major active public and private parks. The designation includes state parks, regional and district parks, stadiums, linear parks, and beach parks. Actions for parks are found in Chapter 2. A new designation is "Golf Courses". Golf Courses were previously included in the Open and Parks and Recreation designations.

Actions for Shared Spaces are found in Chapter 2.

Changes from the Previous General Plan Land Use Map

All State and County parks, including the Natural Tropical Botanical Garden's properties in South Kaua'i, were included to the extent allowed by the scale of the map. A new designation is "Golf Courses". Golf Courses were previously included in the Open and Parks and Recreation designations.



Commercial area along Kūhiō Highway, Līhu'e Town

Table 4-2. Major Changes by Planning District

District	Description
Waimea-Kekaha	<p>Two areas west of Waimea changed from Residential Community to Agriculture.</p> <p>60 acres of Resort changed to “Conditional” Resort to allow for a community planning process to determine the appropriateness, scale and extent for resort development in Waimea.</p>
Hanapēpē-ʻEleʻele	<p>Neighborhood Center, Edge and General Designation added to both Port Allen and Hanapēpē Town to be consistent with DHHL plans and to connect Lima Ola to Port Allen.</p> <p>75 acres for planned Lima Ola affordable housing development changed from Agriculture to Residential Community.</p> <p>New Neighborhood Center and Neighborhood General added to Port Allen.</p> <p>Approximately 19 acres in Makaweli on existing mill site from agriculture to industrial.</p>
South Kauaʻi	<p>Neighborhood Center, Edge and General Designation applied to Kōloa, Kalāheo and Poʻipū Roundabout Area.</p> <p>New Neighborhood Center at Poʻipū Mixed Use Gateway.</p> <p>Residential Community removed from 60 acres above Weliweli Tract.</p>
Līhuʻe	<p>Neighborhood Center applied to Līhuʻe Town Core, Puhi Mauka, Isenberg Mauka, Hanamāʻulu Town, and area in Hanamāʻulu fronting Highway adjacent to Triangle (west of bluff) formerly owned by EWM.</p> <p>Urban Center applied surrounding Neighborhood Centers and within Urban Growth Boundary.</p> <p>Residential Community removed from areas along Kīpū Road.</p>
East Kauaʻi	<p>Urban Center designation around Kapaʻa Middle School changed to Agriculture (site of proposed Hokua Place development).</p> <p>Urban Center in Kapaʻa removed and Neighborhood Center/General/Edge applied.</p> <p>Portion of area behind Coco Palms in the Flood Zone changed from Resort to Natural.</p> <p>New Neighborhood Center at Kapahi. Anahola Post Office, and Anahola Town Center (to match DHHL’s Anahola Town Center Plan).</p>
North Shore	<p>Neighborhood Center, Edge and General Designation applied to Hanalei and Kīlauea.</p> <p>Kīlauea town center expanded to accommodate growth.</p> <p>Residential Community at Princeville Airport changed to Transportation.</p> <p>Residential Community mauka of Princeville Airport removed and changed to Agriculture.</p> <p>Resort designation makai of highway limited by policy in <i>Actions by Sector VI Economy Section 1 Permitting Actions</i>.</p>

4.3 FUTURE LAND USE MAP IMPLEMENTATION

Albeit important, the Future Land Use Map is just one component of Kauai's planning system. If growth is to be effectively managed and accommodated, the Future Land Use Map will have to be implemented through regulatory and development action. Given existing residential buildout trends, the affordable housing crisis, and the slow pace of the land use entitlement process, implementation will require concerted effort to move forward the State Land Use District boundary amendments, County zoning amendments, Community Plan updates, and infrastructure improvements needed to support the desired growth pattern. However, the way forward is not guaranteed. Whether or not future development aligns with the Map is dependent on action taken by the State Land Use Commission, individual developers and elected officials. The economic situation of the State and County will no doubt impact the pace of implementation as well.

The previous General Plan utilized the Urban Center and Residential Community to indicate existing and future urbanized areas – or those areas with or requiring future State Land Use Urban District and/or County Zoning Amendments. The update includes these and Neighborhood Center and Neighborhood General – thus directing growth into a compact urban form around a strong town core. The new growth areas needed to accommodate housing demand are connected to existing centers, building upon or providing a new mixed use center. It is critical that the County focus land entitlement approval in these areas.

In order for new growth to support the unique character of existing towns, a place-based zoning framework will allow communities to shape the feel and design of future infill development and housing types. For this to occur, the island-wide application of place types should inform community plan updates. For example, the *South Kaua'i Community Plan (2015)* identified place types for existing and proposed centers, and utilized them as the basis for developing and applying Form-Based Code transect zones. The Form-Based Code for South Kaua'i overlaid the zoning regulations and was adopted as part of the Community Plan. Place types are described in more detail in Section 4.4.

XI. ACTIONS FOR FUTURE LAND USE MAP IMPLEMENTATION

1. PERMITTING ACTIONS AND CODE CHANGES

- a. Implement a zoning program to comprehensively redistrict and rezone lands consistent with the Future Land Use Map and updated Community Plan and map designations.
- b. Build upon place types in future Community Plans and update zoning and development standards to be place-based.
- c. Support State Land Use Boundary Amendment Petitions for new Urban District consistent with the Future Land Use Map.

2. PLANS AND STUDIES

- a. Use the community planning process to update and refine the Future Land Use Maps as needed.

4.4 UPDATING THE LAND USE MAP AND COMMUNITY VISIONS

Process Overview

The Future Land Use Map was updated to ensure consistency with the policy direction. Changes account for new information on development plans and proposals, as well as public input on the desired form, character, and degree of change for communities. Table 4-3 describes the process and resources that informed the update.

Table 4-3. Actions & Resources Consulted for Land Use Map Updates

Action	Resources Consulted
Consulted population allocations and buildout projections contained in the General Plan technical studies	<i>Land Use Buildout Analysis</i> (PBR Hawaiʻi, 2015) <i>Socioeconomic Analysis & Forecasts</i> (SMS Research, 2016)
Confirmed or updated information on entitled lands and landowner plans	County permit records Landowner interviews
Incorporated information from South Kauaʻi and Līhuʻe Community Plans regarding areas of change and land use designations	<i>Līhuʻe Community Plan</i> (2015) <i>South Kauaʻi Community Plan</i> (2015)
Applied place types and right-sized Neighborhood Centers in Waimea-Kekaha, Hanapēpē-ʻEleʻele, East Kauaʻi, and North Shore	General Plan Community Visioning Workshops (November 2015 and April 2016)
Applied/overlaid information on hazard areas and infrastructure to existing developed areas and future growth areas	<i>General Plan Infrastructure Study</i> (RM Towill, 2015) <i>Infrastructure Assessment for the General Plan Update</i> (SSFM International, 2016) <i>Kauaʻi Climate Change and Coastal Hazards Assessment</i> (2014) <i>NOAA Sea Level Rise (SLR) Viewer</i> State and County GIS Hazard Layers
Applied Neighborhood Center and Neighborhood General designations to areas identified for growth	<i>Līhuʻe Community Plan</i> (2015) <i>South Kauaʻi Community Plan</i> (2015) General Plan Community Visioning Workshops (November 2015 and April 2016)
Updated and applied General Plan land use designations for areas outside Neighborhood Center and General areas	<i>Kauaʻi General Plan</i> (Kauaʻi County, 2000)

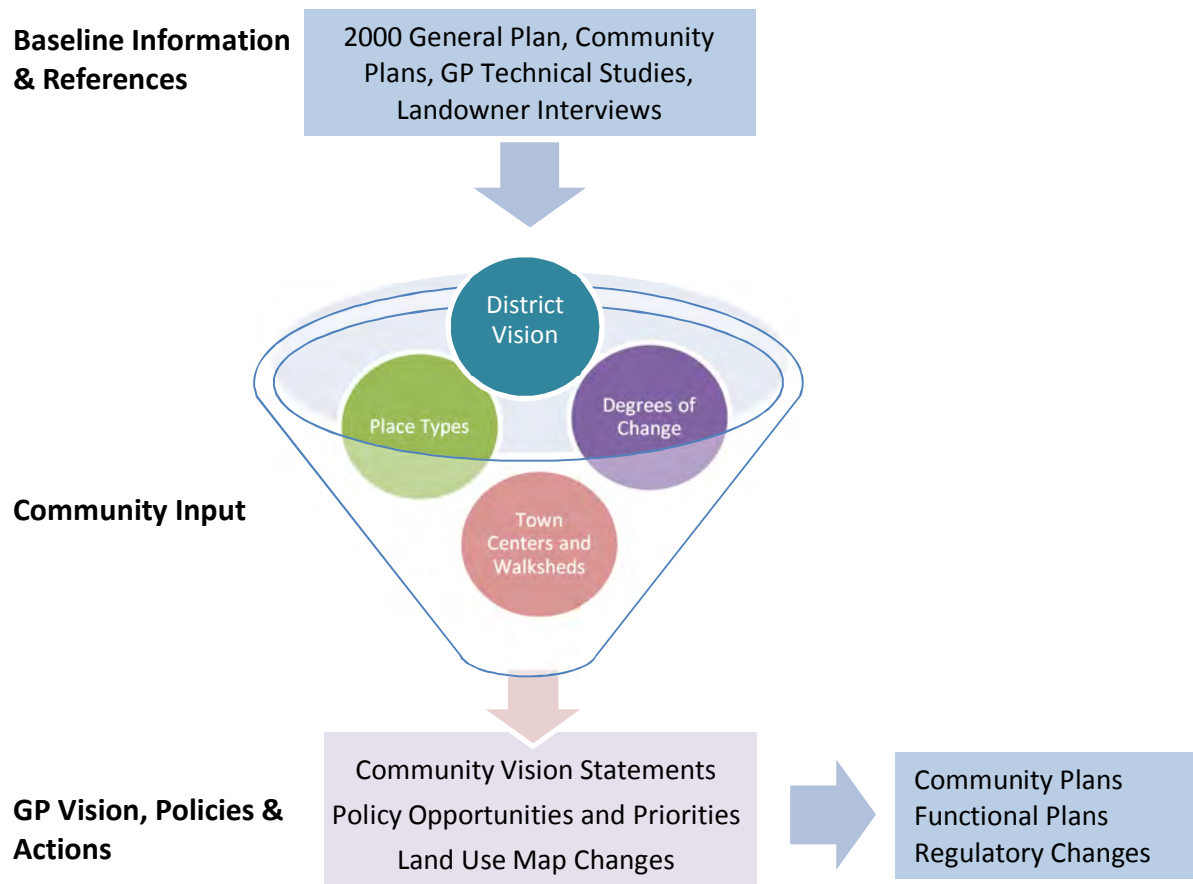
Community Visioning Workshops

District-specific input shaped the update and development of the Future Land Use Map. Intensive workshops engaged communities in determining how each place sees itself today, how it envisions changing, and what characteristics and values are important to preserve.

It was important to conduct this exercise in areas without recently adopted community plans like South Kaua'i and Līhu'e. The workshops included bus and walking tours of ten communities: Hanapēpē, 'Ele'ele, Waimea, Kekaha, Hanalei, Kīlauea, Princeville, Wailua, Kapa'a, and Anahola. Workshop results included assigning place types to each major community, determining the desired degree of change to 2035, identifying key values, developing a preliminary vision and priorities to inform policy, and identifying town centers and other land uses. The input played a key role in updating the Future Land Use Map and was tested at community open house meetings.

Figure 4-2 shows how the workshops and baseline technical studies informed the development of the preliminary district visions, priorities, and Future Land Use Map changes presented in this section, and how these will inform future community planning efforts.

Figure 4-2. Approach to Updating the Land Use Map



Place Types

Place Types are a design tool used to guide and evaluate future growth in terms of form, scale and function in the built environment. Places are characterized by a core area or center, along with its pedestrian shed, typically a quarter-mile radius around the center where spaces for living, working, shopping, learning, and recreation are within a five-minute walk of one another. The community's determination of place types through the workshops and previous community planning work was used to update the previous General Plan's Town Center boundaries, including the location and extent of the Neighborhood Center and Neighborhood General designations.

Kauaʻi's place types are mapped in Figure 4-3.

- ▶ **Rural Crossroads.** Located at the intersection of two or more roads, a crossroad provides a small amount of locally-serving retail and other services in a rural or less urban context; crossroads transition quickly into rural or less-urban intensities and activities, and/or into the natural environment. Examples of rural crossroads include Kapaia in Līhuʻe District and Ōmaʻo in South Kauaʻi District.
- ▶ **Village.** Located in less urbanized areas, small villages exist at the edge of the rural and urban condition. A village has a main street with surrounding residential areas; this however transitions quickly into agricultural uses and/or into the natural environment. Examples of small villages include Hanalei on the North Shore and Lāwaʻi in South Kauaʻi. They are typically scaled to about the size of one neighborhood.
- ▶ **Small Town.** Located in more urbanized areas, large villages are made up of clusters of 2-3 neighborhoods that can support a mixed-use environment. The mixed-use environment can be located at the intersection of multiple neighborhoods or along a corridor between multiple neighborhoods. Historic examples of small towns include Kōloa Town in South Kauaʻi and Waimea Town in Waimea-Kekaha. They are typically scaled to about the size of 2-3 neighborhoods.
- ▶ **Large Town.** Located in urbanized areas, large towns are made up of clusters of neighborhoods or villages that support a larger, more complex mixed-use environment. Buildings within towns are often attached and may be up to four stories tall. Large towns are important centers,
- ▶ A fifth place type, the **Plantation Camp**, is a historic remnant of a former plantation housing camp that is not associated with a present-day center and is located in a rural area. This type is a cluster of houses with little or no retail or service uses. While other place types promote pedestrian-oriented development, the single-use nature of this place type results in an environment that is primarily auto-oriented, and would not be considered future areas of potential growth. Examples of plantation camps include Pākalā Village, Numila, and Kaumakani on the West Side.

Figure 4-3. Place Types on Kauaʻi



4.4.1 WAIMEA-KEKAHA

Waimea is the civic center of the West Side, home to the high school and other community facilities as well as to a variety of restaurants and retail stores. It is the gateway to Waimea Canyon and Kōkeʻe State Parks, attracting many visitors as well as residents. Much of Waimea and Kekaha lie within flood zones and tsunami inundation areas, which is a consideration in determining patterns of future land use and development.

Preliminary Vision & Priorities

The following provides elements of a preliminary vision and priorities for the major communities in the Waimea-Kekaha planning district. The vision and priorities are based on community and CAC input. While it is intended to provide some guidance for specific areas, it did not have the benefit of a detailed community planning effort. The Preliminary vision and priorities can be used to inform policies and actions for further review during the Community Planning process.

Waimea

Waimea is suited for incremental change, to continue improving on its ability to serve both resident and tourist needs. The community's existing historic center is active and attractive, but residents see opportunities for it to continue to improve as a vibrant walkable destination. The central square is highly valued, and residents would like to explore ways to expand the space, recalling that the park had been larger historically but cut away over time with streets and parking. Lucy Wright Park is another important community destination located just a block from the central square that could benefit from improved facilities and parking.

Two distinct centers have developed along Kaumualiʻi Highway – one node at Waimea Road serving mostly locals, and another around Makeke Road catering more to tourists – and residents expressed interest in exploring opportunities for connecting these nodes for pedestrians. At the west end, the former mill site makai from the West Kauaʻi Tech & Visitors

Waimea-Kekaha

Place Type:

Kekaha: Small Town

Waimea: Small Town

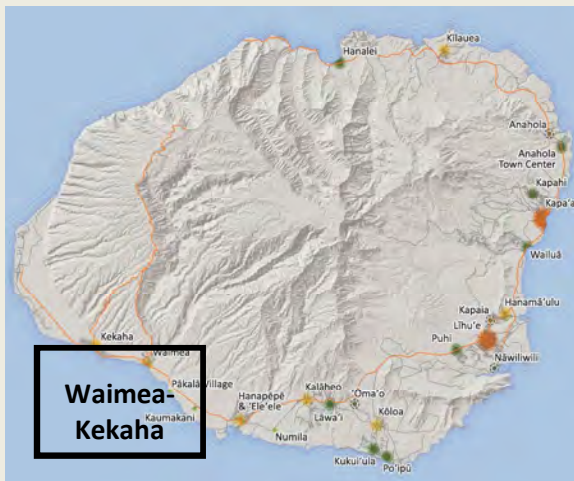
Character/Key Values:

- Community-Minded
- Country Living
- Historic/Timeless
- Peaceful/Relaxed/Quiet/Isolated
- Family/'Ohana/Home

Degree of Change:

Waimea: Incremental

Kekaha: Incremental



Waimea Theater

Center is a key opportunity site to establish pedestrian-oriented, civic and retail space for both visitors and residents.

Residents like the centers' sidewalks lined with plantings, but also desire Waimea's future pedestrian facilities to respond appropriately to neighboring rural character, such as considering gravel shoulders for pedestrian travel along secondary streets. In general, improving multimodal transportation options is a priority to alleviate parking pressures in the town center. One key to this initiative is increasing safe pedestrian highway crossings, especially near the high school, as well as calming highway intersections with difficult left- turns for vehicles. New mixed-use one- and two-story infill in the center is welcome, in keeping with the current mixed scale. In nearby neighborhoods, a variety of small-scale housing is desirable, especially to offer options appropriate for the culture and opportunities to "age in place."

To continue to support visitor activity, the community sees value in continuing to improve on its various tourist facilities, such as public bathrooms and access to the tourist center. Residents considered that a walking route to connect the various historic sites in town could be another way to enhance the town center for visitors, and build upon the community's rich historic heritage.

Kekaha

Kekaha residents envision incremental change to build on their proud agricultural identity. This would mean having new businesses in town, while maintaining the relaxed country-living atmosphere that is unique to the West Side. Clustering new commercial and community activity along Kekaha Road near existing businesses, especially near the Kōke'e Road intersection, can better enable residents' multimodal transportation options.

Agrotourism or value-added agriculture businesses are seen as a major economic opportunity that can preserve the community's agricultural heritage. The vacant mill sites, under common ownership, could offer a transformative change for the community, if re-developed to be part of a new agribusiness and agrotourism center that could include value-adding light- industrial and processing businesses, markets and small local vendors for visitors, and housing. Any new infill should maintain the small-scale character of the community. More modest projects could improve pedestrian mobility throughout town, such as building sidewalks on important connector streets such as Elpaio Road. Kekaha Road is recognized as an important secondary, parallel route to the highway, particularly for pedestrians and bicyclists, and residents also desire to encourage slow speeds on local streets. Better multimodal connectivity to Waimea is a priority, and residents favor a separated path especially to enable easier bicycle access to Waimea's town center.

Kekaha's strong community base of residents are eager to explore grassroots-driven changes for revitalization, rather than waiting solely on private development.



Old sugar mill in Kekaha

Land Use Map Changes for Waimea-Kekaha

The Waimea-Kekaha Land Use Map is shown on Figure 5-2. Updates to Land Use Designations since the 2000 General Plan version are described below.

Neighborhood Centers and Walksheds

In Kekaha, the Neighborhood Center designation was applied to amend the Town Center designation of the 2000 General Plan, reducing the size to reflect a more reasonably walkable scale for the center. This was achieved by removing residential neighborhoods from the boundary to more accurately reflect areas where mixed-use activity would be appropriate. The Neighborhood Center boundary was delineated by Amakihi Road to the west; to the eastern edge of the mill site to the east, to allow potential mixed-use re-purposing of the mill area; and to the back side of Kehaka Road properties on the makai edge. Existing agricultural lands delineate the mauka edge of the neighborhood center. Neighborhood General replaced developable land use designations within a ¼ mile radius from the Neighborhood Center.

In Waimea, the 2000 General Plan's Town Center boundary was reduced to a more walkable, ¼- to ½-mile scale for the Neighborhood Center designation. To the west, large single-use institutional properties such as the middle school and hospital were removed from the center, with the new boundary set at Huakai Road; the technology and visitors' centers were included to prioritize pedestrian connectivity up to this location from the walkable nodes further east along the highway. The new mauka boundary is set at Tsuchiya Road and includes the first block on the mauka side of Kaumuali'i Highway. The eastern boundary is maintained at the river. The makai boundary is pulled back to Kahakai Road and La'au Road, to discourage redevelopment directly along the coast given concerns of future coastal flooding. Neighborhood General replaced developable land use designations within a ¼ mile radius from the Neighborhood Center.

Natural Hazards and Climate Change Resilience in Waimea/Kekaha

The communities of Waimea and Kekaha are vulnerable to natural hazards, including marine and terrestrial flooding, wave inundation, erosion, and storms and tsunamis. All of these hazards are expected to be exacerbated by climate change and sea level rise, threatening residential, commercial and agricultural activities. This calls for a need to employ resiliency strategies in community siting, design, and relocation.

The *Kaua'i Climate Change and Coastal Hazards Assessment* conducted a preliminary Sea Level Rise (SLR) Inundation Assessment and Needs for Waimea – Kekaha (Needs Assessment) using “bathtub” still water flood modeling from the National Oceanic and Atmospheric Administration (NOAA) sea level rise viewer. The inundation maps for the 1-foot and 3-foot scenarios can be found in Appendix E. In advance of or in conjunction with the Community Plan update, it is recommended that a hazard, risk, and vulnerability assessment for coastal hazards with climate change and SLR be conducted with particular focus on low-lying areas adjacent to the Waimea River, low – lying agricultural lands, beach-front properties, and Kikiaola Small Boat Harbor. Such an assessment should incorporate planning information depicting wave inundation and erosion impacts from SLR, which is currently being developed by researchers at University of Hawai'i and others for the State sea level rise adaptation report.

The Needs Assessment also noted that the County may adopt requirements for flood hazard mitigation/adaptation that account for SLR hazards and are above and beyond the FEMA FIRM flood zones and the base floor elevations (BFEs), and limit or prohibit re-zoning of flood-prone agricultural lands. Actions for Public Safety and Hazards Resiliency point to the need to update the County flood program.

Lastly, the Needs Assessment suggested that a sediment management plan be developed at Kikiaola Small Boat Harbor, which is acting to trap sand against the east breakwall and exposing properties to the west to increased erosion and wave inundation. Such an action would require partnership with relevant State, Federal, and private property owners due to the multiple jurisdictions involved.

Other Land Use Changes

Two areas west of Waimea were designated as Residential Community in the 2000 General Plan. These are not connected to the existing community and therefore have been designated as Agricultural to be more consistent with the community's vision of focusing revitalization and development around the Neighborhood Center.

The area adjacent to the Waimea Plantation Cottages was designated Resort in the 2000 General Plan. No movement to entitle the property occurred since the previous General Plan. The Future Land Use Map converts this area to "Conditional Resort." This will allow a more intensive community process to determine if resort potential should be removed or retained to support economic growth on the West Side.



Waimea Plantation Cottages Resort

Guidance for Community Planning

The following goals and actions are preliminary and will help inform future community planning processes.

GOAL: Build on Kekaha's proud agricultural identity while maintaining the relaxed, country living atmosphere.

A. Revitalize the neighborhood center of Kekaha as a hub for economic development and community activity.

- a.** Cluster new commercial and community activity within the Neighborhood Center along Kekaha Road near existing businesses.
- b.** Support community-driven revitalization efforts and programs.

B. Improve pedestrian mobility and multimodal connectivity.

- a.** Better accommodate bicyclists and pedestrians along Kekaha Road by slowing traffic.
- b.** Construct sidewalks along important connector streets such as ʻElepaio Road.
- c.** Improve multimodal connectivity to Waimea with a separated shared use path to enable easier bicycle access to Waimea’s town center.
- d.** Enable a “park once and walk” environment in the town center by integrating parking and transit facilities nearby.

C. Create tourism opportunities that celebrate and build upon Kekaha’s agricultural identity.

- a.** Support programs that encourage agro-tourism and value-added agriculture businesses.
- b.** Explore the redevelopment of the Kekaha Mill site as an agrotourism and agrobusiness center that could include light-industrial and processing facilities, as well as markets, visitor facilities, and housing.



Sunset on the beach in Waimea

GOAL: Continue to improve upon Waimea’s ability to serve both residents’ and visitors’ needs.

A. Continue to improve upon Waimea’s historic center as a vibrant and walkable destination.

- a. Explore ways to expand the central square and make it more pedestrian oriented.
- b. Establish pedestrian-oriented civic and retail space at the former mill site at the west end of town.
- c. Improve tourist amenities and access to the visitor information center.
- d. Provide a variety of small-scale housing near the neighborhood center that is appropriate to the community character and accommodates “aging in place”.
- e. Improve facilities and parking at Lucy Wright Park.
- f. Create a walking route to connect the various historic sites in town and install signage to celebrate Waimea’s historic heritage.

B. Improve multimodal transportation options to help alleviate parking pressures in the neighborhood center.

- a. Improve pedestrian connectivity between the two nodes of activity along Kaumuali’i Highway at Waimea Road and Makeke Road.
- b. Increase safe pedestrian crossings of Kaumuali’i Highway, especially near the high school.
- c. Install traffic calming measures at highway intersections.
- d. Provide parking facilities near transfer points to major tourist destinations such as Kōke’e and Waimea Canyon. Explore shuttle options to those destinations.
- e. Enable a “park once and walk” environment in the town center by integrating parking and transit facilities nearby.

C. Address decreasing water levels in the Waimea River and support equity in water management.

- a. Address community concerns regarding decreasing water levels in the Waimea River through a non-adversarial process involving major stakeholders.

4.4.2 HANAPĒPĒ –‘ELE‘ELE

Hanapēpē-Eleʻele is the gateway to the West Side. As Kaumualiʻi Highway turns south and descends from the uplands of Kalāheo, views of the ocean open up together with views of the Hanapēpē River. The district includes Port Allen, one of the island’s main industrial hubs, with a harbor, power plant, and solar farm. Hanapēpē is also a priority development area for DHHL, who owns land the west of the existing town. Their plans include development of approximately 250 house lots in Phases 1 and II, then developing 234 house lots in a later phase.

Preliminary Vision & Priorities for Hanapēpē-‘Eleʻele

The following provides elements of a preliminary vision and priorities for the major communities in the Hanapēpē-‘Eleʻele planning district in 2035, based on community and CAC input. While it is intended to provide some guidance for specific areas, it did not have the benefit of a detailed community planning effort. The preliminary vision and priorities can be used to inform policies and actions for further vetting during future community planning.

Hanapēpē

Hanapēpē is an appropriate location for incremental change. Residents value maintaining the character and “soul” of the historic town, a thriving center for artists and craftspeople, but also see opportunities for significantly increasing pedestrian and bicycle connectivity across the community, which could result in some transformative projects.

Incremental infill across the town may help to fill in “missing teeth” in the historic downtown, provide affordable housing options in a variety of forms consistent with the existing town character, and revitalize the western portion of Hanapēpē Road. New infill in the town center would also sensitively provide for public and semi-public space that supports activities such as markets, and preserve important community character such as “mom-and-pop” shops. The state owns a significant amount of land along Hanapēpē Road and has no plans for improvement. A revitalization plan for the area could be developed in cooperation with appropriate state agencies. Major connectivity opportunities are envisioned at the highway, along the river, and

Hanapēpē-‘Eleʻele

Place Type: Small Town

Character/Key Values:

- Peaceful/Laidback/Sunny
- Country/Rural/Small Towns
- Welcoming
- Community/Ohana/Closely-Knit
- Local Style/Culture/Grounded

Degree of Change: Incremental



Boutique open for Hanapēpē Art Night

connecting to and along the coast. Safe crossings are a priority, especially for children traveling along Kona Road and Kaumuali'i Highway.

Improved multimodal access to the shore is important, especially between Hanapēpē Heights, Hanapēpē town, and Salt Pond Park. A shoreline trail connecting Salt Pond Park to Port Allen is a popular idea both as an alternate route and valuable recreational amenity for residents.

Finally, improved riverside access could offer another attractive alternate pedestrian route through town and encourage recreational use of the river, maintaining the historic swinging bridge as an important destination for both visitors and residents.

'Ele'ele

'Ele'ele is also suited for incremental change. There is the opportunity for Port Allen and 'Ele'ele Shopping Center to connect to new residential neighborhoods (including the Lima Ola workforce housing project) as they develop over time. The Port and shopping center are recognized as a valuable node. There is an opportunity to consolidate parking and transit facilities for recreational users. If 'Ele'ele



Glass beach, Port Allen

shopping center redevelops and expands, this can provide a key development and open space opportunity for the port's current parking lot. Connectivity to this node is critical. It could be improved through better highway crossings and an alternate pedestrian/bicycle route paralleling the highway as new residential neighborhoods are added along 'Ele'ele's eastern edge.

As Hanapēpē and 'Ele'ele evolve, public open space can be ocean and river views, access to coastal areas, and a possible regional open space network. Hanapēpē, 'Ele'ele, and Port Allen can evolve individually, but the desire is that connectivity would increase among them.

Land Use Map Changes

The Hanapēpē-'Ele'ele Land Use Map is shown on Figure 5-3 Updates to Land Use Designations since the 2000 General Plan version are described below.

Neighborhood Centers and Walksheds

The Hanapēpē Neighborhood Center designation matches the Town Center designation of the 2000 General Plan with one exception: west of Puolo/Hanapēpē Park Road the boundary is extended to incorporate all points of the Hanapēpē Road/Kaumuali'i Highway intersection. A Neighborhood Center designation was also applied to the core parcels facing Waialo Road in Port Allen, differentiating the potential for mixed-use, pedestrian-oriented development along Waialo Road and the industrial and residential properties to the east and west, respectively.

The Residential Community located to the west of the existing Hanapēpē Heights area and owned by DHHL was downsized to reflect current DHHL plans.

Natural Hazards and Climate Change Resilience in Hanapēpē-ʻEleʻele

The Hanapēpē-ʻEleʻele district, including Port Allen is vulnerable to natural hazards, including marine and terrestrial flooding, wave inundation, erosion, and storms and tsunamis. All of these hazards are expected to be exacerbated by climate change and sea level rise, threatening residential, commercial and agricultural activities. This calls for a need to employ resiliency strategies in community siting, design, and relocation.

The *Kauaʻi Climate Change and Coastal Hazards Assessment* conducted a preliminary Sea Level Rise (SLR) Inundation Assessment and Needs for Hanapēpē using “bathtub” still water flood modeling from the National Oceanic and Atmospheric Administration (NOAA) sea level rise viewer (Needs Assessment). The inundation maps for the 1-foot and 3-foot SLR scenarios can be found in the Appendix. In advance of or in conjunction with the Community Plan update, it is recommended that a hazard, risk, and vulnerability assessment for coastal hazards with climate change and SLR be conducted with particular focus on the Hanapēpē River, Port Allen facilities, and Salt Pond. Such an assessment should incorporate planning information depicting wave inundation and erosion impacts from SLR, which is currently being developed by researchers at University of Hawaiʻi and others for the State sea level rise adaptation report.

Other Land Use Changes

75 acres for the planned Lima Ola affordable housing development changed from Agriculture to Residential Community. Additional Residential Community was provided to connect Lima Ola to the Neighborhood General located in Port Allen.

Guidance for Community Planning

The following goals and actions are preliminary and will inform future community planning processes.

GOAL: Maintain the character of Hanapēpē as a historic town and a thriving center for artists and craftspeople.

A. Revitalize the historic center of Hanapēpē to showcase and accommodate artists and small businesses.

- | | |
|--|--|
| <p>a. Encourage incremental infill in vacant spaces within the historic town center.</p> <p>b. Provide for public and semi-public space to support activities such as markets.</p> <p>c. Provide affordable housing options in a variety of forms consistent with the existing town character</p> | <p>d. Revitalize the western portion of Hanapēpē Road.</p> <p>e. Preserve the character of “mom and pop” small shops.</p> <p>f. Explore the development of a revitalization plan for Hanapēpē in collaboration with appropriate State agencies.</p> |
|--|--|

B. Increase pedestrian mobility and multimodal connectivity.

- a.** Improve riverside access to encourage recreational use of the River.
- b.** Maintain the historic swinging bridge as an important destination.
- c.** Provide safe pedestrian crossings, especially to Hanapēpē Heights, the town center, and the Neighborhood Center park and stadium.
- d.** Improve multimodal access to the shore, especially between Hanapēpē Heights, the town center, and Salt Pond Park.
- e.** Explore the creation of a shoreline trail connecting Salt Pond Park to Port Allen.
- f.** Enable a “park once and walk” environment in the town center by integrating parking and transit facilities near the town center.



Historic Hanapēpē Town

4.4.3 SOUTH KAUA'I

The South Kauaʻi District is bounded by Wahiawā Gulch to the west, and on the east, by Hāʻupu mountain ridge, Knudsen Gap, and Mount Kahili. The Planning District includes the towns of Poʻipū, Kukuiʻula, Kōloa, ʻŌmaʻo, Lāwaʻi, and Kalāheo, and encompasses an area of approximately 31,300 acres (49 square miles).

The *South Kauaʻi Community Plan* (SKCP) was adopted in 2015. It sets forth a Vision, Policies, and Land Use Map for the District. Policies included in the SKCP are comprehensive and address a range of topics. In addition, this section explains changes to the Land Use Map for South Kauaʻi District that were made in order to ensure consistency with the conventions used in the Future Land Use Map.

Vision and Community Descriptions

The Vision for South Kaua'i in 2035 is shown below.

South Kaua'i

Place Types:

Kōloa: Small Town

Kalāheo: Small Town

Po'ipū: Village

Kukui'ula: Village

Lāwaʻi: Village

'Ōma'o: *Crossroads*



South Kauaʻi is comprised of distinct rural communities, each embracing its own rich cultural, natural, and historic heritage, but well-connected through safe and efficient transportation networks. Balanced, responsible development enhances existing communities, preserving the local rural lifestyle that embodies South Kauaʻi and is cherished by residents and visitors alike.

South Kaua'i Community Plan (SKCP) (2015)

Kōloa

The site of the State’s first sugar plantation, Kōloa is a compact, thriving village. It rests in the mid-land plains between the mauka villages along Kaumuali’i Highway, and the makai tourism-focused villages and resorts. Its compact commercial main street strikes a balance between serving local residents and tourists. Kōloa can be categorized as a Small Town due to the intensity, size of the commercial core, and the prominence of the area within the region. The neighborhood center extends several blocks along Kōloa Road between Po’ipū Road and Waikomo Road.

The SKCP’s Vision statement for Kōloa in 2035 is as follows:

Kōloa will be a thriving commercial and residential community that maintains its rural feel and historic “old town” charm by preserving, enhancing and protecting its vast cultural treasures.

Kōloa’s history is preserved through the plantation/western architecture in the town core, its historic churches, and other historic buildings. In the town core, renovations and new buildings follow the style of “Old Kōloa Town.” Shaded by building canopies and large trees, pedestrian walkways connect “pockets” of public parking at each end of town. The town provides Kōloa and Po’ipū residents with vital services such as grocery stores, the Post Office, and the Neighborhood Center. Both visitors and residents are also attracted to Kōloa because of its unique shops, restaurants and taverns. Outside of town, the former Kōloa Sugar Mill is in active use as a light industrial center and a food processing and packing facility. Coffee, papaya and other export crops are being grown on former sugar lands.



Sueoka Market in Kōloa Town, South Kaua'i District

Poʻipū

Poʻipū is a collection of makai developments and the historic Epicenters for resorts and tourist activity on the southern shore of Kauaʻi. It has large expanses of sandy beaches, including the popular Poʻipū Beach Park, and is highly developed with a nearly unbroken maze of resorts and tourist lodgings between Poʻipū Road and the shore. Poʻipū can be classified as a Village place type.

The SKCP's Vision statement for Poʻipū in 2035 is as follows:

Poʻipū will be a world-class, sustainable resort destination serving residents and visitors alike, developed responsibly, with clean, healthy beaches and ocean environments, welcoming parks and preserved heritage resources, all well-connected and accessible to everyone.

Poʻipū is a beach resort that accommodates both a residential community and the island's largest Visitor Destination Area. Supported by the growing community of Kukuiʻula to the west and by historic Kōloa Town to the north, Poʻipū is home to about 40 percent of Kauaʻi's resort accommodations and is a major center of employment. Poʻipū is known for its many outdoor recreation opportunities, afforded by its beaches, surf breaks, diving spots, golf courses, and tennis facilities. Bicycle tours use old agricultural roads belonging to Grove Farm and McBryde. Walkers, joggers and bicyclists enjoy the continuous pedestrian/bicycle pathway that runs along the shoreline from the Spouting Horn to Māhāʻulepū.



Resort in Poʻipū, South Kauaʻi District

Kalāheo

Kalāheo is the largest mauka village in the South Kauaʻi District. It is bisected by Kaumualiʻi Highway and made up of neighborhoods weaving around hilly terrain to both the north and south. Kalāheo can be categorized as a Small Village due to its size and intensity of retail and civic uses. Existing commercial uses are concentrated along the highway and include a bakery, pharmacy, service uses, and food establishments serving primarily residents.

The SKCP's Vision statement for Kalāheo in 2035 is as follows:

Kalāheo will remain as a residential community enhanced by a neighborhood-scaled commercial center and supported by small local businesses.

In Kalāheo, numerous homes dot the hillsides mauka of town and around Kukuilono Park. The population of Kalāheo is growing, as homestead and agricultural subdivisions created in the 1970s and '80s are built out with homes. In the town center, business properties are gradually being renovated with building designs supporting the paniolo theme. Public parking lots help to relieve traffic congestion, and sidewalks encourage people to walk around town. Businesses have expanded mauka and makai of Kaumualiʻi Highway along the larger intersections. An active business association promotes the paniolo town theme and sponsors an annual town celebration. On the western edge of town, near Brydeswood, a shopping center with a large grocery store which helps to provide for the needs of a growing population.



Cyclists in Kalāheo

Lāwai and Ōmaʻo

Lāwai is a small mauka neighborhood straddling a winding section of Kaumualiʻi Highway. It has two distinct “crossroad”-size commercial nodes—along Kōloa Road at Lauoho Road, near the old cannery and on the highway at Aulima Road where the post office and market are located. Though physically encompassing a large area, Lāwai’s neighborhood pattern is highly defined and limited by reservoirs and hilly topography. Lāwai can be categorized as a Village due to the limited retail and civic uses found at the core and the surrounding residential areas and hills.

Ōmaʻo is classified as a Crossroads place type. It consists of a small series of mauka neighborhoods that reach southward from Kaumualiʻi Highway. It has no defined commercial node but is rather a largely residential neighborhood, limited in connectivity, size, and future growth by topography and reservoirs. Ōmaʻo is a small residential community with a small central park. The SKCP’s Vision statement for Lāwai and Ōmaʻo in 2035 is as follows:

Lāwai will remain a rural crossroads with a limited commercial area centered on the Post Office and Old Cannery. Ōmaʻo will maintain its value as a small rural residential community.

Lāwai and Ōmaʻo are valued as rural crossroads and small rural residential communities. The small commercial area around the old Lāwai Cannery is developed with shops and services that serve the nearby residential neighborhoods, as well as people traveling along Kaumualiʻi Highway or Kōloa Road. Edges around the existing communities are maintained, preventing sprawl. A scenic roadway corridor along Kōloa Road maintains separation between Kōloa and Lāwai.

Kukuiʻula

Kukuiʻula is a growing area with many important assets: Spouting Horn, Kukuiʻula Small Boat Harbor, the National Tropical Botanical Garden, and a beautiful coastline. This community is the focus of much new development, with a new high-end shopping center and entitlements for large subdivisions set around golf courses. A Vision statement was not developed for Kukuiʻula in the SKCP.



Shopping center at Kukuiʻula

Land Use Map Changes for South Kauaʻi

The South Kauaʻi Land Use Map is shown on Figure 5-4. Updates to Land Use Designations since the 2000 General Plan version are described below.

Neighborhood Centers and Form-Based Code Transects

In order to accommodate the growth projected for South Kauaʻi, the SKCP delineated six Special Planning Areas (SPAs). These represent specific areas where compact, walkable communities are desired in both new and existing neighborhood centers and nodes. South Kauaʻi uses a Form-Based Code Framework and has regulating plans for three of these SPAs (Kōloa Town, Kalāheo Town, and the Poʻipū Roundabout). It uses Neighborhood Center and General Designations, as well as a Neighborhood Edge designation for areas within a 0.5-mile radius (10-minute walk) from the Neighborhood Centers. The SPAs are required to follow the design and land use standards detailed in the South Kauaʻi Form-Based Code regardless of the underlying zoning.

The other three areas (Lāwai Cannery, Numila, and Poʻipū Gateway) will undergo a special master planning process to develop regulating plans and transects when development is proposed. On the Future Land Use Map they are labeled either as a Large Village or a Small Village. The Poʻipū Gateway Mixed-Use Village is classified as a Large Village and Lāwaʻi Cannery and Numila are classified as Small Villages. These places types are general placeholders for the future SPAs until their Regulating Plans with transect zones are determined. They also will be required to use the transect zones defined in the South Kauaʻi FBC.

SPAs are a County zoning designation that is a higher level of detail than appropriate for the General Plan Land Use Map. Areas for infill and future development in South Kauaʻi are shown on the General Plan Land Use Map as Neighborhood Centers and General, or as future place types based on the characteristics of their envisioned built form and relationship to other communities.

Natural Hazards and Climate Change Resilience in South Kauaʻi

The South Kauaʻi district is vulnerable to natural hazards, including marine and terrestrial flooding, wave inundation, erosion, and storms and tsunamis. All of these hazards are expected to be exacerbated by climate change and sea level rise, threatening residential, commercial and agricultural activities. This calls for a need to employ resiliency strategies in community siting, design, and relocation.

The *Kauaʻi Climate Change and Coastal Hazards Assessment* conducted a preliminary Sea Level Rise (SLR) Inundation Assessment and Needs Poʻipū (Needs Assessment) using “bathtub” still water flood modeling from the National Oceanic and Atmospheric Administration (NOAA) sea level rise viewer. The inundation maps for the 1-foot and 3-foot SLR scenarios can be found in the Appendix. Poʻipū provides one example where the NOAA SLR Viewer data greatly underestimates SLR related hazards because the model does not account for increased coastal erosion and wave induced flooding with increasing sea level rise. This data gap is currently being addressed by University of Hawaiʻi and other researchers and the planning information is expected within the next few years. Therefore, it is recommended that a community-scale hazard, risk, and vulnerability assessment be conducted when that data becomes available with particular focus on the beach resources and resort facilities.

Other Land Use Changes

The South Kauaʻi Community Plan supported expansion of the Visitor Destination Area (VDA) along Lāwaʻi Road due to the concentration of non-conforming TVRs makai of the highway. This recommendation was not extended to the existing neighborhood of Hoʻone Road. Due to the

General Plan’s policy to not expand the VDA, the Lāwaʻi Road VDA recommendation has been removed and the neighborhood will remain in residential community.

The SKCP identified the boundaries of a potential growth area to be vetted through the Hanapēpē-ʻEleʻele Community Plan process. It includes the area surrounding Numila which is desired by the landowner to be a master planned community supporting the growth of ʻEleʻele and Port Allen. Because of the boundary shift between planning districts, it falls within the South Kauaʻi planning district. On the South Kauaʻi Community Plan Land Use Map, it is designated Agriculture and shown as a placeholder to be defined as part of the future Hanapēpē-ʻEleʻele Community Plan update. No projected residential growth for South Kauaʻi was allocated to the area.

The South Kauaʻi Community Plan (2015)

Community planning guidance for the district is contained in the *South Kauaʻi Community Plan* (SKCP) (2015). The Walkable Mixed-Use Communities section identifies policies to enhance existing communities with pedestrian-friendly development. By locating commercial and retail establishments convenient to residential areas, alternatives to driving, such as transit, walking, and biking, once again become viable. Potential redevelopment is concentrated in the Special Planning Areas described above. The main goal of these policies is to focus growth to compact, defined settlement areas to enhance sense of community, improve conditions for walkable communities, maintain rural character of the place, and preserve open space.



Surf shop in Poʻipū

4.4.4 LĪHU‘E

The Līhu‘e Planning District is the “heart” of Kaua‘i. Extending north to the Wailua River and south to Hā‘upu Ridge, the district serves as the main business, government and transportation center of the island. The Līhu‘e region includes the main communities of Līhu‘e, Hanamā‘ulu, and Puhi. Sub-areas and neighborhoods include Nāwiliwili, Kapaia, Kīpū, Kālepa, Nūhou, Niumalu, Kalapakī, and Pū‘ali.

The most recent *Līhu‘e Community Plan (2015)* (LCP) was adopted in 2015. It sets forth a Vision, Policies, and Land Use Map for the District. This General Plan incorporates the LCP Vision, land use map, and policies. Policies included in the Līhu‘e Community Plan are comprehensive and address a range of topics. Only those that are specific to the communities in the Līhu‘e District are reproduced here. In addition, this section explains changes to the Land Use Map for Līhu‘e District that were made in order to ensure consistency with the conventions used in the islandwide Land Use Maps.

Līhu‘e

Place Types:

Līhu‘e: Large Town

Hanamā‘ulu: Small Town

Puhi: Village

Nāwiliwili: Crossroads

Kapaia: Crossroads



Vision and Community Descriptions

The Vision for the Līhu‘e District is as follows:

The Līhu‘e District shall be a place with walkable, compact communities, each distinct yet connected, and each with its own unique identity and sense of place. Green, open spaces between communities serve as visual and physical buffers and evoke Kaua‘i’s rural essence. Līhu‘e Town serves as a destination and gathering place for the island, with a vibrant Town Core and a desirable mix of uses and attractions for residents and visitors.

Līhu‘e Community Plan (2015)

Community descriptions for the communities of Līhu‘e, Hanamā‘ulu, and Puhi are provided below.

Līhuʻe Town

Līhuʻe Town is the County seat of Kauaʻi and the island’s major commercial and civic center. It is the only community on Kauaʻi that consists of four or more neighborhoods and can be classified as a Large Town place type.

Līhuʻe Town is bounded by the Hanamāʻulu and Nāwiliwili Gulches on the north and south, and by the shoreline and the Isenberg neighborhood along Kūhiō Highway on the east and west. Key commercial centers in Līhuʻe town include the Civic Center District, Kūhiō Highway commercial strip, and portions of Rice Street. The town developed along Haleko Road (north of Rice Street) and Rice Street, both of which are designated as historic roads.

The Kūhiō Highway commercial strip has developed alongside the adjacent Isenberg and ‘Akahi-‘Elua neighborhoods and serve as a hub for those populations. The east side of Kūhiō Highway consists of commercial storefronts with neoclassical and art deco architectural influences. The ‘Akahi-‘Elua neighborhood between Ahukini Street and Hardy Street has relatively large lots and the residential architecture styles of the homes remaining are of cottage, craftsman, and prairie styles from the 1930s and early 1940s.

Rice Street between Kress and Kalena Street was developed as a retail center secondary to the Kūhiō Highway Commercial District. With continuous storefronts along both sides of the streets and several historic buildings, Rice Street is often characterized as Līhuʻe’s “Main Street”.



Kauaʻi Museum with the County Building lawn and associated monument in the foreground, Līhuʻe District



Kūhiō Highway Commercial Center serves as a hub for Līhuʻe Town and adjacent Isenberg and ‘Akahi-‘Elua Street neighborhoods

Hanamā‘ulu

Hanamā‘ulu is a former plantation village and housing subdivision that lies between the Hanamā‘ulu Gulch and Kālepa Ridge. Kūhiō Highway bisects the community and links it to Līhu‘e Town, Puhi and Kapa‘a. In 1877, Hanamā‘ulu Mill became the second mill for Līhu‘e Plantation. In the 1950’s and 1960’s, Līhu‘e Plantation opened several subdivisions and offered them for sale to their workers. These subdivisions surround the village center and flank both sides of Kūhiō Highway.

The small village center was a cluster of plantation structures including the Hanamā‘ulu Trading Company and post office, both of which were destroyed by fire in 2012 along with several other businesses. Portions of these structures have since been rebuilt. The village center has several small businesses including a gas station, warehouses, a convenience store, park and elementary school, all within walking distance from its neighborhoods. A recent housing project called Kālepa Village is a workforce housing project that is done in plantation vernacular and is the only multi-family development in the vicinity.

Puhi

Puhi is the newest developed community in the Līhu‘e District, and is designated as a Village place type. It is located south and west of Nāwiliwili Gulch and has access to Līhu‘e Town along Kaumuali‘i Highway. Puhi is home to Kaua‘i’s major regional shopping center, Kukui Grove Center, as well as a large industrial park and big box retailers including Costco. This makes Puhi a commercial destination and employment center that experiences a large amount of daily commuter traffic from across the island. The area mauka of Kaumuali‘i Highway is a decidedly more open landscape, with expanses of green space and agricultural uses. This mauka area is home to the campuses of Island School and Kaua‘i Community College, as well as the historic Kilohana Plantation and railroad, a prominent attraction.

The land use character is suburban with predominantly single family residential developments, shopping mall and big box retail, cul-de-sac road systems, and large lot single family homes with golf course frontages. Overall, Puhi provides a diverse mix of uses, residential dwellings, light industrial, retail and education. With these established uses, Puhi is poised to remain a regional destination into the future, and also to experience residential growth to support employment and educational opportunities there.



Kaua'i Community College in Puhi

Land Use Map Changes for Līhuʻe

The Līhuʻe Land Use Map is shown on Figure 5-5. Updates to Land Use Designations since the 2000 General Plan version are described below.

Neighborhood Centers & Urban Growth Boundary

As the main urbanized area on Kauaʻi that is planned to accommodate approximately half of its future growth, the Land Use Map for the Līhuʻe District looks different than the rest of the island. The Līhuʻe District was the first to adopt an Urban Growth Boundary to delineate the limits of desired urban growth. Within the Urban Growth Boundary, there are multiple existing and future designated Neighborhood Centers that correspond to Mixed Use Special Planning Areas (SPAs). These SPAs indicate priority “areas of change” for infill and new development to accommodate projected population growth. Most of these Neighborhood Centers are within ½ mile of one another, creating a continuous tapestry of urbanized lands of varying density. The Neighborhood General designation is not applied in Līhuʻe, as most of the walksheds overlap. Instead, the General Plan Urban Center designation is retained in those developable areas outside of designated Neighborhood Centers.

Natural Hazards and Climate Change Resilience in Līhuʻe District

The Līhuʻe district is vulnerable to natural hazards, including marine and terrestrial flooding, wave inundation, erosion, and storms and tsunamis. All of these hazards are expected to be exacerbated by climate change and sea level rise, threatening residential, commercial and agricultural activities. The coastal areas of Nāwiliwili, Niumalu, and Huleia stream are particularly vulnerable to coastal hazards. This calls for a need to employ resiliency strategies in community siting, design, and relocation.

The *Kauaʻi Climate Change and Coastal Hazards Assessment* conducted a preliminary Sea Level Rise (SLR) Inundation Assessment and Needs for Nāwiliwili (Needs Assessment) utilizing “bathtub” still water flood modeling from the from the National Oceanic and Atmospheric Administration (NOAA) SLR viewer. The inundation maps for the 1-foot and 3-foot SLR scenarios can be found in Appendix E. Nāwiliwili is an important industrial and port area with infrastructure that may require protection to maintain essential services. It is recommended that a hazard, risk, and vulnerability assessment for coastal hazards with climate change and SLR be conducted with particular focus around Nāwiliwili Stream, Huleia Stream, Kalapakī Beach, Nāwiliwili Small Boat Harbor, and the Niumalu area. Such an assessment should incorporate planning information depicting wave inundation and erosion impacts from SLR, which is currently being developed by researchers at University of Hawaiʻi and others for the State SLR adaptation report.

The Needs Assessment also notes that the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) indicate most of the shoreline around Kalapakī and Nāwiliwili is outside the 100-year flood plain (X zone) and this may underestimate the risk since these maps do not incorporate sea level rise. The County may adopt requirements for flood hazard mitigation and adaptation that account for SLR hazards that are above and beyond the FIRM flood zones and base flood elevations (BFEs).

Other Land Use Changes

Changes to Residential land use designations are made in two areas. Residential designations are removed from several areas in Pūʻali, south of Puhi, as they were far from Neighborhood Centers and did not support the County policy of compact development. A portion of the EWM property near the northern end of the District was designated as Residential.

Goals, Policy Objectives, and Actions for Līhuʻe

Community planning guidance for the district is contained in the *Līhuʻe Community Plan (2015)* and Līhuʻe Town Core Urban Design Plan (2010).

Preliminary Vision & Priorities

The preliminary vision for the East Kauaʻi planning district in 2035 was derived from the working vision statement in the previous East Kauaʻi Community Planning process, as well as from community and CAC input collected during the General Plan. The vision will be revisited as the Community Plan process is resumed. The preliminary vision and priorities can be used to inform policies and actions for further vetting during the Community Planning process.

By 2035, We Envision an East Kauaʻi Where:

Residents enjoy a high quality of life in a rural setting

Natural resources are protected and open spaces and public access are preserved

Agricultural lands are farmed, productive, and protected

Affordable housing opportunities exist for local residents

Archaeological, historic, and cultural places in our community are honored, preserved, and maintained

New recreational facilities provide safe and healthy opportunities for youth and adults

Historic Kapaʻa Town maintains its western plantation character, is livable and walkable, with mixed uses, pedestrian-friendly streets, bike paths, new parking, and public transit

A range of visitor accommodation types are in place, and new attractions have opened

Deferred infrastructure needs have been addressed

Public transit service has increased and is integrated into new developments

Wailua

Wailua is designated as a Village Place type. Community input indicated that the area along the Kūhiō Highway bounded roughly by Haleilio Road, Lanikai Street, and Papaloa Road provides a good opportunity for a Neighborhood Center in proximity to residential neighborhoods in Wailua and resort areas along the coast. Portions of Wailua within ½ mile of this center can accommodate additional residential uses on underutilized and vacant parcels.

Kapahi

Community support is indicated for a future Village place type at Kapahi. A Neighborhood Center was identified along Kawaihau Road, roughly between Kuahale Street and Puukaa Street. This area in the future can accommodate a mix of medium-intensity residential uses, along with additional commercial and service uses, in a configuration that is supportive of transit.

Kapa'a Town

Kapa'a Town's future growth pattern depends largely upon the intensity of implementation related to a key community policy related to traffic north of the Wailua bridge. The 2000 General Plan does earmark large residential growth at the Hokua Place property near Kapa'a Middle School. The area is designated as Urban Center. However, community opinion remains divided, with strong concerns about the perceived impacts of the proposed development on traffic. Supporters cite the great need for housing and the consistency of the Hokua Place proposal with smart growth principles. Others feel that the proposed traffic mitigation measures won't be enough to counteract negative impacts, that sewer infrastructure is constrained, and that because of the East Kaua'i congestion, affordable housing development should be concentrated in Lihu'e. Another concern is that much of Kapa'a Town is within tsunami evacuation and flood zones. Sea level rise projections show that much of the area could be inundated if SLR reaches 3 feet, as is currently anticipated by the year 2100. These considerations raise further questions about how much growth should be encouraged and accommodated within the Kapa'a-Wailua corridor.

In the public consultation process, two map alternatives were developed for Kapa'a Town's future that reflected this dual input. In the first alternative, Kapa'a transforms from a Small Town to a Large Town place type. The existing Town Center boundary is extended mauka along Oloheua road with the idea that the Main Street environment at Oloheua and Kūhiō could extend mauka to the roundabout and the northeast corner of the Hokua property. Hokua Place would organize medium-intensity residential neighborhoods on the Makai side of the property and lower-intensity neighborhoods to the west. In this alternative, residential growth would be absorbed on the Hokua site as well as on opportunity sites in and around central Kapa'a. In particular, sites around the Baptiste sports complex may need infrastructure investment (such as flood control) to make medium-intensity development feasible.

In the second alternative, Kapa'a would maintain as a Small Town place type, concentrating growth in and around 3 nodes of existing development along the Kūhiō Highway rather than at Hokua Place. In this alternative residential growth would be absorbed on opportunity sites in and around central Kapa'a. This alternative would require more intense development patterns in order to accommodate a similar amount of growth as the first alternative.

Given the community sentiment after these map alternatives were presented publically, the land use maps have been adjusted to reflect the second alternative, in which the Hokua Place site is assigned an Agriculture land use designation rather than Urban Center. The community comments received on the General Plan Discussion Draft support this direction.

Anahola

Much of the land in Anahola is owned and managed by the State Department of Hawaiian Homelands (DHHL). According to the *Kaua'i Island Plan*, Anahola is DHHL's largest residential homestead area on Kaua'i and is their priority development area. DHHL's *Anahola Regional Plan (2012)* calls for future development of residential homesteads and agricultural uses in the area, as well as the establishment of a new Town Center along Kūhiō Highway. The *Anahola Town Center Plan (2012)* describes the proposed Town Center. While a portion of site designation for the Town Center has since been replaced by a solar farm, the East Kaua'i Community Workshop held as part of this General Plan confirmed that the community still supports the Town Center, and this General Plan identifies it as a Village place type. In addition, the community was largely supportive of the preservation of an existing small center at the Anahola Post Office, which has been designated as a Crossroads place type.

Land Use Map Changes for East Kauaʻi

The East Kauaʻi Land Use Map is shown on Figure 5-6. Updates to Land Use Designations since the 2000 General Plan version are described below.

Urban Areas

The area around Kapaʻa Middle School proposed for the Hokua Place Development has been changed from General Plan Urban Center Designation to Agriculture.

Neighborhood Centers and Walksheds

This General Plan Land Use Map includes new Neighborhood Centers at Wailua and Kapahi, based on community input. The Neighborhood General designation replaces residential designations within ¼ mile of Neighborhood Centers. In Kapaʻa Town, Neighborhood Centers are shown in three locations.

A new Neighborhood Center is designated at the location of the planned Anahola Town Center, with Neighborhood General designation replacing residential designations within ¼ mile of the Neighborhood Center. A smaller Center and Neighborhood General area is established at the post office. Due to hazard vulnerability in this area, the extent of the Center and General areas at this location are limited.

Natural Hazards and Climate Change Resilience in East Kauaʻi

The East Kauaʻi district is vulnerable to natural hazards, including marine and terrestrial flooding, wave inundation, erosion, and storms and tsunamis. All of these hazards are expected to be exacerbated by climate change and sea level rise, threatening residential, commercial and agricultural activities. This calls for a need to employ resiliency strategies in community siting, design, and relocation. The coastal area between Wailua and Kapaʻa is particularly vulnerable due to development density. Smaller rural communities of Anahola and Moloaʻa are also vulnerable to flooding due to their low-lying nature adjacent to stream mouths.

The *Kauaʻi Climate Change and Coastal Hazards Assessment* conducted a preliminary Sea Level Rise (SLR) Inundation Assessment and Needs for these areas (Needs Assessment) utilizing “bathtub” still water flood modeling from the National Oceanic and Atmospheric Administration (NOAA) SLR viewer. The inundation maps for the 1-foot and 3-foot SLR scenarios can be found in Appendix E. In advance of or in conjunction with the Community Plan Update, it is recommended that a hazard, risk, and vulnerability assessment for coastal hazards with climate change and SLR be conducted with particular focus on critical infrastructure, residential, commercial, and visitor areas along the Kapaʻa-Wailua corridor including but not limited to areas around Moikeha and Waiakeha Canals, mauka residential areas where freshwater wetlands are expected to emerge due to rising water table, and areas around the Wailua River.

The NOAA SLR flooding data shows little flooding or coastal change along the shoreline and this underestimates SLR related hazards because the model does not account for increased coastal erosion and wave induced flooding with increasing sea level rise. The hazard, risk, and vulnerability assessment should incorporate planning information depicting the above information, which is currently being developed at researchers at University of Hawaiʻi and others for the State sea level rise adaptation report.

Historical shoreline change studies indicate a long-term trend of shoreline erosion for most of the Wailua – Kapaʻa shoreline, which is expected to increase with accelerated SLR. Kapaʻa Beach Park is particularly vulnerable and erosion of the beach threatens the bike path, resorts, and homes, especially in proximity to the Pono Kai seawall. Flanking erosion is particularly pronounced at the northern end of the wall, which is a common issue with sea walls.

The Needs Assessment also recommends a coastal and beach management plan for Wailua/Kapa'a including regional sand management and beach conservation and restoration as alternatives to increased coastal armoring in residential areas.

For Anahola and Moloa'a, given the high degree of exposure to flooding hazards around the stream and backshore areas as well as chronic beach erosion issues, community-scale risk and vulnerability assessments are also advised by the needs assessment. 'Aliomanu Road at the north end of Anahola Bay has recently been threatened by coastal erosion. A vulnerability assessment for the road and long term plans for its protection or relocation need to be considered.

The Needs Assessment also notes that the flood areas as shown on the FEMA Flood Insurance Rate Maps are likely to expand as the frequency and severity of flooding events increase with SLR. The County may adopt requirements for flood hazard mitigation/adaptation that account for SLR hazards and are above and beyond the FIRM flood zones and base flood elevations (BFEs). Chapter IX Actions point to the need to update the County flood program.

Other Land Use Map Changes

No additional changes to the land use map for East Kaua'i are made.

Guidance for Community Planning

The following goals and actions are preliminary and will inform future community planning processes.

GOAL: Celebrate Wailua's rich and cultural heritage.

A. Protect scenic corridors and sites of cultural significance.

- | | |
|---|--|
| <p>a. Update inventory of cultural sites.</p> <p>b. Coordinate Work with Open Space Commission and Kaua'i Historic Preservation Commission.</p> | <p>c. Discourage development away from scenic corridors and areas of cultural significance.</p> |
|---|--|

B. Share and educate visitors and the community about Wailua's history.

- | | |
|---|---|
| <p>a. Develop signage with historical information.</p> | <p>b. Establish a Wailua Cultural Center and/ or Visitor information center.</p> |
|---|---|

GOAL: Increase connectivity within the Wailua corridor to better connect residential, resort, commercial, and recreational uses.

A. Improve pedestrian, bicyclists, and transit connectivity within the Wailua corridor.

- a.** Clear and maintain vegetation along Kuamoʻo and Olohena road for pedestrian and bicyclists safety and comfort.
- b.** Provide alternative routes for pedestrian and bicyclists from Wailua Houselots to Kuamoʻo Road.
- c.** Add bicycle lanes on Kuamoʻo Rd. and Olohena Road.
- d.** Increase frequency of Wailua shuttle.
- e.** Establish more park and ride sites in Wailua Homesteads and Wailua Houselots.

GOAL: Enhance Historic Kapaʻa Town.

A. Encourage infill development and mixed-use within the town core.

- a.** Educate community members and landowners about special planning areas.
- b.** Provide incentives to property owners of vacant parcels in Historic Kapaʻa Town to develop buildings for mixed-use.
- c.** Update East Kauaʻi Community Plan and incorporate Form-based Code for Historic Kapaʻa Town.
- d.** Provide a range of affordable housing types.
- e.** Develop a parking audit for Kapaʻa Town.

B. Preserve the historic character of Kapaʻa Town.

- a.** Update East Kauaʻi Community Plan and incorporate Form-Based Code for Historic Kapaʻa Town.
- b.** Improve design guidelines for buildings and streetscapes.
- c.** Educate property owners on incentives for historic preservation.

GOAL: Increase connectivity from the town to recreation and residential areas along Kukui/Olohena Road.

A. Improve pedestrian, bicycle, and transit connectivity.

- a.** Add sidewalks along Olohena Road from the Kapa'a Middle School to the town beach parks to the town and to residential areas.
- b.** Ensure safe pedestrian and bicycle paths that connects the .

GOAL: Address Traffic Congestion.

A. Improve capacity within the Wailua-Kapa'a corridor.

- a.** Implement the Kapa'a Transportation Solutions projects.
- b.** Continue to work with State DOT.

GOAL: Support DHHL's Island General Plan and Anahola Plan

A. Improve collaboration between the County, DHHL and other stakeholders.

- a.** Work with the DHHL to ensure the Anahola Plan is compatible with the area's Community Plan.

4.4.6 NORTH SHORE

The North Shore Planning District extends from Moloaʻa Bay on the east to Puanaiea Point on the west, which is eight miles west along the Nā Pali Coast from Hāʻena. The North Shore includes the communities of Hāʻena, Wainiha, Hanalei, ʻAnini, Kalihiwai, Kīlauea, and Princeville. The main population centers on the North Shore are the communities of Hanalei, Princeville, and Kīlauea.

Residents of these communities value the rural, isolated character of the north shore and its inherent natural beauty, and the strong sense of community central to each place. While each community differs somewhat in its approach to growth and change, North Shore communities generally express greater concerns regarding the impacts of new development as well as the negative effects of tourism. The North Shore attractions from Kēʻē Beach to the Hanalei Pier are must-see sights for nearly all visitors to Kauaʻi. There is a sentiment among local residents that the North Shore is more burdened by tourist impacts than other areas of the island, as popular sites are overrun and residents must compete with tourists for parking.

Preliminary Vision & Priorities

The following provides elements of a preliminary vision and priorities for the major communities in the North Shore planning district in 2035, based on community and CAC input. While it is intended to provide some guidance for specific areas, it did not have the benefit of a detailed community planning effort. The Preliminary vision and priorities can be used to inform policies and actions for further vetting during the Community Planning process.

Hanalei

A minimal degree of change is anticipated for Hanalei, which is designated as a Village place type. The community's focus is on maintaining its historic character and restoring it where it has been damaged. The pleasant, informal, pedestrian-scaled existing center can be maintained through modest flexibility in site frontages of new infill, allowing buildings to set back at varying intervals to provide civic space or pedestrian amenities like outdoor seating. Despite allowing frontage flexibility, new off-street parking lots are located behind buildings, and existing lots are screened by landscaping, to support a better pedestrian environment at the street.

Hanalei, Kīlauea, and Princeville

Place Types:

Hanalei: Village

Kīlauea: Small Town

Princeville: Undetermined (Village, or no place type to be applied)

Character/Key Values:

- Rural/Isolated
- Resilient/Protective/Healthy
- Natural Beauty/Verdant
- Challenged/Threatened

Hanalei Degree of Change: Minimal Kīlauea

Degree of Change: Incremental Princeville

Degree of Change: Incremental



“Complete streets” that balance pedestrian, bicycle, transit, and private vehicle activity are a goal for residents, with context-sensitive elements that act to calm traffic on the highway, and provide safe crossings for pedestrians, but with an emphasis on street designs that are consistent with Hanalei’s rural character. On the east side of town, a path or informal sidewalk along Kūhiō Highway is desired to connect existing businesses which otherwise lack a safe, established route. There is also support for a possible parallel, shared use path makai of Kūhiō Highway, which could connect community civic uses between the single row of existing buildings and existing agricultural lands.

Traffic congestion on the highway into town is a significant issue, and closely related is the primary concern about the current large number of tourists passing through Hanalei and the town’s capacity to manage this daily influx of visitors. Exploring transportation alternatives for traveling to and around Hanalei is thus a priority in order to mitigate peak vehicular traffic levels and tourist impacts on the town, but with sensitivity to the goal of improving the means of access to the town, rather than increasing the volume of tourist access. One such consideration is to implement a bike-share program in the town center that would provide opportunities to reduce private vehicular trips. Such a program could be coordinated with regional transit and shuttle options connecting to other park-and-ride locations on the North Shore and even elsewhere on Kaua’i, allowing visitors to easily travel to regional destinations including Kīlauea Lighthouse, Ke’e Beach, and Ha’ena State Park without using a private vehicle. Trail connections (outlined in the *Kaua’i Path North Shore Path Alternatives Report (2012)*) between Hanalei and Princeville were also discussed as an alternative, recreational option for pedestrians and bicyclists.

Tourist capacity is a continued concern for residents, who wish to see TVRs convert back to housing for locals and the stabilization of Hanalei’s population, which has been in decline. In preparing the community for possible hurricanes and tsunamis, clear and abundant signage will be important for the education of this constant visitor population. It is imperative to reduce the number of TVRs in the high risk tsunami zones for the safety of both visitors and residents.

Hanalei’s sensitive natural environment and strained single highway access-point into town make the control of the community’s future growth important. The previous Town Center boundary, extending farther west than the existing commercial center, has been reduced in size to incorporate only the current mixed-use area at its eastern end. Although the center is not expected to expand, residents would like to see more neighborhood-serving businesses amongst the shops in the center.



Hanalei town mauka view

Princeville

An incremental degree of change could help Princeville to provide better connectivity and preserve public access to open space, while adopting more compact and connected land use patterns for future development. Residents expressed that public access and connectivity are primary issues for lands both mauka and makai of Kūhiō Highway. Public access to the shoreline

has come under threat as vacation residences continue to develop down the coast. The community faces a critical need to preserve and restore public access to beaches, shorelines, and open space as new development progresses. In addition, public pedestrian and bicycle access is important to preserve and improve through Princeville’s neighborhoods and properties. As Princeville expands, good street connections are also critical to establish between Phases I and II, in order to improve pedestrian and bicycle circulation and not further exacerbate the busy Kūhiō Highway.

Residents strongly desire more sensitive considerations of land use and development rights for Princeville’s surrounding rural and agricultural lands. The community has seen the impacts of a loosely-defined agricultural land use, with large-lot residential subdivisions consuming valuable undeveloped land and eroding the rural character of the North Shore. However, these “gentleman estates” were still preferred to high-density condos; residents desire that new resorts would be developed at an appropriate, small-footprint scale for the rural surroundings. More thoughtful consideration of appropriate locations for developable land uses is also a priority; for example, community members expressed widespread sentiment to limit development mauka of the highway, concentrating new residential neighborhoods and institutions (such as a school) close to the cores of existing communities.

Future master planning efforts for Princeville Shopping Center could improve the area’s multimodal access and connectivity. This could include better pedestrian crossings between the Center and adjacent areas, including the affordable housing project to the west. Improved pedestrian facilities and context-sensitive elements can calm vehicular traffic along the scenic viewplane portion of Kūhiō highway, including safer shoulders and pedestrian crossings at the Hanalei Valley Lookout. A regional transit facility can also be incorporated into the expansion of the Princeville Shopping Center, providing a shuttle stop for visitors traveling between North Shore destinations, with an accompanying park-and-ride lot. Mixed-use development can be focused at this node.

Kīlauea

Other than Līhuʻe, Kīlauea is the only other town with a micro-regional plan. Community outreach reveals much of the information included in the 2006 document remains valid and should continue through this planning horizon. Local interest in modest growth and a desire to better accommodate day visitors make Kīlauea an ideal candidate for incremental growth. It is designated as a future Small Town place type. Residents express that the current center is too small for local commercial needs, and would like to see more neighborhood-serving services to reduce reliance on Princeville Center. More housing and an expansion of the town center beyond what is called for in the existing Town Center plan, which calls for about 200-240 new homes, could be coupled with denser development within the surrounding Neighborhood General area to accommodate closer to 300-350 homes in the area.

Kīlauea Road already faces significant traffic from tourists traveling to the National Historic site, the Kīlauea Lighthouse. This problem can be addressed with an expansion of the center westward from Keneke Street, with a new road connection from the center to Kūhiō Highway serving as a backbone for new neighborhood development, consistent with the town plan. Traffic headed both to the center and the lighthouse could use this as a new primary route, relieving traffic on the residential portions of Kīlauea Road. The center’s westward expansion could integrate a pool of parking for tourists, coordinated with a new shuttle to the lighthouse and other North Shore destinations, to further manage access and mitigate tourist traffic impacts. Live/work buildings were envisioned as a naturally-fitting building type option for the community, allowing residents to generate capital directly out of the home. Improved pedestrian and bicycle routes further support this evolution of the walkable center. Residents desire more consistent sidewalks, path

connections to the agricultural park, and coordinated multimodal trail options between North Shore communities and even between different mokus. Improved access and connections to the local beaches from the center is a further priority, as is the addition of industrial lands in Kīlauea to allow for more local production space.

Kīlauea's relationship with Kūhiō Highway is a focus for future change to improve safe access and community visibility. A series of roundabouts is one possible strategy to create attractive gateways, slow vehicle speeds passing Kīlauea, and create safer intersections. Future roundabouts could be implemented at the new westward bypass road to Keneke Street, connecting to the highway across from Kaua'i Miniature Golf; at Kolo Road, a current primary entrance to the community; and, at Hookui road, near a small assortment of commercial businesses. Any considerations of growth are coupled with existing concerns of water and municipal sewer access. The community has expressed interest in considering progressive solutions to sewage treatment and encouraging more widespread rainwater catchment practices.

As with the rest of the North Shore, Kīlauea residents balance their desires for growth of a neighborhood-serving center with great concern for maintaining the precious local natural environment, especially with significant tourist demand on the region. The community shares a desire to create a coordinated shuttle service for the North Shore to relieve highway traffic demands and could implement a park-and-ride lot either within the new center expansion, or at the Kaua'i Miniature Golf property.



Kīlauea Lighthouse

Land Use Map Changes

Neighborhood Centers and Walksheds

In Hanalei, the Neighborhood Center size was reduced from the 2000 General Plan Town Center designation along its western extent. It now ends at the west side of the post office to reflect the current extent of mixed-use activity in Hanalei. The new Neighborhood Center better reflects the community's commitment to limiting future growth and the desire to preserve the historic and cultural landscape along the highway west of the Neighborhood Center.

Kīlauea's 2000 General Plan Town Center boundary is largely maintained in location and scale as the new Neighborhood Center, with small adjustments to the northern and western edges. The existing residential neighborhood makai of the center was removed to establish the northern boundary. The western edge was adjusted to represent a more realistic general location of the center extension based on the likely alignment of a new western bypass road. The depth of the western portion of the Center approximates the land area necessary for reasonable mixed-use development lots with parking.

A Neighborhood Center designation was added in Princeville at the existing Princeville Shopping Center and adjacent parcels between Hanalei Plantation Road and Ka Haku Road. These include the fire station, affordable housing community, and vacant land to the west of the shopping center and the bank building, library, and vacant land on the mauka side of Emmalani Drive to the west. The Neighborhood Center designation acknowledges that while Princeville is a private, master-planned development, the shopping center is mixed use and serves as a community hub that exhibits characteristics of a neighborhood center. Given land use patterns makai of the highway and substantial topography changes mauka, there is little opportunity for walksheds to create a large development area, thus, the surrounding land use designations were retained.

Natural Hazards and Climate Change Resilience on the North Shore

The North Shore district is vulnerable to natural hazards, including marine and terrestrial flooding, wave inundation, erosion, and storms and tsunamis. All of these hazards are expected to be exacerbated by climate change and sea level rise, threatening residential, commercial and agricultural activities. This calls for a need to employ resiliency strategies in community siting, design, and relocation. The communities of Kalihiwai, 'Anini, Hanalei, Wainiha, and Hā'ena are particularly vulnerable to coastal hazards, particularly flooding from high waves, flash flooding, and tsunamis.

The *Kauaʻi Climate Change and Coastal Hazards Assessment* conducted a preliminary Sea Level Rise (SLR) Inundation Assessment and Needs for Hanalei, Wainiha, and Haena (Needs Assessment) utilizing "bathtub" still water flood modeling from the National Oceanic and Atmospheric Administration (NOAA) SLR viewer. The inundation maps for the 1-foot and 3-foot SLR scenarios can be found in the Appendix. The maps show a high potential for increased flooding from SLR due to the low lying nature of Hanalei situated between Hanalei and Waioli streams. The maps likely underestimates SLR related hazards, however, because the model does not account for increased coastal erosion and wave induced flooding with increasing sea level rise. This data gap is currently being addressed by University of Hawaiʻi and other researchers and the planning information is expected within the next few years.

Given the high degree of exposure to flooding, wave inundation and other coastal hazards along the North Shore, it is recommended that a community-scale hazard, risk, and vulnerability assessment with climate change and SLR be conducted when updated data becomes available with particular focus on residential, commercial, and visitor accommodations, essential

infrastructure like roads and bridges, and agricultural areas. Such an assessment should be conducted in advance of or in conjunction with the Community Plan update.

The Needs Assessment recommends that the County may adopt requirements for flood hazard mitigation/adaptation that account for SLR hazards and are above and beyond the FEMA FIRM flood zones and the base floor elevations (BFEs). Actions for Public Safety and Hazards Resiliency point to the need to update the County flood program.

Lastly, the Needs Assessment suggests prohibiting the subdivision of coastal properties to limit exposure to coastal hazards and prohibiting shoreline armoring to conserve beach ecosystems.

While specific Needs Assessments were not conducted for Kalihiwai and Anini, the SLR data is available for examination, and similar actions and recommendations can be drawn for these low-lying communities.

Other Land Use Changes

The former Residential Community Designation at Princeville Airport was changed to Transportation. The Residential Community pod located mauka of Princeville Airport was removed and changed to Agriculture. The Resort designation over the plateau makai of the Prince Golf Club remains yet limited to an immediate window to seek resort-related zoning approvals pursuant to in *Actions by Sector VI Economy Section 1 Permitting Actions*.

Policy Opportunities

Integrating Transit: The integration of consolidated parking and transit facilities was a common discussion thread throughout the North Shore communities. Participants considered ways that pools of public parking and transit stops could be integrated into town centers, establishing “park-once” facilities and providing convenient transfer points for tourists accessing Kīlauea Lighthouse and Hā’ena State Park, with the goal of mitigating the impact of tourist traffic on the Kūhiō Highway and parking facilities at existing visitor destinations.

The following Goals, Policies, and Actions are preliminary, and were derived from input received during the North Shore Community Visioning Workshop held in November 2015. They should be further explored and vetted with community input during Community Planning processes.

Guidance for Community Planning

The following goals and actions are preliminary and will inform future community planning processes.

GOAL: Retain and restore the historic character of Hanalei.

A. Establish design guidelines for new infill development to match the historic character of the neighborhood.

- a.** Require off-street parking lots to be located behind buildings. pedestrian uses or gathering spaces.
- b.** Allow modest flexibility in site frontages to accommodate

B. Encourage complete streets that balance pedestrian, bicycle, transit, and vehicle needs while maintaining Hanalei's rural character.

- a.** Provide a path or informal sidewalk on the east side of town to connect existing businesses along Kūhiō Highway. provide a park-and-ride location and shuttle stop in Hanalei.
- b.** Consider a shared use path mauka of Kūhiō Highway to provide a parallel route for pedestrians and bicycles.
- c.** Support a coordinated shuttle service for the North Shore and
- d.** Install traffic calming features to improve the safety of pedestrian crossings.
- e.** Explore a bike share program for Hanalei to reduce vehicular trips.

C. Protect Hanalei's unique heritage resources.

- a.** Preserve the character and integrity of Hanalei's historic highway and bridges.
- b.** Protect the kalo lo'i of Hanalei in perpetuity.

D. Build community resilience through education and awareness.

- a.** Educate visitors about threats from tsunami and other hazards and measures for preparedness and response.

GOAL: Improve connectivity and preserve public access to open space in Princeville.

A. Adopt more complete and connected land use patterns for future development that preserves public access to the shoreline and open space.

- a.** Require the provision of good roadway and multimodal connections between Princeville Phases I and II.
- b.** Develop new resorts at an appropriate, small-footprint scale to match the rural surroundings.
- c.** Limit development mauka of the highway, concentrating new residential and institutional uses closer to existing neighborhoods.
- d.** Encourage redevelopment of the Princeville Shopping Center to increase multimodal access and connectivity. Incorporate pedestrian crossings to adjacent areas, traffic calming measures fronting the area, and transit facilities.
- e.** Support a coordinated shuttle service for the North Shore and provide a park-and-ride location and shuttle stop in the Princeville Shopping Center.



View of Hanalei, North Shore District

GOAL: Provide for modest growth of Kīlauea Town with improvements to accommodate resident and visitor needs.

A. Expand the Town Center to provide for resident and visitor needs.

- a.** Provide additional commercial areas targeted toward local-serving businesses.
- b.** Provide additional capacity for housing to accommodate up to 350 new homes in the Town Center area.
- c.** Create a new road connection from the Town Center to Kūhiō Highway. The road will provide a route for visitor traffic to the lighthouse, serve as a gateway to Kīlauea, and provide a backbone for new residential development.
- d.** Support community-driven revitalization efforts and programs.
- e.** Incorporate a visitor parking area with shuttle service into the expanded Town Center.
- f.** Include buildings that accommodate live/work arrangements in the Town Center.
- g.** Incorporate industrial-zoned lands into the new Town Center for production-oriented businesses.

B. Improve pedestrian mobility and multimodal connectivity.

- a.** Improve sidewalk, path and trail connections between the Town Center, agricultural park, and beaches.
- b.** Improve safe access and visibility along Kūhiō Highway utilizing traffic calming measures and gateway features.
- c.** Support a coordinated shuttle service for the North Shore and provide park-and-ride locations and shuttle stops in Kīlauea Town.
- d.** Enable a “park once and walk” environment in the town center by integrating parking and transit.



The General Plan policy maps are spatial depictions of existing and envisioned land uses, resources, and facilities across the island.

Image: Hanalei Valley Taro Fields (Courtesy of Hans Zeller, through [Creative Commons](#))

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5.0

POLICY MAPS

The spatial policy of the General Plan is depicted in a series of policy maps that show the general locations of constraints, resources, and areas appropriate for growth.

5.1 OVERVIEW

The General Plan policy maps are spatial depictions of existing and envisioned land uses, resources, and facilities across the island. The maps depict the locations of existing resources, constraints, and development. They also identify areas which may be appropriate for future development. The maps were developed to be consistent with General Plan policies. They are intended to be utilized and cross-referenced against one another when considering future land use proposals or policies.

The 2000 General Plan contained two sets of policy maps (Land Use and Heritage Resources). This General Plan includes six sets of policy maps:

- ▶ Land Use (Section 5.2)
- ▶ Infrastructure (Section 5.5)
- ▶ Heritage Resources (Section 5.3)
- ▶ Public Facilities (Section 5.6)
- ▶ Hazards (Section 5.4)
- ▶ Transportation (Section 5.7)

Each set of policy maps includes set of seven maps: An island-wide map and a large scale map for each of the six planning district. Transportation is an exception with two maps: one showing transit and another showing roadways and paths. The role and function of each map is described at the beginning of the sections.

5.2 LAND USE MAPS

The General Plan Land Use Maps include an island map at 1"= 4 miles scale and six district maps at 1"= 1, 2, or 3 miles scale. These maps are intended to document desired land use patterns, to distinguish areas appropriate for future development, and identifying those areas which are to be preserved.

Purpose of the Land Use Maps

The purposes of the Land Use Maps are:

- ▶ To identify existing developed areas and lands appropriate for future development.
- ▶ To identify areas that should be retained in a natural or undeveloped state.
- ▶ To identify areas designated as "Natural" and zoned in order to protect steep slopes and streams from erosion and from development.
- ▶ To guide preparation of Community Plans to prepare or revise land use ordinances and rules, including but not limited to the following: revisions to the Comprehensive Zoning Ordinance or the Zoning Maps; zone change ordinances; revisions to the Special Management Area (SMA) rules or boundaries; revisions to the Subdivision Ordinance; and the preparation of new ordinances or rules.
- ▶ To be consulted when projects are undertaken with State or County lands or funds.
- ▶ To serve as a guide in the review of subdivision and land use permit applications. General Plan Land Use Maps alone may not be used to prohibit a land use that is allowed by the Comprehensive Zoning Ordinance or by permit.

Figure 5-1. Kaua'i Land Use Map

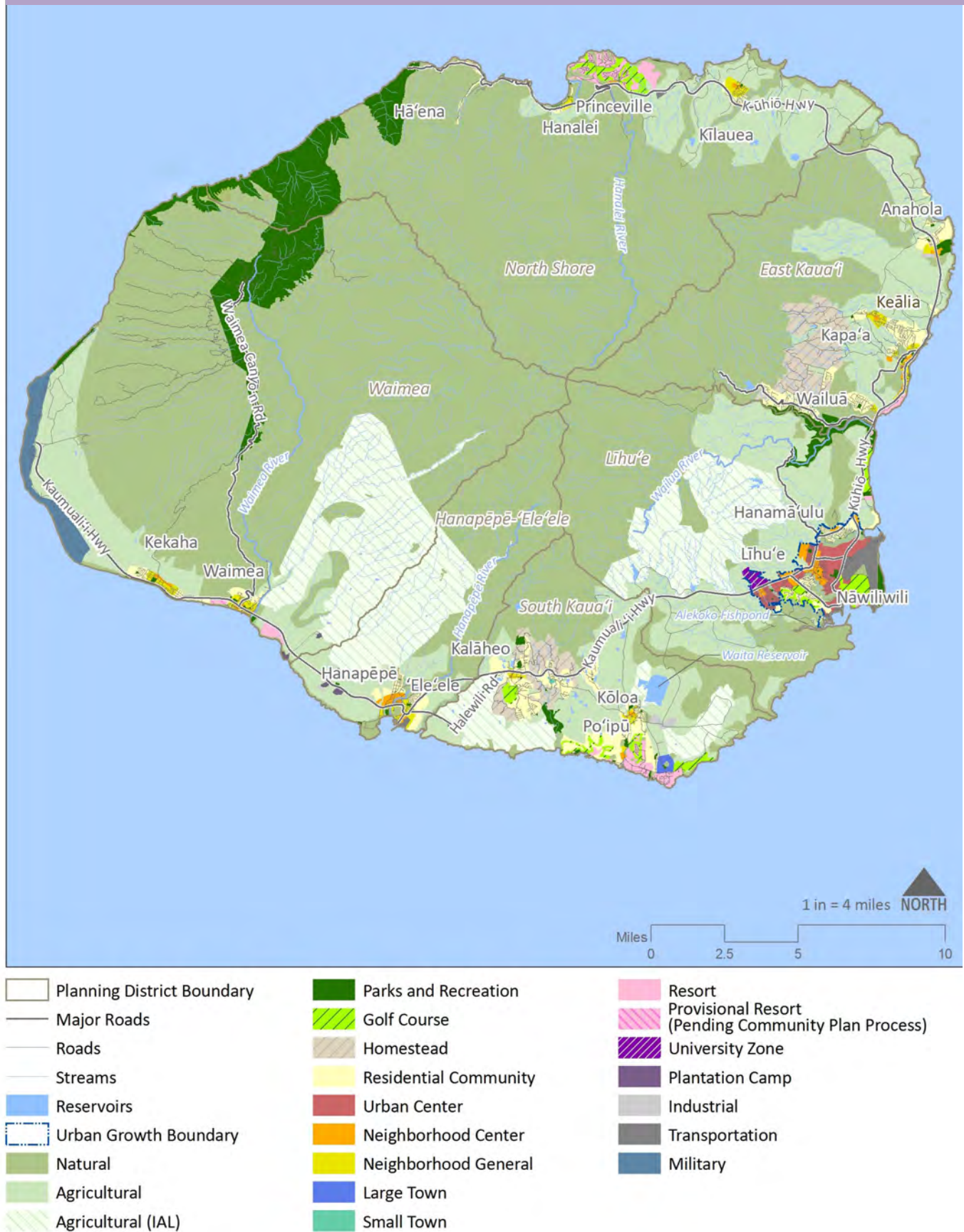


Figure 5-2. Waimea-Kekaha Land Use Map

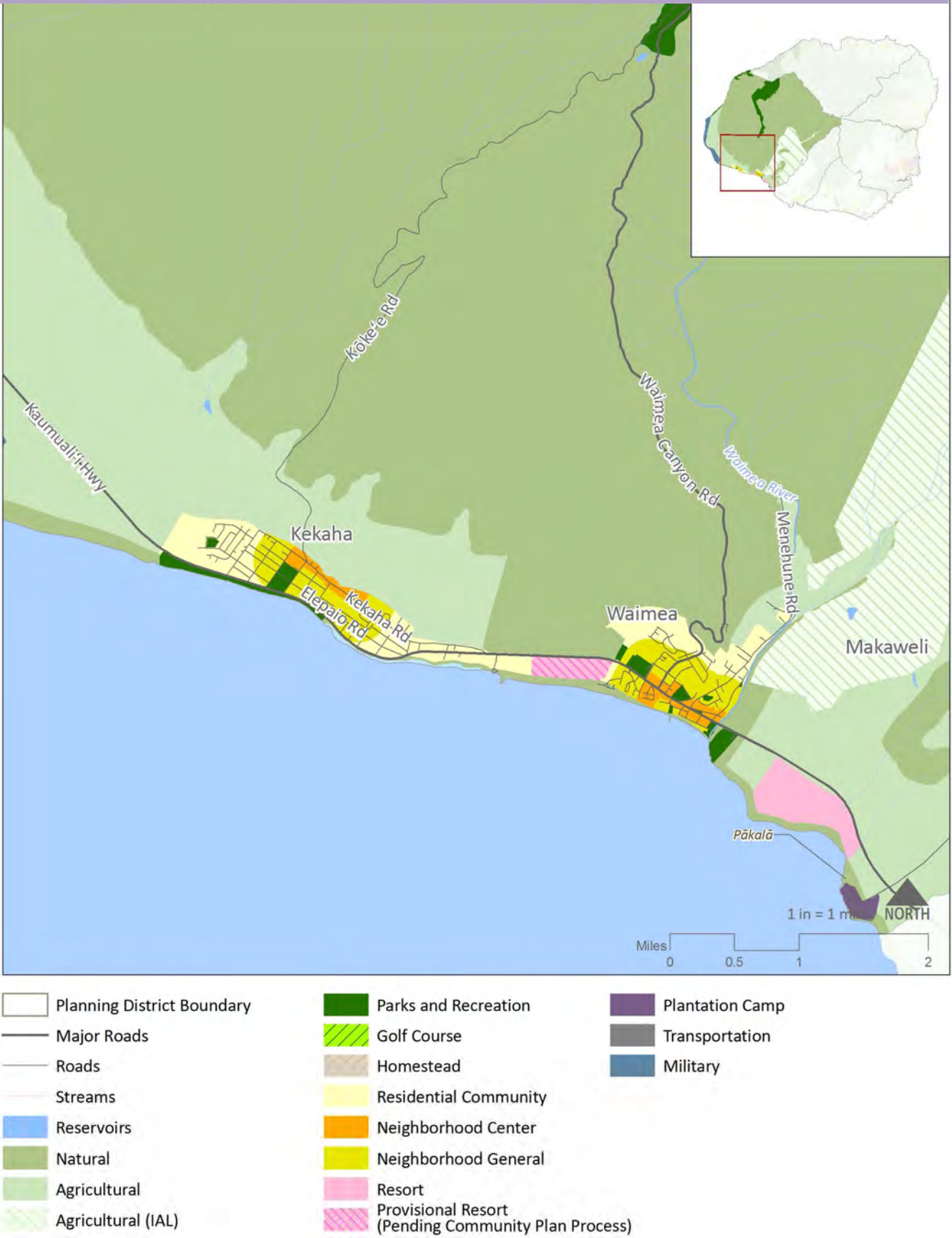


Figure 5-3. Hanapēpē-‘Ele‘ele Land Use Map

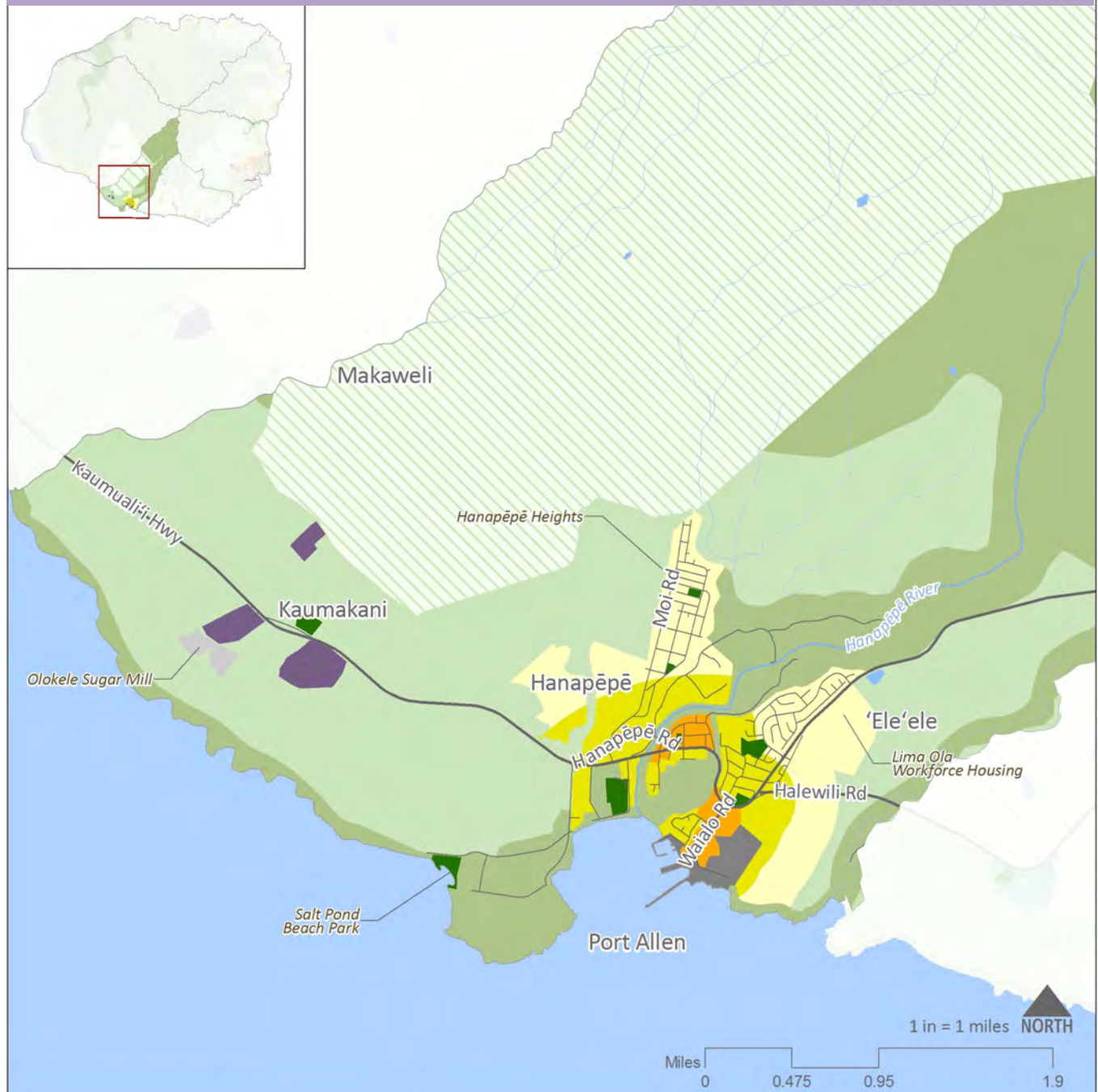


Figure 5-4. South Kauaʻi Land Use Map

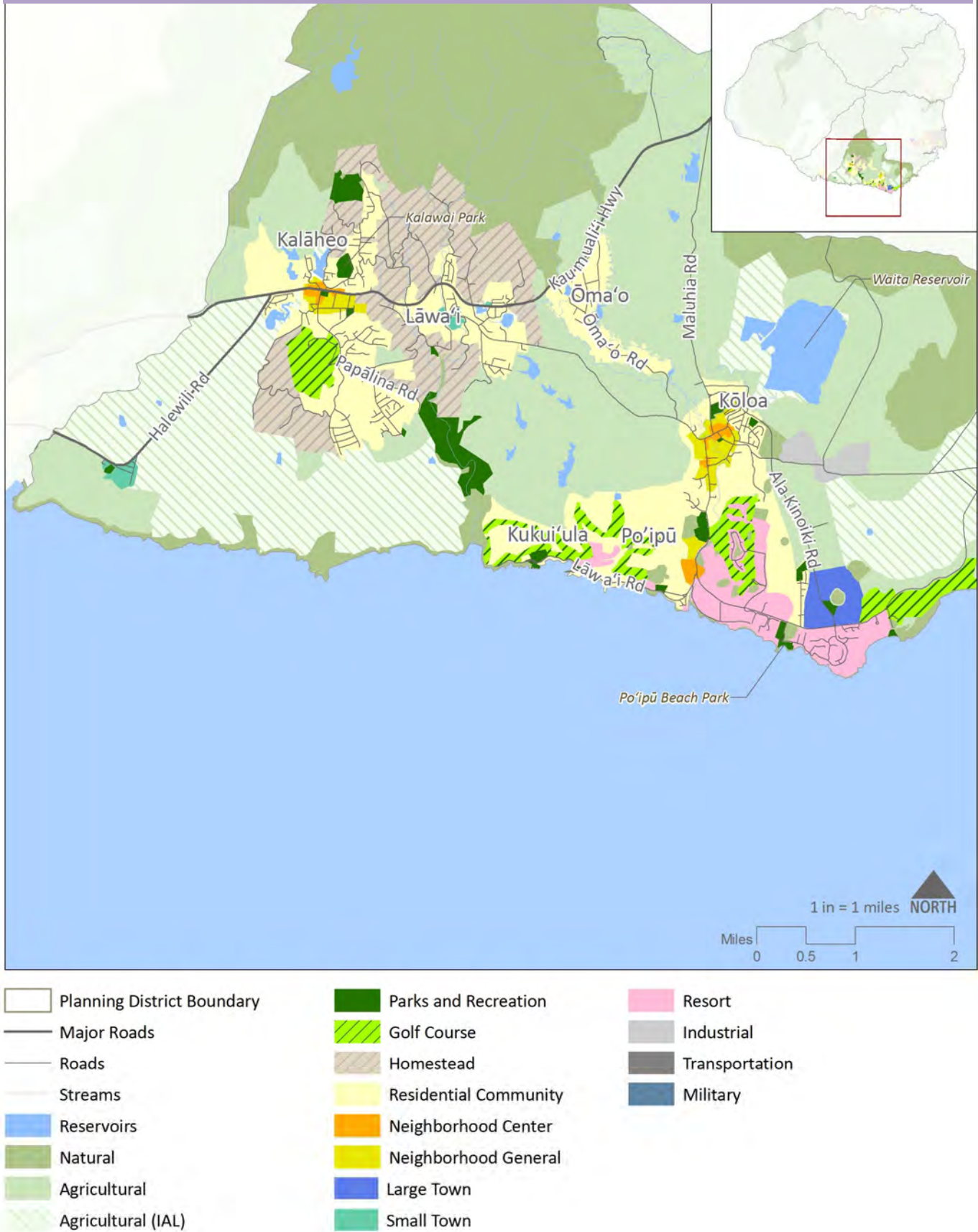


Figure 5-5. Līhu'e Land Use Map

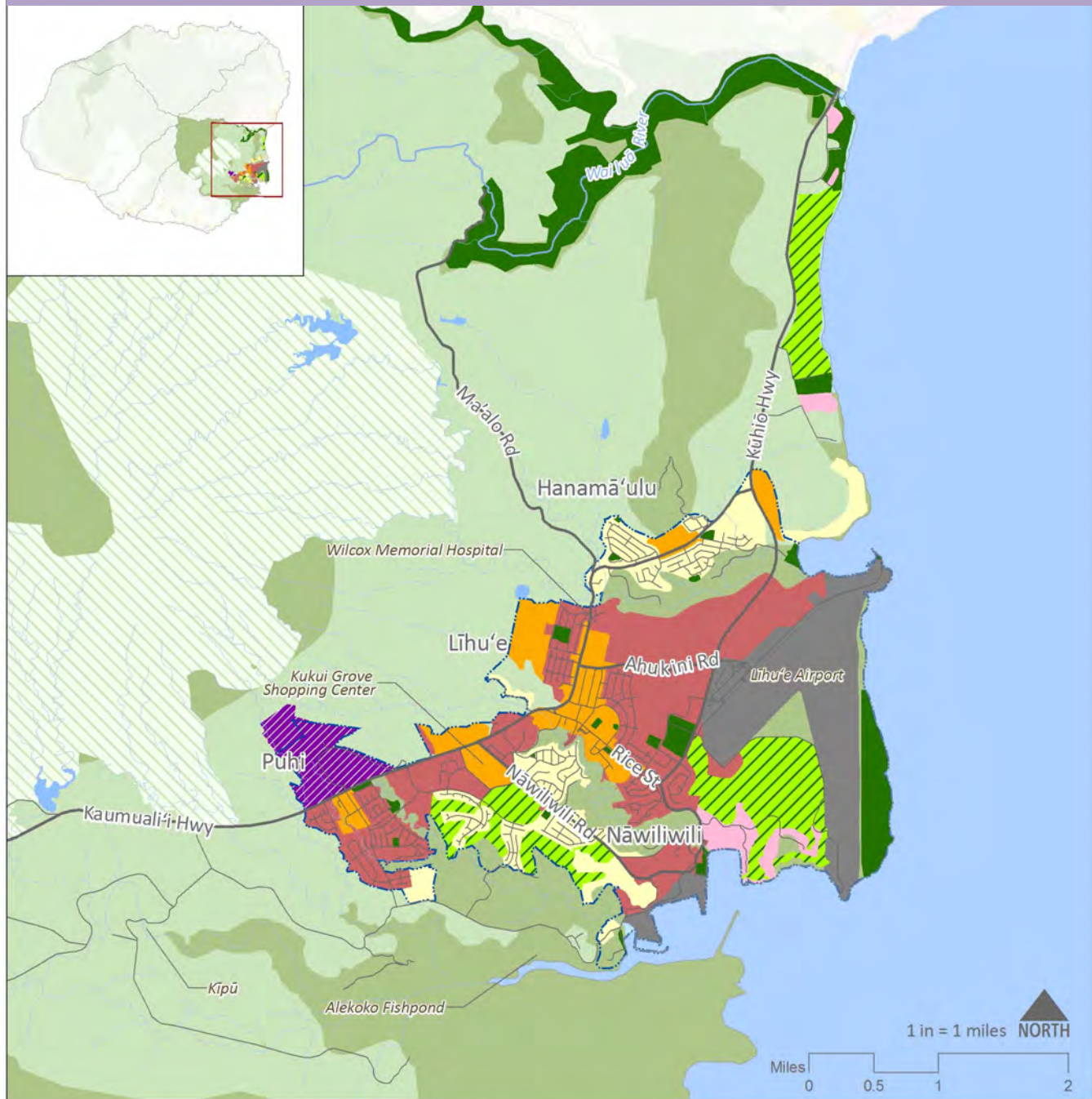


Figure 5-6. East Kaua'i Land Use Map

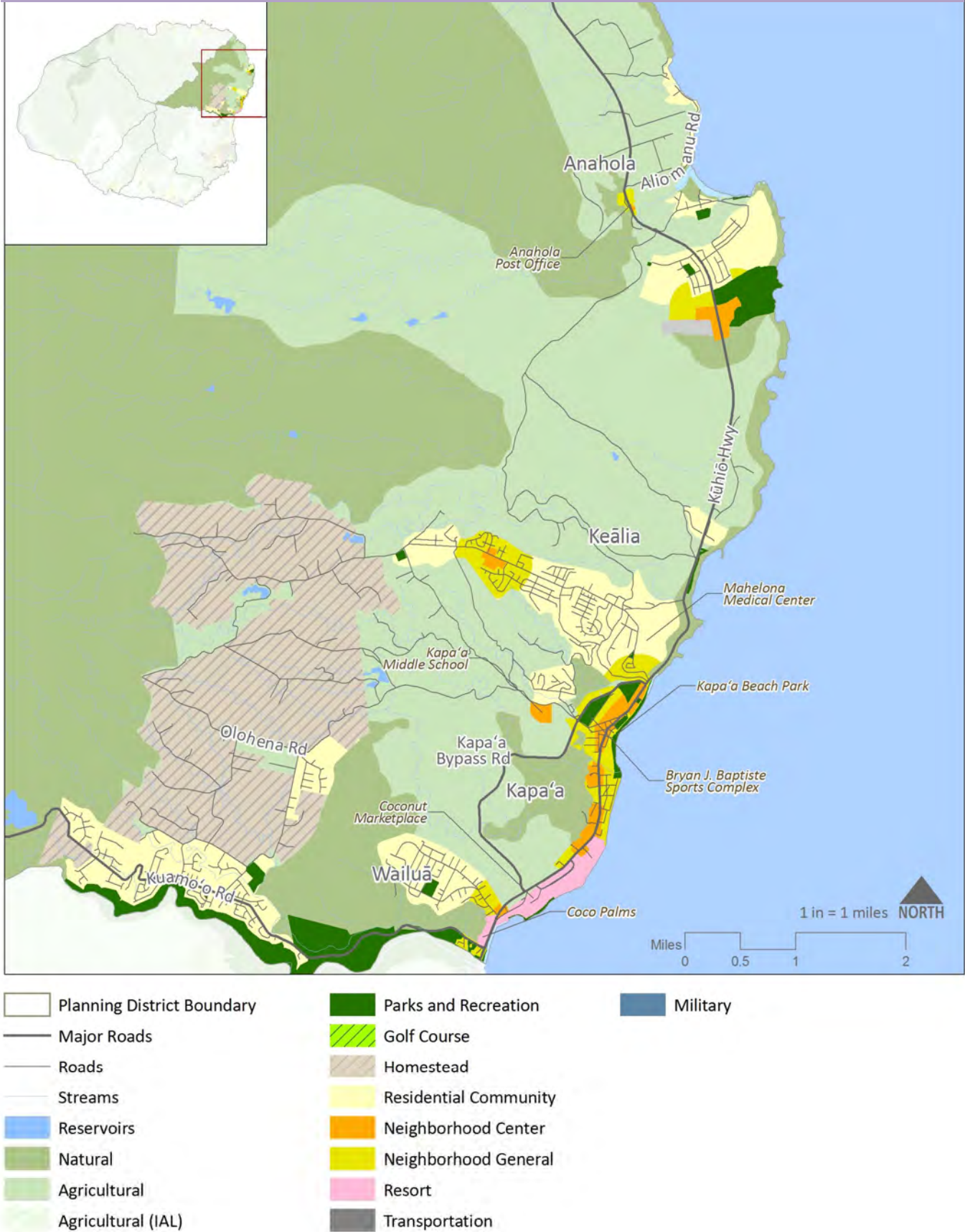
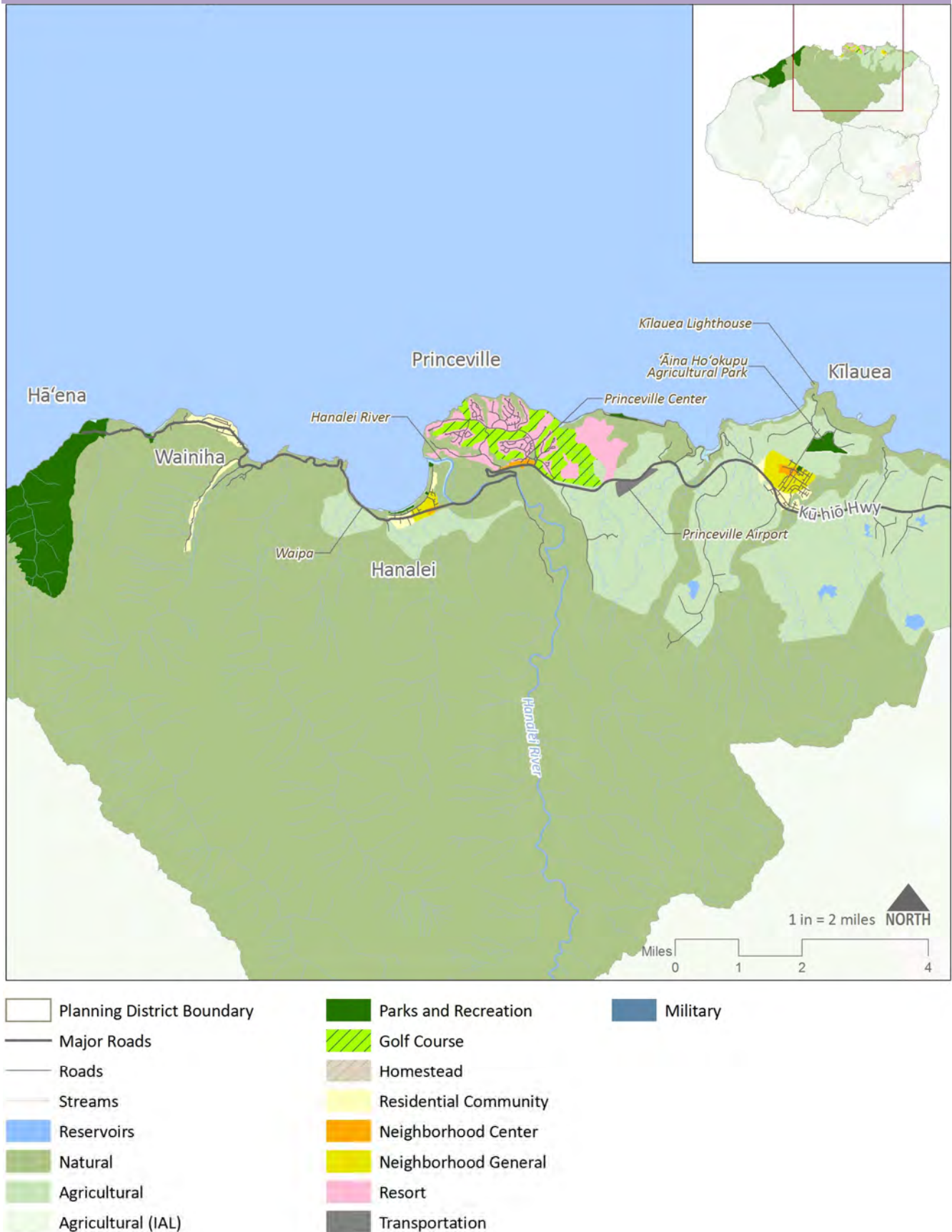


Figure 5-7. North Shore Land Use Map



5.3 HERITAGE RESOURCE MAPS

The General Plan’s set of Heritage Resources Maps includes an island map and six district maps at a larger scale. These maps document important natural, scenic and historic features, particularly in relation to the urban and agricultural lands which are developed or may be developed in the future, including:

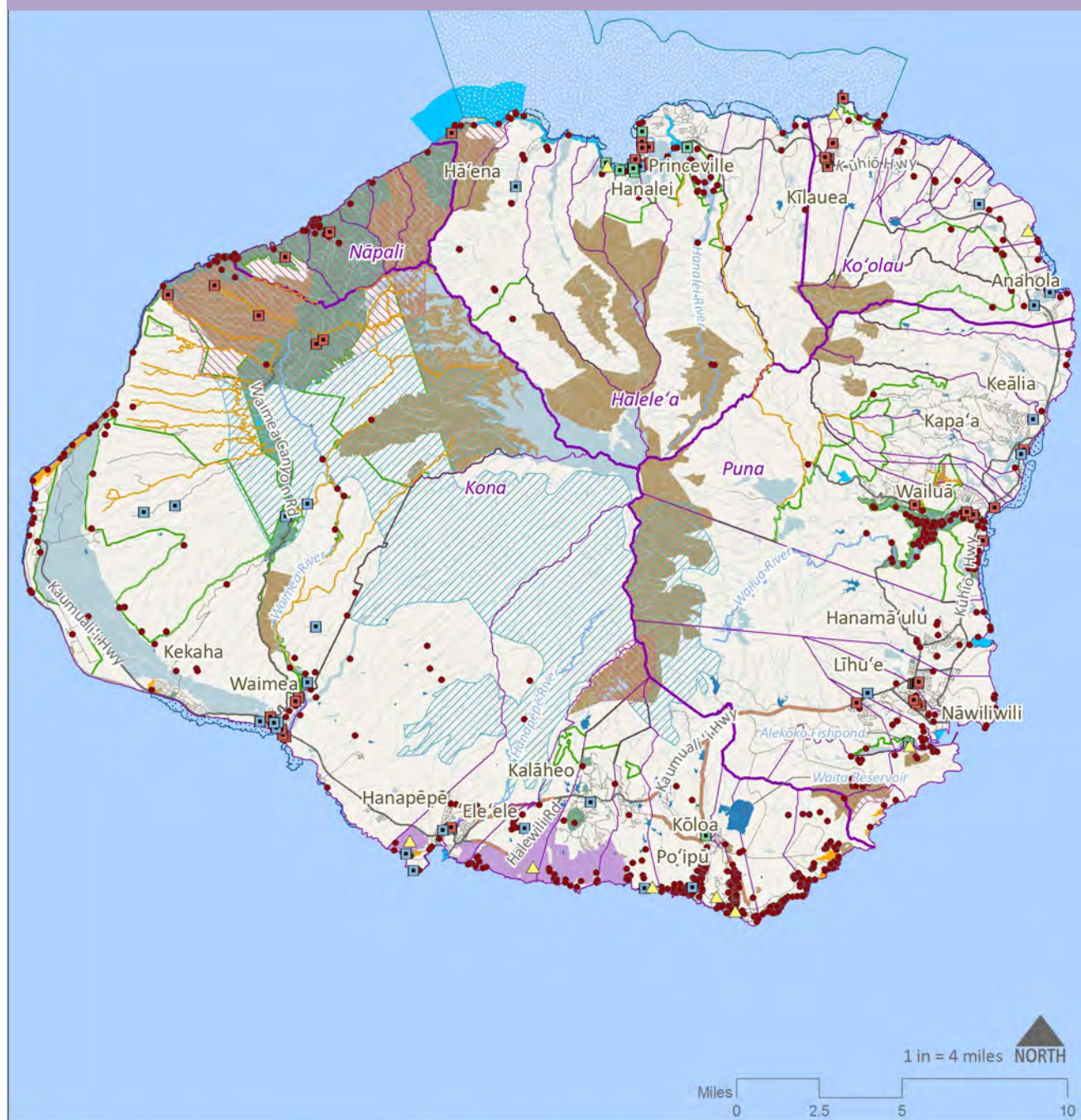
- ▶ Registered historic sites (State/Federal)
- ▶ Cultural features
- ▶ Priority public access points
- ▶ Fishponds
- ▶ Streams & Waterbodies
- ▶ Wetlands
- ▶ Major Roads
- ▶ Planning District Boundaries
- ▶ Traditional Cultivation Areas
- ▶ Ahupuaʻa Boundaries
- ▶ Coral Reefs
- ▶ Scenic Corridors
- ▶ State & County Parks
- ▶ Preserves
- ▶ Reservoirs
- ▶ Regulated Fishing Areas
- ▶ Open Space Acquisition Priorities
- ▶ Sand Dunes
- ▶ Threatened and Endangered Species
- ▶ Critical Habitat

Purposes of the Heritage Resource Maps

The purposes of the Heritage Resource Maps are:

- ▶ To depict natural, cultural and scenic resources that are important to the County of Kauaʻi and that are intended to be conserved. The mapping of important landforms, streams and other physical elements represents the general location of the resource. The mapping of historic and archaeological sites, other features and Scenic Roadway Corridors is intended to be representational, not precise.
- ▶ To classify important landforms that shall be designated as “Natural” on the GP Land Use Map and shall be zoned accordingly, in order to protect steep slopes and streams from erosion and to protect landforms from development that might affect scenic views.
- ▶ To be a guide when preparing Community Plans and in preparing or revising land use ordinances and rules, including but not limited to the following: revisions to the Comprehensive Zoning Ordinance or the Zoning Maps; zone change ordinances; revisions to the Special Management Area (SMA) rules or boundaries; revisions to the Subdivision Ordinance; and the preparation of new ordinances or rules, such as a Scenic Roadway Corridor ordinance.
- ▶ To be a reference projects undertaken with State or County lands or funds shall be designed to conserve heritage resources.
- ▶ To guide in the review of subdivision and land use permit applications, but may not be used alone to prohibit a land use that is allowed by the Comprehensive Zoning Ordinance or by permit.

Figure 5-8. Kaua'i Island Heritage Resource Map



Registered Historic Sites

- State
- National
- State & National
- Cultural Features
- ▲ Priority Public Access Points
- ◆ Fish Ponds
- Streams & Waterbodies
- Major Roads
- Roads

- Historic Belt Road
- Trails
- Kōloa Scenic Byway
- Planning District Boundary
- Ahupua'a Boundaries
- Wetlands
- Coral Reefs
- Regulated Fishing Areas
- State & County Parks

- Preserves
- Reservoirs
- Traditional Cultivation Areas
- Sand Dunes
- Open Space Acquisition Priorities
- Critical Habitat
- Threatened & Endangered Species
- High Density
- Very High Density

Figure 5-9. Waimea-Kekaha Heritage Resource Map**Registered Historic Sites**

- State
- National
- State & National
- Cultural Features
- ▲ Priority Public Access Points
- ◆ Fish Ponds
- Streams & Waterbodies
- Major Roads
- Roads

- Trails
- Planning District Boundary
- Ahupuaʻa Boundaries
- Wetlands
- Coral Reefs
- Regulated Fishing Areas
- State & County Parks
- Preserves
- Reservoirs

- Traditional Cultivation Areas
- Sand Dunes
- Open Space Acquisition Priorities
- Critical Habitat
- Threatened & Endangered Species
- High Density
- Very High Density

Figure 5-10. Hanapēpē-‘Ele‘ele Heritage Resource Map



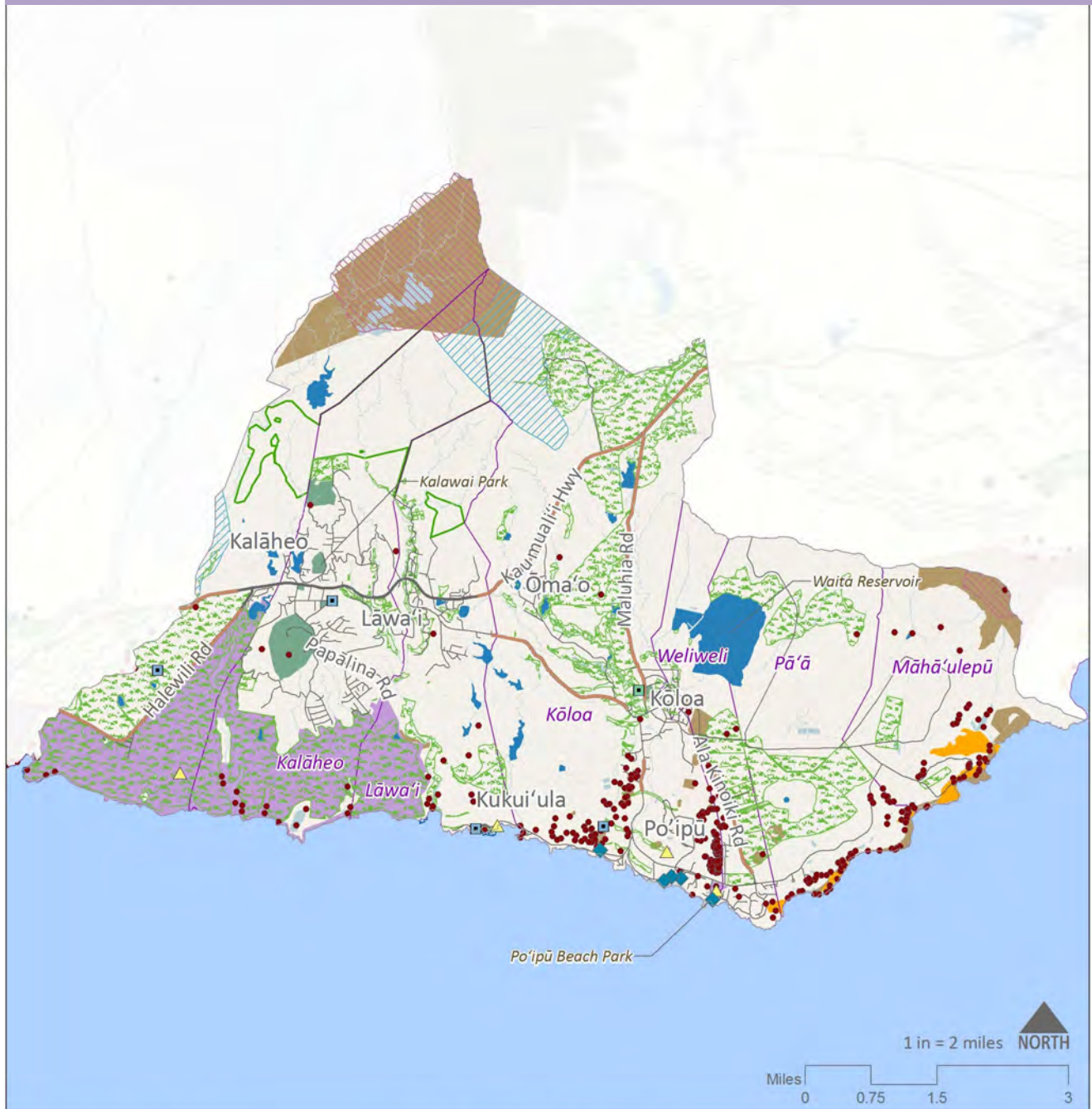
Registered Historic Sites

- State
- National
- State & National
- Cultural Features
- ▲ Priority Public Access Points
- ◆ Fish Ponds
- Streams & Waterbodies
- Major Roads
- Roads

- Trails
- Planning District Boundary
- Ahupua‘a Boundaries
- Wetlands
- Coral Reefs
- Regulated Fishing Areas
- State & County Parks
- Preserves
- Reservoirs

- Traditional Cultivation Areas
- Sand Dunes
- Open Space Acquisition Priorities
- Critical Habitat
- Threatened & Endangered Species**
- High Density
- Very High Density

Figure 5-11. South Kaua'i Heritage Resource Map



Registered Historic Sites

- State
- National
- State & National
- Cultural Features
- Priority Public Access Points
- Fish Ponds
- Streams & Waterbodies
- Major Roads
- Roads

- Kōloa Scenic Byway
- Trails
- Planning District Boundary
- Ahupua'a Boundaries
- Wetlands
- Coral Reefs
- Regulated Fishing Areas
- State & County Parks
- Preserves

- Reservoirs
- Traditional Cultivation Areas
- Sand Dunes
- Open Space Acquisition Priorities
- Critical Habitat
- Threatened & Endangered Species
- High Density
- Very High Density

Figure 5-12. Līhu'e Heritage Resource Map



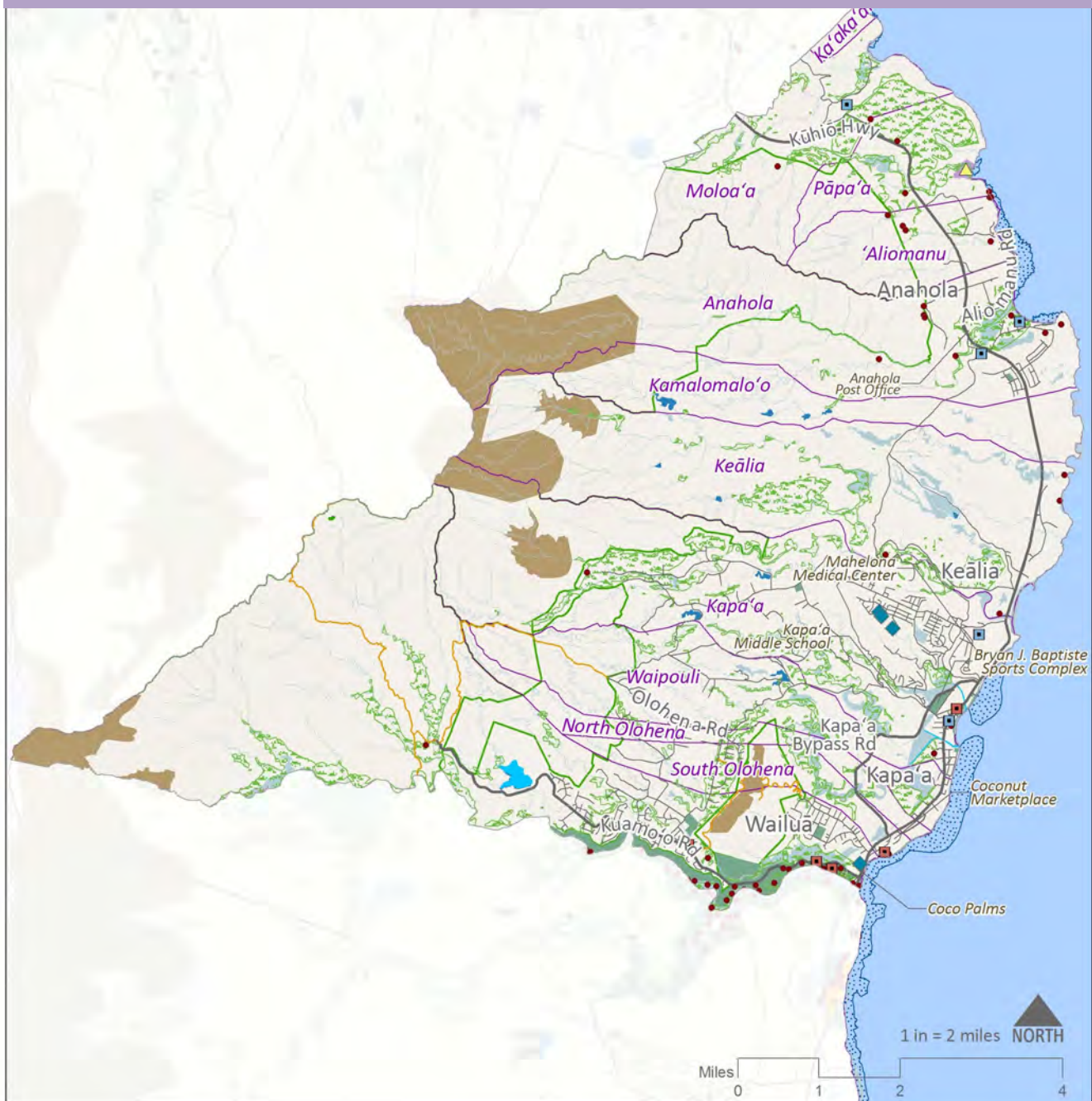
Registered Historic Sites

- State
- National
- State & National
- Cultural Features
- Priority Public Access Points
- Fish Ponds
- Streams & Waterbodies
- Major Roads
- Roads

- Trails
- Planning District Boundary
- Ahupua'a Boundaries
- Wetlands
- Coral Reefs
- Regulated Fishing Areas
- State & County Parks
- Preserves
- Reservoirs

- Traditional Cultivation Areas
- Sand Dunes
- Open Space Acquisition Priorities
- Critical Habitat
- Threatened & Endangered Species
- High Density
- Very High Density

Figure 5-13. East Kauaʻi Heritage Resource Map



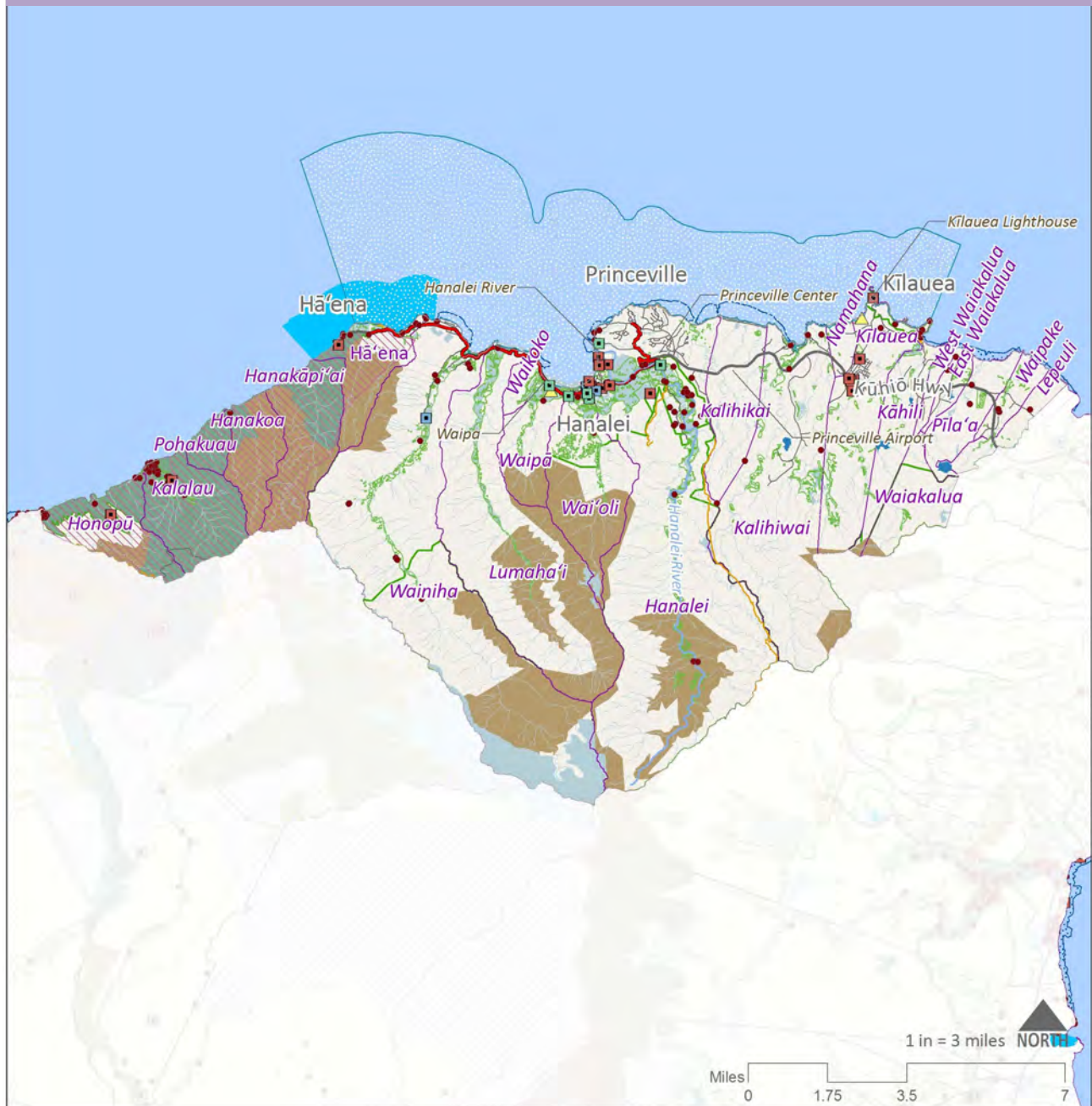
Registered Historic Sites

- State
- National
- State & National
- Cultural Features
- ▲ Priority Public Access Points
- ◆ Fish Ponds
- Streams & Waterbodies
- Major Roads
- Roads

- Trails
- Planning District Boundary
- Ahupuaʻa Boundaries
- Wetlands
- Coral Reefs
- Regulated Fishing Areas
- State & County Parks
- Preserves
- Reservoirs

- Traditional Cultivation Areas
- Sand Dunes
- Open Space Acquisition Priorities
- Critical Habitat
- Threatened & Endangered Species
- High Density
- Very High Density

Figure 5-14. North Shore Heritage Resource Map



Registered Historic Sites

- State
- National
- State & National
- Cultural Features
- ▲ Priority Public Access Points
- ◆ Fish Ponds
- Streams & Waterbodies
- Major Roads
- Roads

- Historic Belt Road
- Trails
- Planning District Boundary
- Ahupua'a Boundaries
- Wetlands
- Coral Reefs
- Regulated Fishing Areas
- State & County Parks
- Preserves

- Reservoirs
- Traditional Cultivation Areas
- Sand Dunes
- Open Space Acquisition Priorities
- Critical Habitat
- Threatened & Endangered Species
- High Density
- Very High Density

5.4 HAZARD MAPS

Hazard Maps have been included in this General Plan to support the goals and policies relating to increasing resilience. The maps identify areas across the island that may be vulnerable to natural hazards including flooding, wildfire, and tsunami. They also identify the locations of critical facilities. The Hazard Maps, like the Heritage Resource Maps, are intended to be used as a planning tool to guide responsible decision-making about future land use and capital investments. The Hazard Maps should be periodically reviewed and updated as additional data becomes available. The Extreme Tsunami Zone was added to the maps to show how such an event might affect the island, however its intended use is specifically for hazard evacuation planning. As such, it was not used to inform changes to the Land Use Maps. Maps depicting potential 1-foot and 3-foot sea level rise scenarios for select locations on the island are included in Appendix E.

The Hazard Maps show:

- ▶ Dams
- ▶ Emergency Shelters
- ▶ Critical Facilities
- ▶ Major Roads
- ▶ Tsunami Evacuation Zones
- ▶ Extreme Tsunami Zones
- ▶ Streams
- ▶ Wildfire Risk Rating
- ▶ Flood Zones

Purposes of the Hazard Maps

The purposes of the Hazard Maps are as follows:

- ▶ The Hazard Maps depict areas known to be vulnerable to natural hazards including flood, wildfire, and tsunami. These risk areas have been mapped using existing data sources and depict general locations that are intended to be representational, not precise.
- ▶ The Hazard Map shall be used as a planning tool to identify existing developed areas that may need further analysis or protection. They can also help guide land use decisions that situate future development and critical facilities in safer areas.
- ▶ The Hazard Maps should be referenced in preparing Community Plans.
- ▶ Preparing or revising land use ordinances and rules, including but not limited to the following: revisions to the Comprehensive Zoning Ordinance or the Zoning Maps; zone change ordinances; revisions to the Special Management Area (SMA) rules or boundaries; revisions to the Subdivision Ordinance; and the preparation of new ordinances or rules.
- ▶ Projects undertaken with State or County lands or funds should be planned outside of known hazard areas.
- ▶ The Hazard Maps shall serve as a guide in the review of subdivision and land use permit applications, but may not be used to prohibit a land use that is allowed by the Comprehensive Zoning Ordinance or by permit.

Figure 5-15. Kauaʻi Island Hazard Map

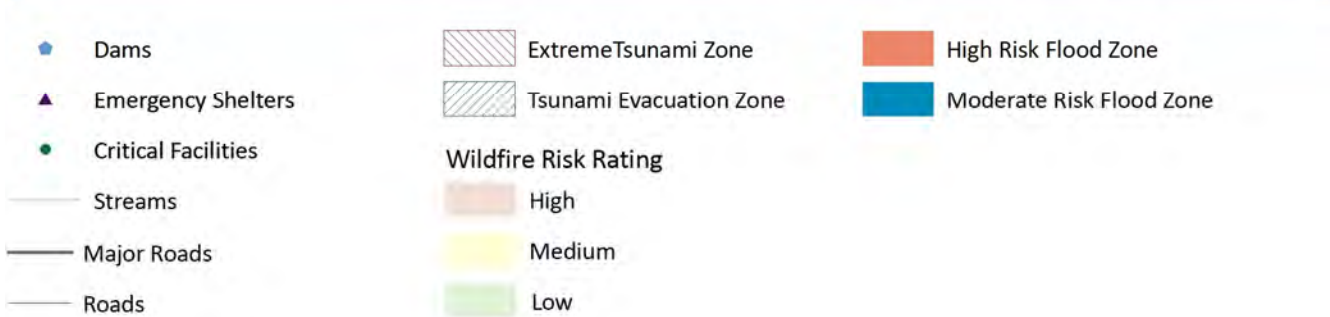


Figure 5-16. Waimea-Kekaha Hazard Map

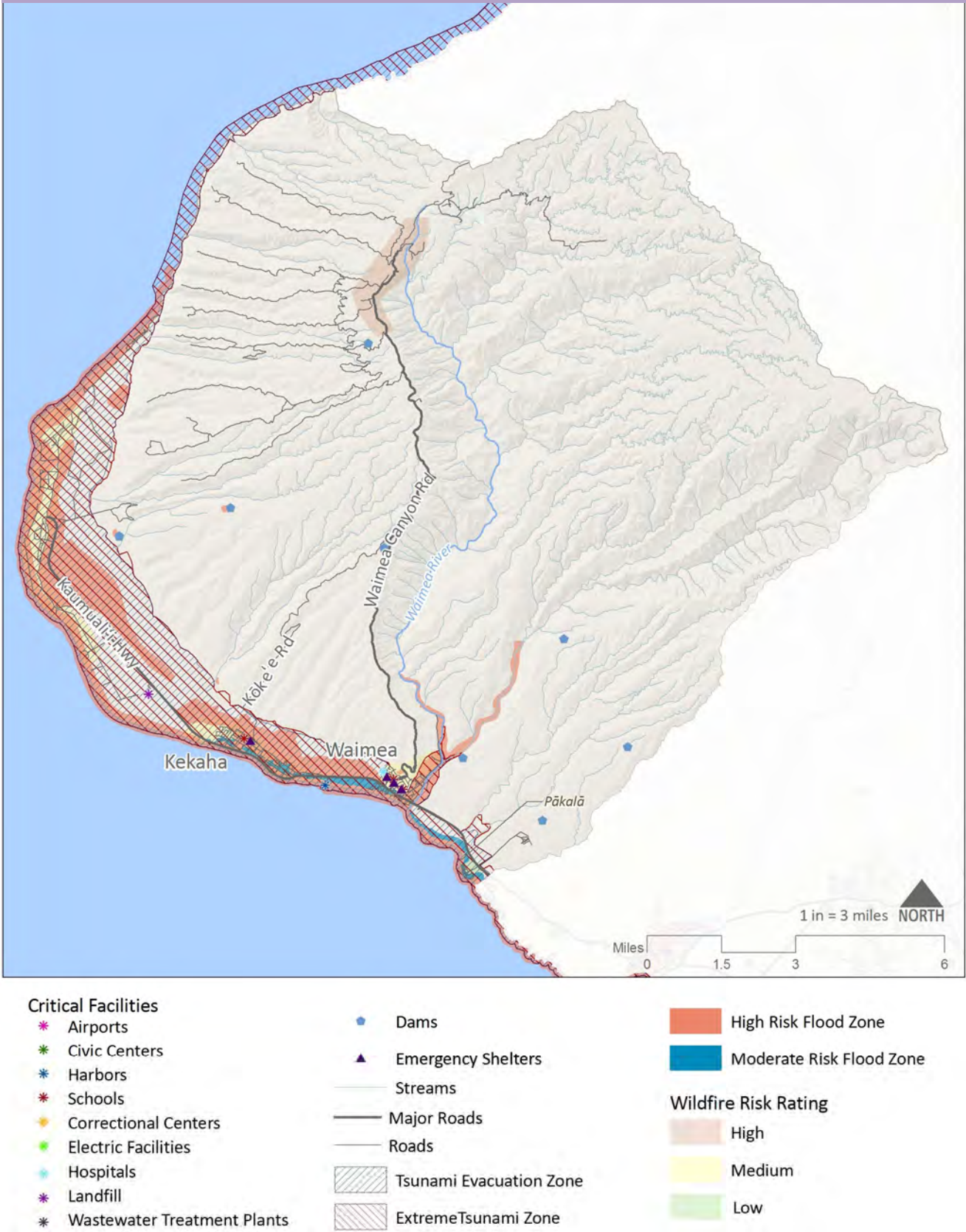


Figure 5-17. Hanapēpē-ʻEleʻele Hazard Map



Critical Facilities

- * Airports
- * Civic Centers
- * Harbors
- * Schools
- * Correctional Centers
- * Electric Facilities
- * Hospitals
- * Landfill
- * Wastewater Treatment Plants

- Dams
- ▲ Emergency Shelters
- Streams
- Major Roads
- Roads
- ▨ Tsunami Evacuation Zone
- ▨ Extreme Tsunami Zone

- High Risk Flood Zone
- Moderate Risk Flood Zone

Wildfire Risk Rating

- High
- Medium
- Low

Figure 5-18. South Kaua'i Hazard Map



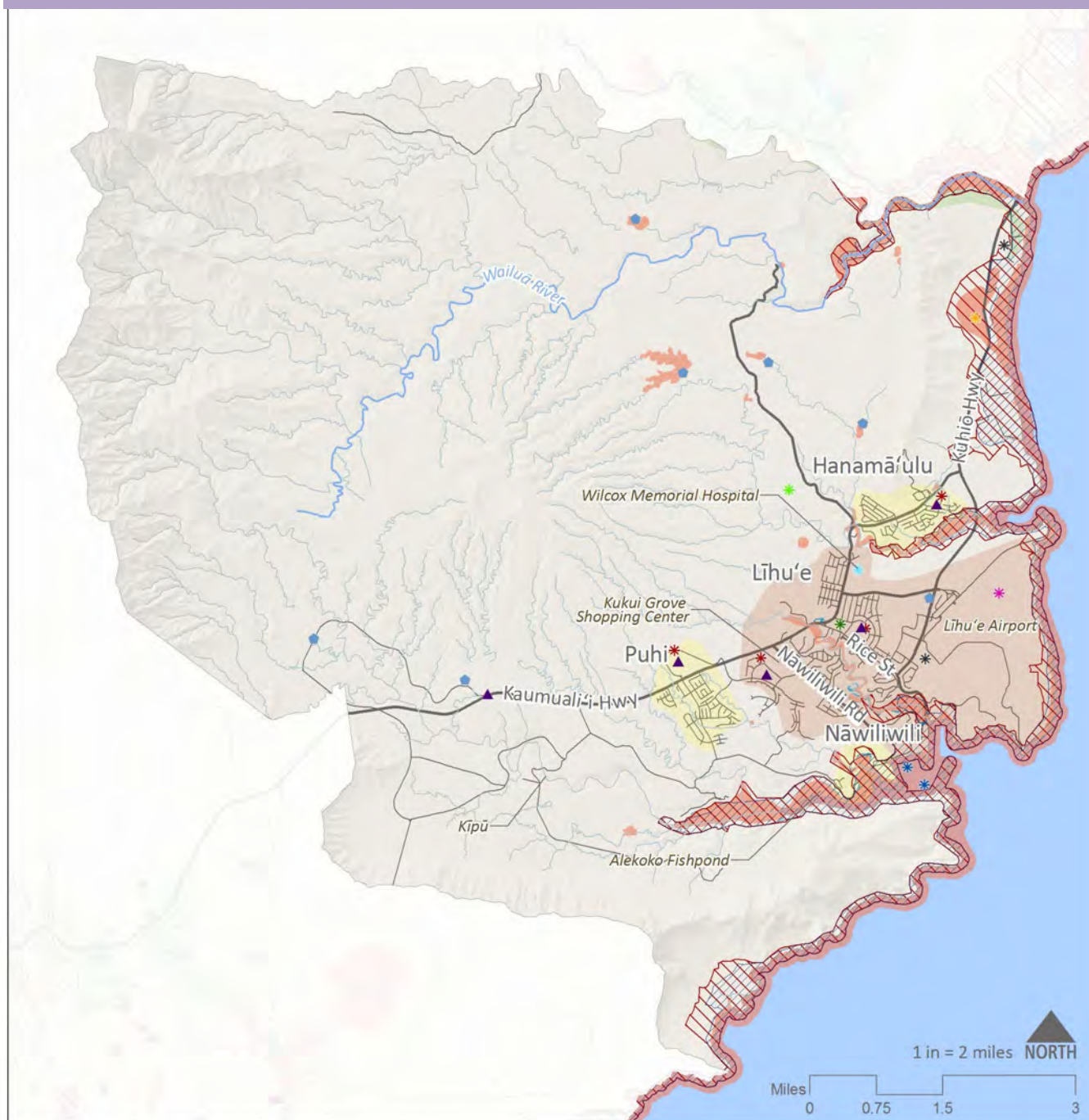
Critical Facilities

- Airports
- Civic Centers
- Harbors
- Schools
- Correctional Centers
- Electric Facilities
- Hospitals
- Landfill
- Wastewater Treatment Plants

- Dams
- Emergency Shelters
- Streams
- Major Roads
- Roads
- Tsunami Evacuation Zone
- Extreme Tsunami Zone

- High Risk Flood Zone
- Moderate Risk Flood Zone
- Wildfire Risk Rating
 - High
 - Medium
 - Low

Figure 5-19. Līhu'e Hazard Map



Critical Facilities

- * Airports
- * Civic Centers
- * Harbors
- * Schools
- * Correctional Centers
- * Electric Facilities
- * Hospitals
- * Landfill
- * Wastewater Treatment Plants

◆ Dams

▲ Emergency Shelters

— Streams

— Major Roads

— Roads

▨ Tsunami Evacuation Zone

▩ Extreme Tsunami Zone

High Risk Flood Zone

Moderate Risk Flood Zone

Wildfire Risk Rating

High

Medium

Low

Figure 5-20. East Kauaʻi Hazard Map

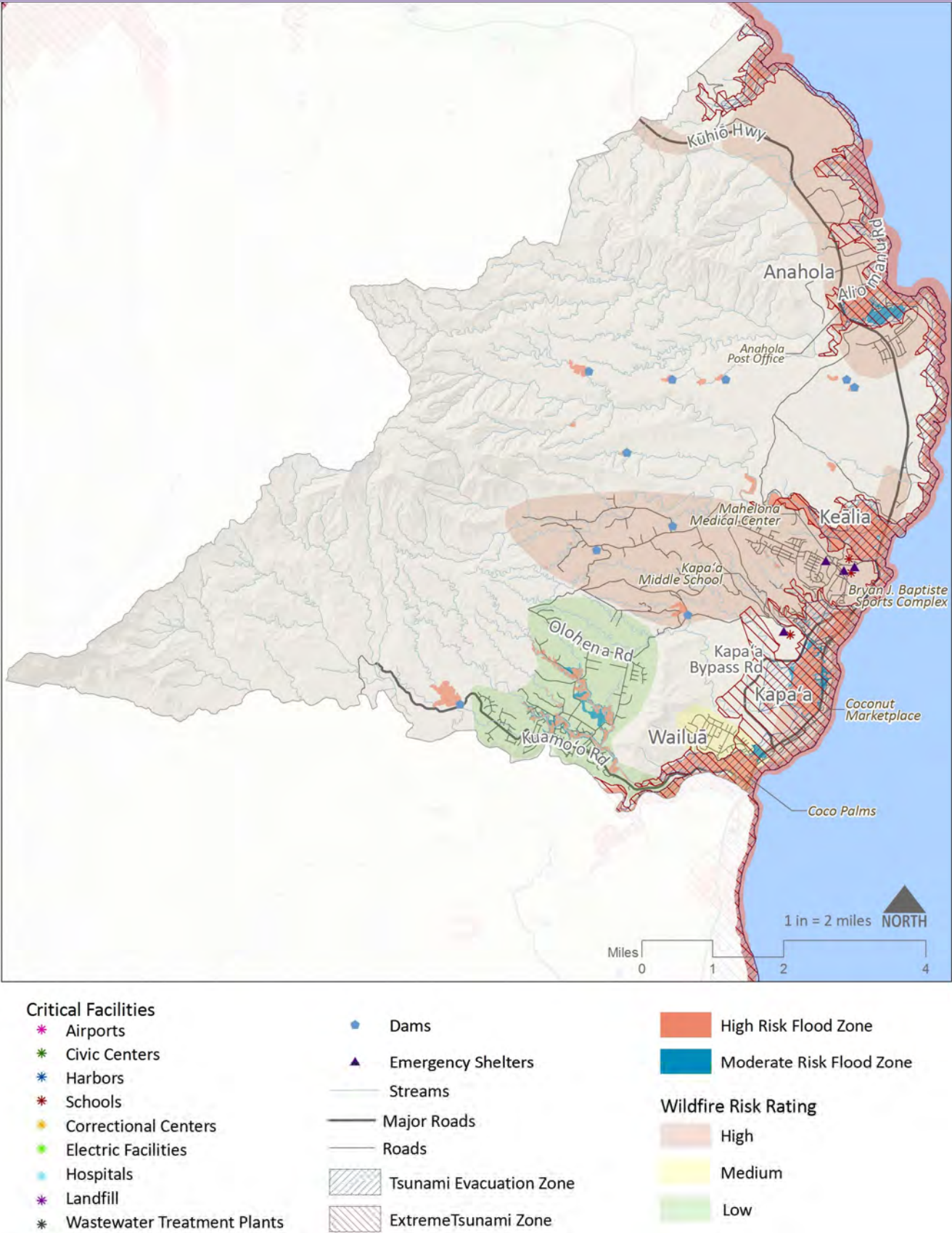
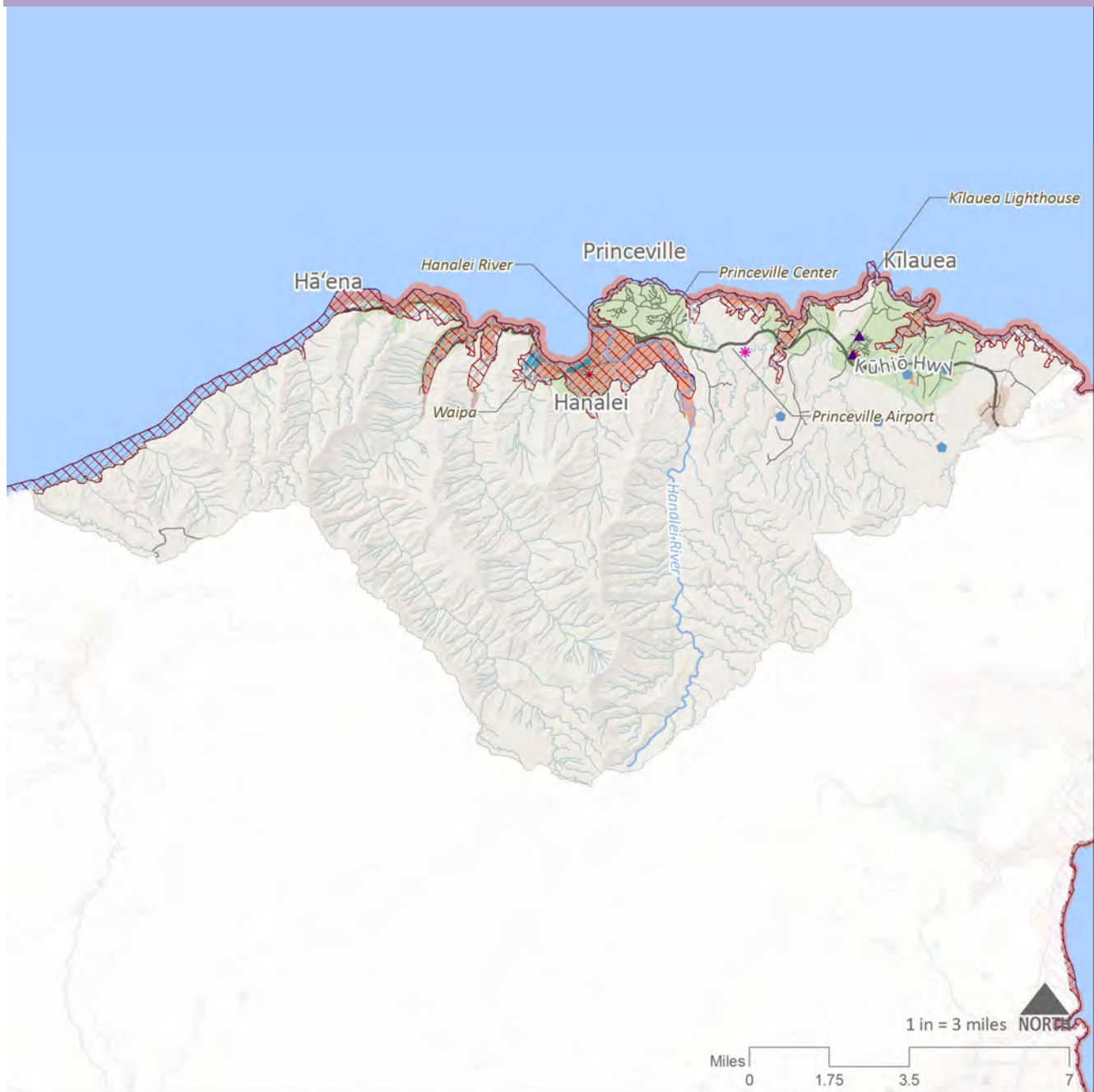


Figure 5-21. North Shore Hazard Map



Critical Facilities

- * Airports
- * Civic Centers
- * Harbors
- * Schools
- * Correctional Centers
- * Electric Facilities
- * Hospitals
- * Landfill
- * Wastewater Treatment Plants

- ◆ Dams
- ▲ Emergency Shelters
- Streams
- Major Roads
- Roads
- ▨ Tsunami Evacuation Zone
- ▩ Extreme Tsunami Zone

- High Risk Flood Zone
 - Moderate Risk Flood Zone
- Wildfire Risk Rating**
- High
 - Medium
 - Low

5.5 INFRASTRUCTURE MAPS

This General Plan Infrastructure Maps are a new addition to this General Plan. The maps identify the locations of existing infrastructure systems for water, wastewater, electrical power generation, and solid waste. These maps are intended to be used as a resource to guide responsible decision-making about future land use and infrastructure investments. The Infrastructure Maps should be periodically reviewed and updated as additional data becomes available.

The Infrastructure Maps include the following information:

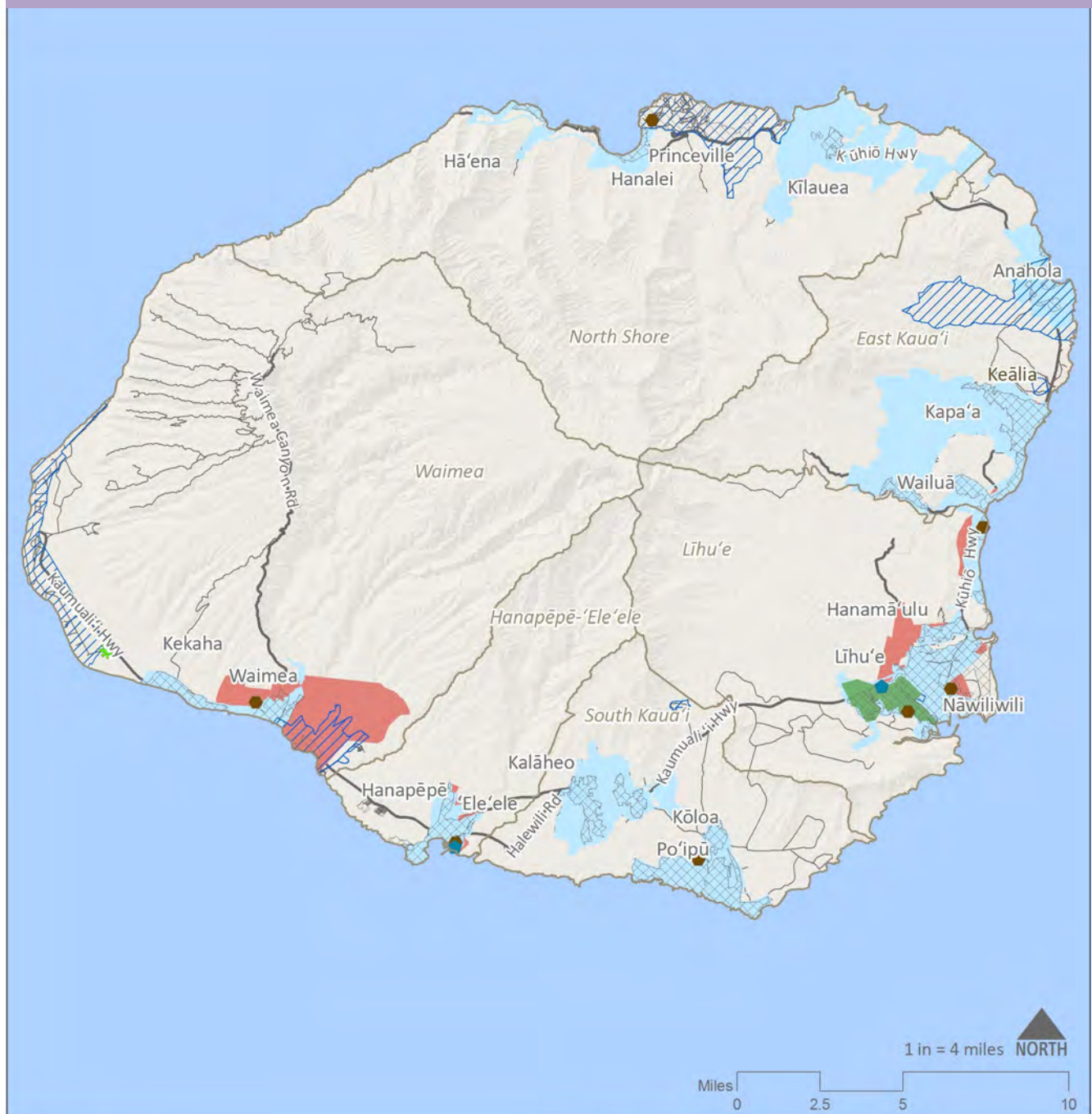
- ▶ Solid Waste Management Facilities
- ▶ Water Pumps
- ▶ Water Tanks
- ▶ Waterlines
- ▶ Private Water System Services Areas
- ▶ County Water System Service Areas
- ▶ Waste Water Treatment Plant
- ▶ Sewer Pump Stations
- ▶ County Wastewater System Service Areas
- ▶ Private Wastewater Service Area
- ▶ Power Plants
- ▶ State Land Use District Urban Designated Lands
- ▶ Planning District Boundary
- ▶ Major Roads

Purposes of the Infrastructure Maps

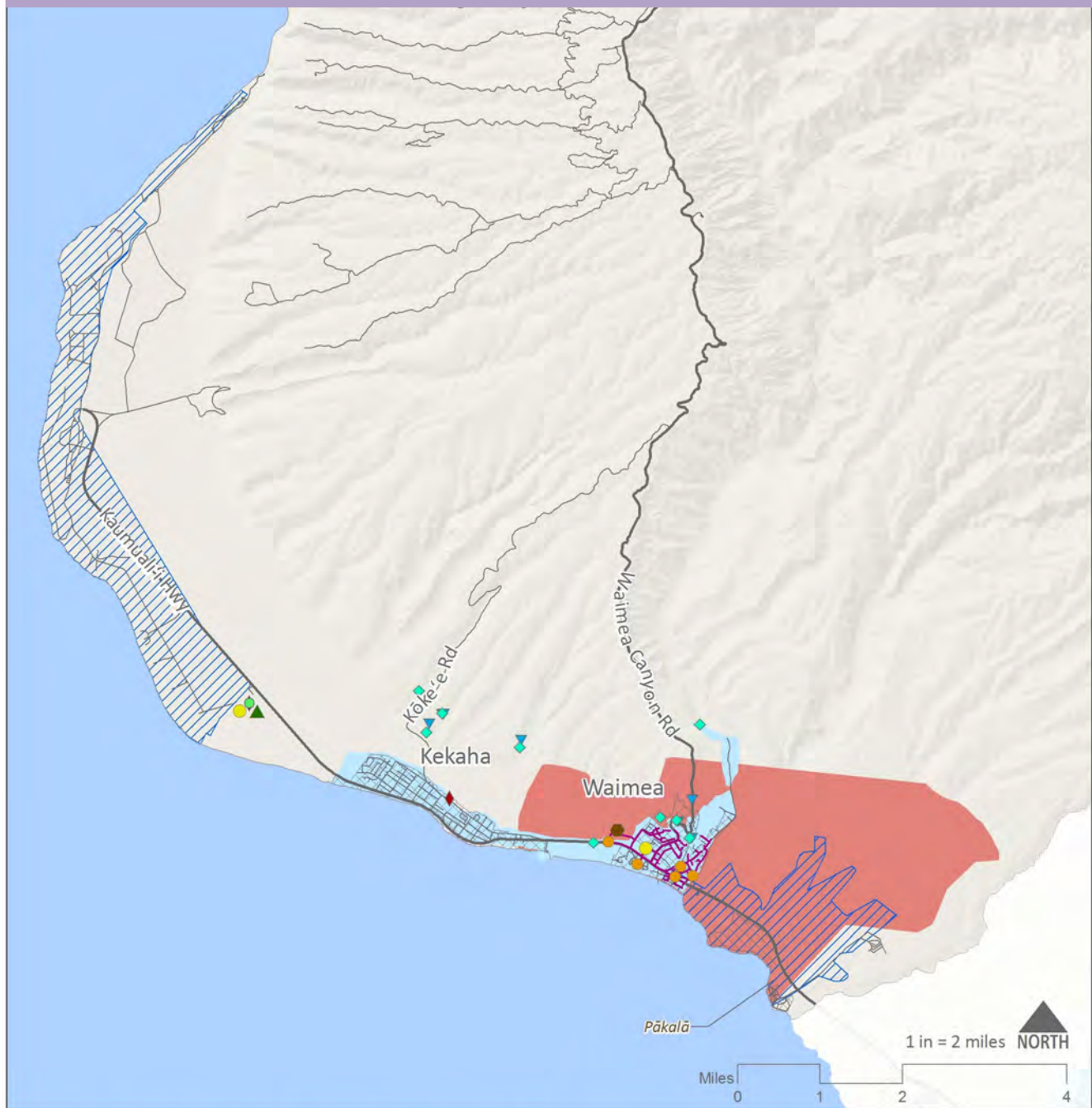
The purposes of the Infrastructure Maps are as follows:

- ▶ To depict existing systems for water, wastewater, electrical power generation, and solid waste. Facilities and service areas have been mapped using existing data sources and depict general locations that are intended to be representational, not precise.
- ▶ To be used as a planning tool in conjunction with other policy maps to help identify and prioritize infrastructure needs in existing and future growth areas.
- ▶ To be referenced in preparing Community Plans and in preparing or revising land use ordinances and rules, including but not limited to the following: revisions to the Comprehensive Zoning Ordinance or the Zoning Maps; zone change ordinances; revisions to the Special Management Area (SMA) rules or boundaries; revisions to the Subdivision Ordinance; and the preparation of new ordinances or rules.
- ▶ To serve as a guide in the review of subdivision and land use permit applications and to aid in determining infrastructure needs, but may not be used to prohibit a land use that is allowed by the Comprehensive Zoning Ordinance or by permit.

Figure 5-22. Kaua'i Island Infrastructure Map



- | | |
|--|--|
| Landfill | Private Wastewater Service Area |
| Power Plants | State Land Use District Urban Designated Lands |
| Waste Water Treatment Plant | Planning District Boundary |
| Private Water System Service Area | Major Roads |
| County Water System Service Area | Roads |
| County Waste Water System Service Area | |

Figure 5-23. Waimea-Kekaha Infrastructure Map**Solid Waste Management Facilities**

- Drop-off Recycling Center
- Refuse Transfer Station
- ▲ Green Waste Diversion Site
- ◆ Deposit Beverage Container Redemption Center

Water Facilities

- ◆ Water Pumps
- ▼ Water Tanks

Waterlines

- Waterlines
- ▨ Private Water System Service Area
- County Water System Service Area

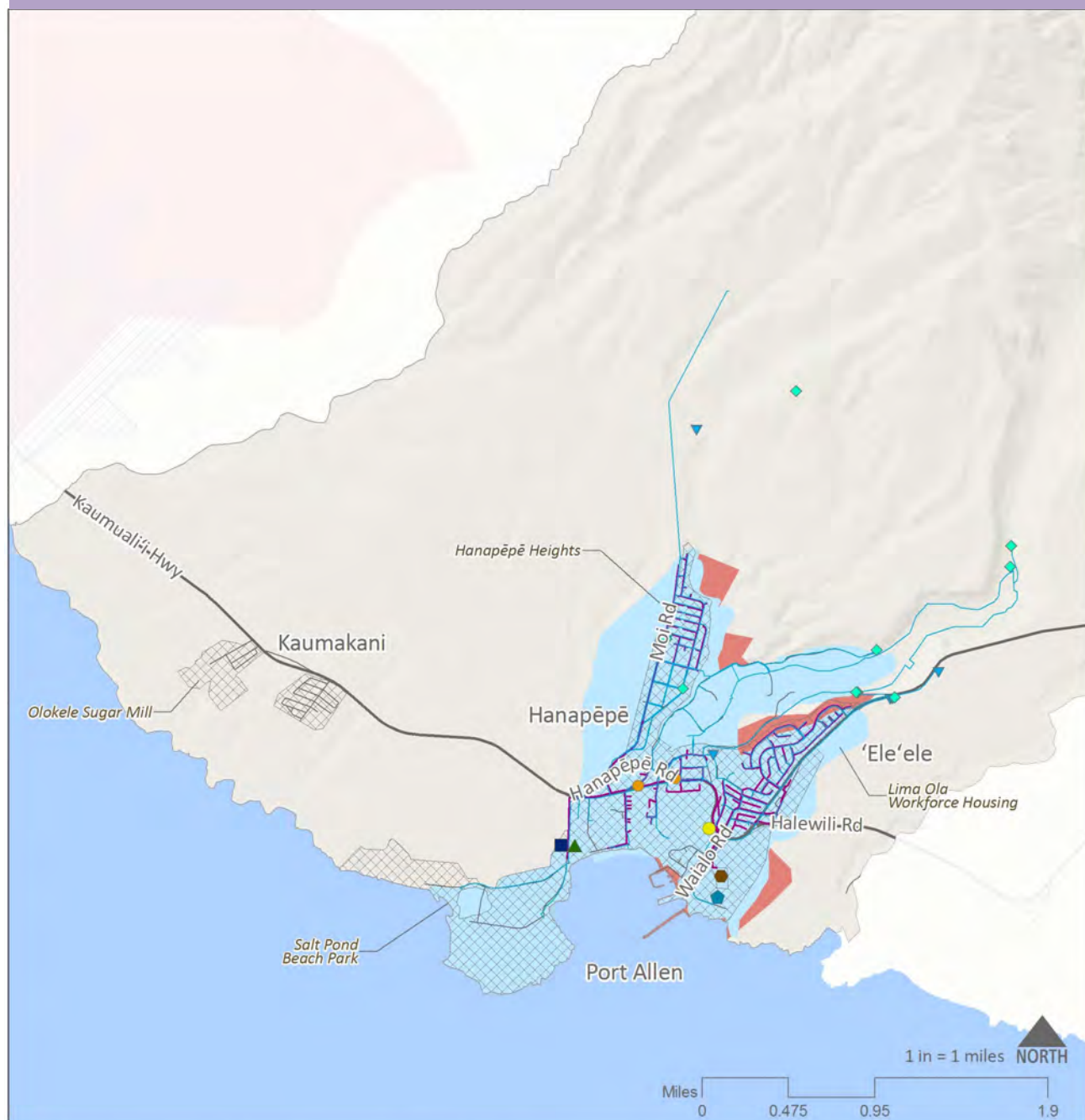
Waste Water Facilities

- Waste Water Treatment Plant
- Sewer Pump Stations
- Sewerlines
- County Waste Water System Service Area

Electric Facilities

- ◆ Power Plants
- ▨ State Land Use District Urban Designated Lands
- ▭ Planning District Boundary
- Major Roads
- Roads

Figure 5-24. Hanapēpē ‘Ele‘ele Infrastructure Map



Solid Waste Management Facilities

- Drop-off Recycling Center
- Refuse Transfer Station
- ▲ Green Waste Diversion Site
- ◆ Deposit Beverage Container Redemption Center

Water Facilities

- ◆ Water Pumps
- ▼ Water Tanks

Waterlines

- Private Water System Service Area
- County Water System Service Area

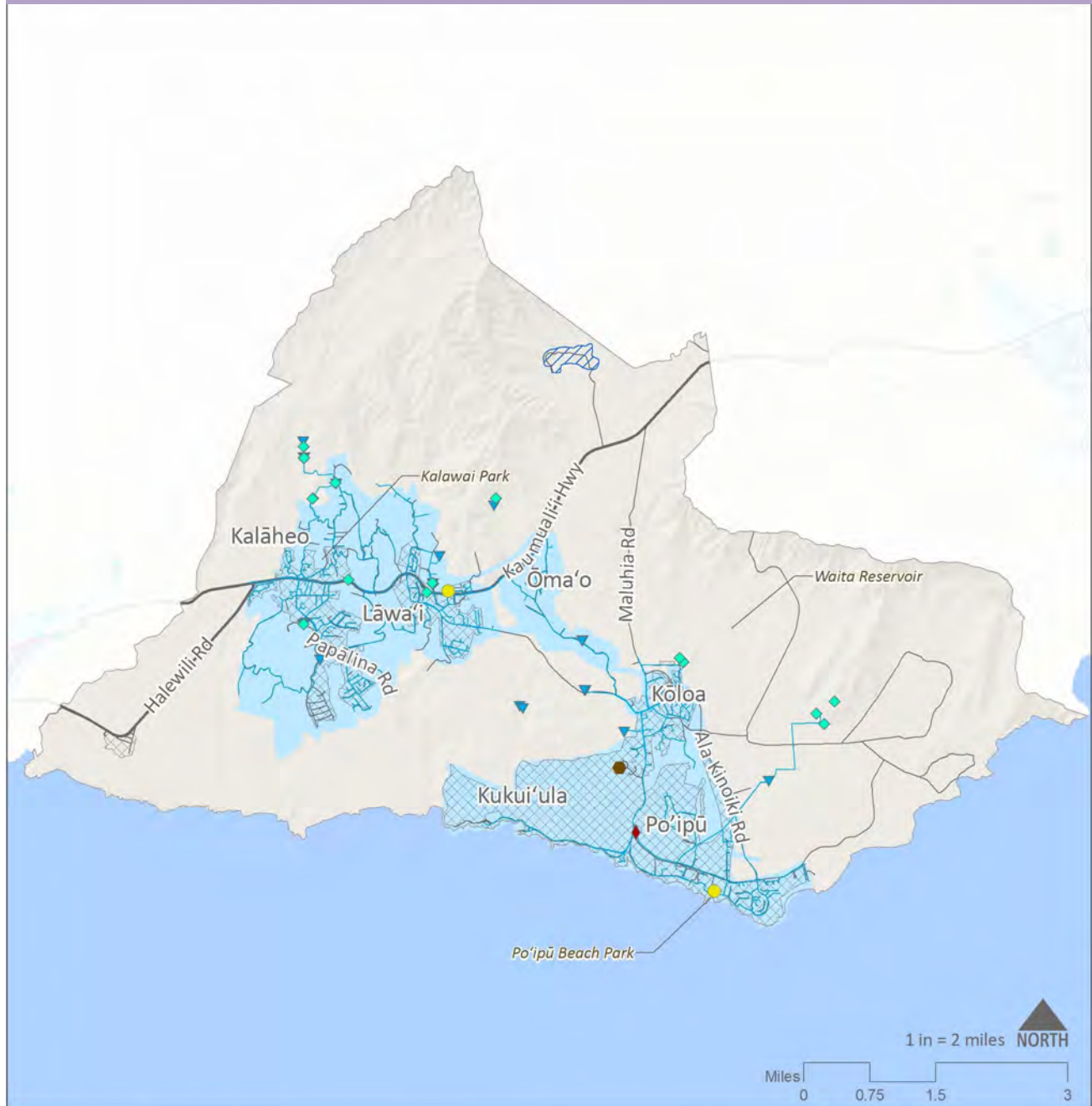
Waste Water Facilities

- Waste Water Treatment Plant
- Sewer Pump Stations
- Sewerlines
- County Waste Water System Service Area

Electric Facilities

- ◆ Power Plants
- State Land Use District Urban Designated Lands
- Planning District Boundary
- Major Roads
- Roads

Figure 5-25. South Kaua'i Infrastructure Map



Solid Waste Management Facilities

- Drop-off Recycling Center
- Refuse Transfer Station
- ▲ Green Waste Diversion Site
- ◆ Deposit Beverage Container Redemption Center

Water Facilities

- ◆ Water Pumps
- ▼ Water Tanks

Waterlines

- ▨ Private Water System Service Area
- ▨ County Water System Service Area

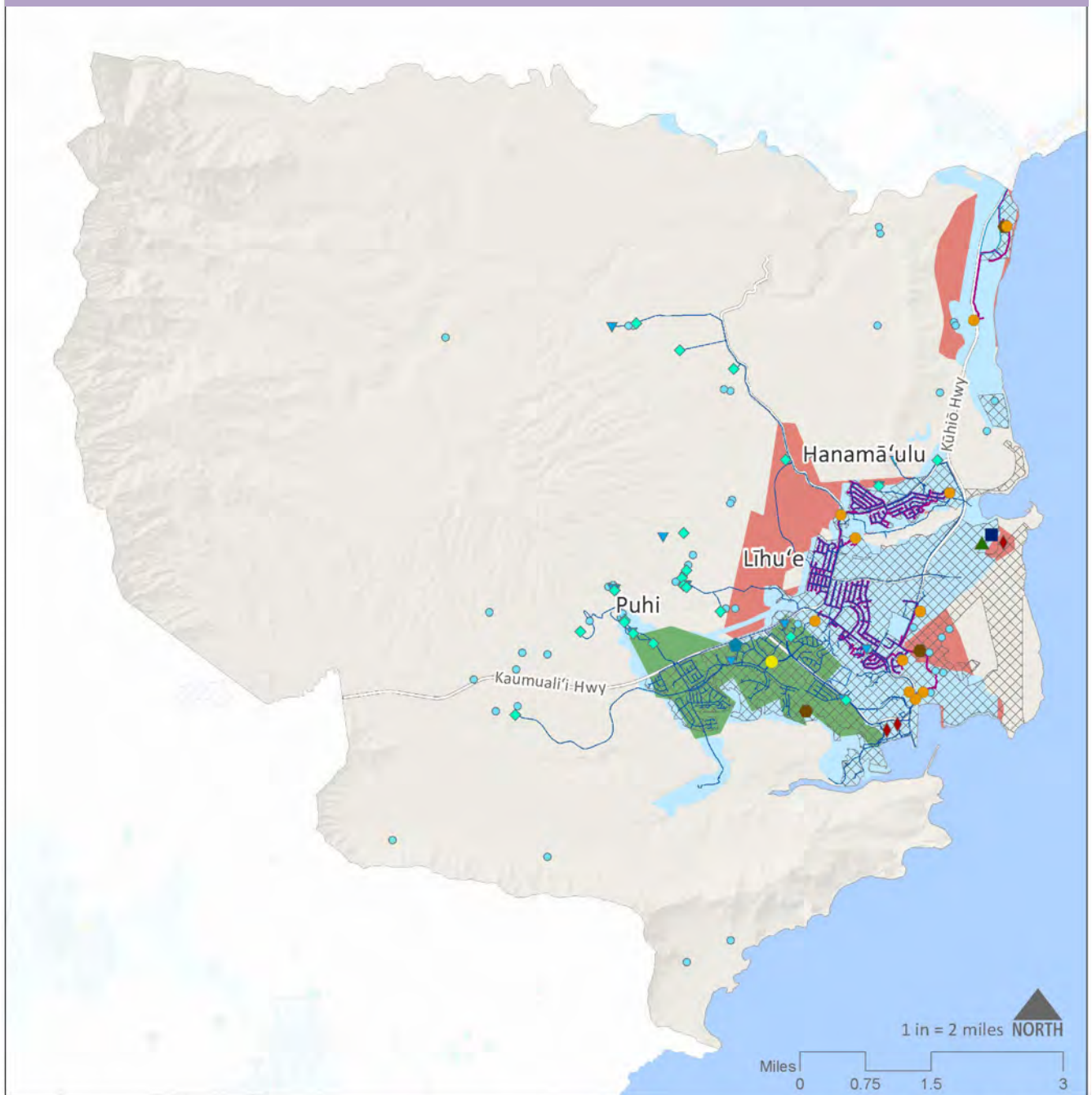
Waste Water Facilities

- Waste Water Treatment Plant
- Sewer Pump Stations
- Sewerlines
- ▨ County Waste Water System Service Area

Electric Facilities

- ◆ Power Plants
- ▨ State Land Use District Urban Designated Lands
- ▨ Planning District Boundary
- Major Roads
- Roads

Figure 5-26. Līhu'e Infrastructure Map



Solid Waste Management Facilities

- Drop-off Recycling Center
- Refuse Transfer Station
- ▲ Green Waste Diversion Site
- ♦ Deposit Beverage Container Redemption Center

Water Facilities

- ◆ Water Pumps
- Wells

▼ Water Tanks

- Waterlines
- ▨ Private Water System Service Area
- County Water System Service Area

Waste Water Facilities

- Waste Water Treatment Plant
- Sewer Pump Stations
- Sewerlines

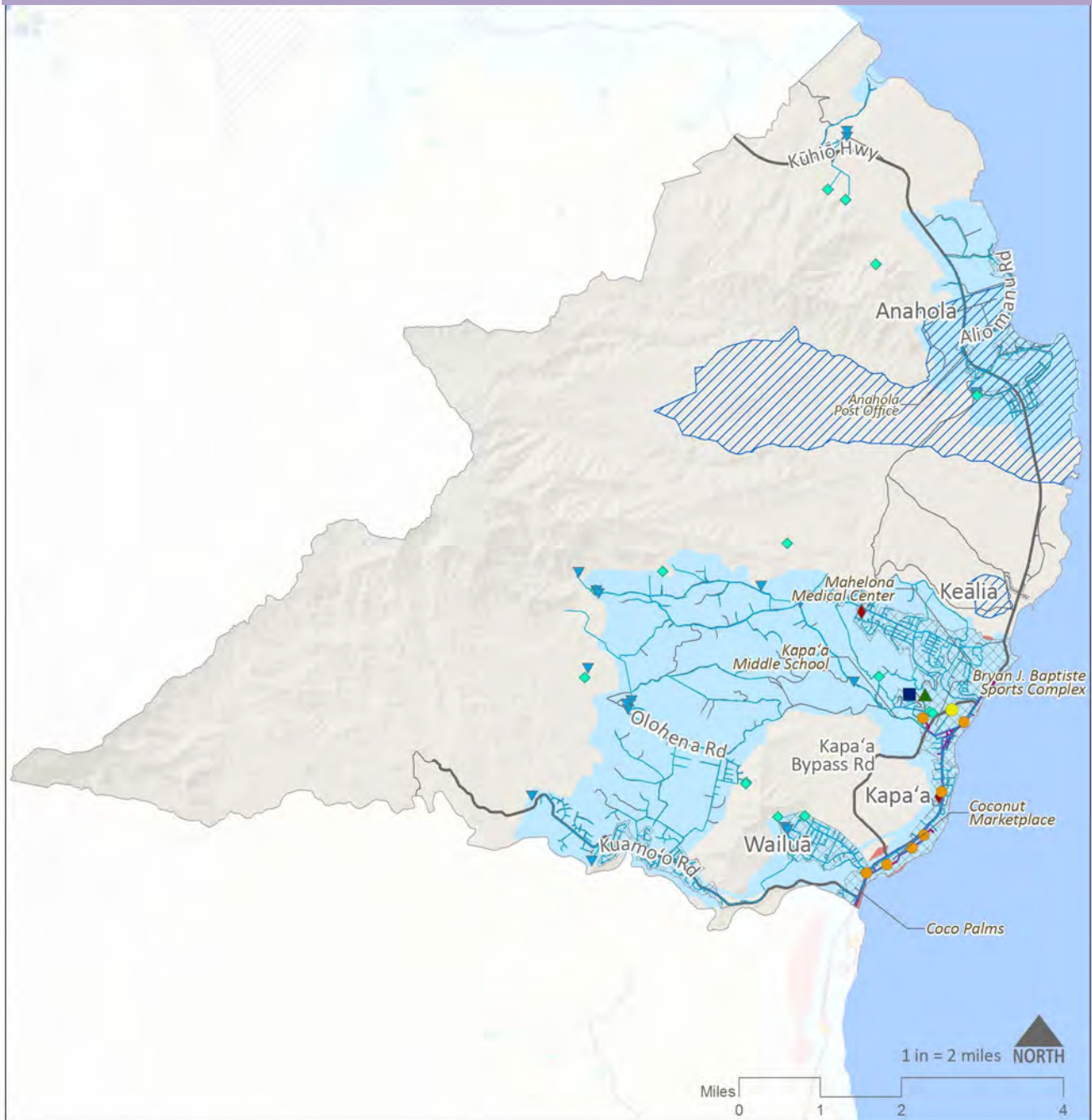
- County Waste Water System Service Area
- Private Waste Water Service Area

Electric Facilities

- ◆ Power Plants

- ▨ State Land Use District Urban Designated Lands
- Planning District Boundary
- Major Roads

Figure 5-27. East Kaua'i Infrastructure Map



Solid Waste Management Facilities

- Drop-off Recycling Center
- Refuse Transfer Station
- ▲ Green Waste Diversion Site
- ◆ Deposit Beverage Container Redemption Center

Water Facilities

- ◆ Water Pumps
- ▼ Water Tanks

Waterlines

- ▨ Private Water System Service Area
- County Water System Service Area

Waste Water Facilities

- Waste Water Treatment Plant
- Sewer Pump Stations
- Sewerlines
- County Waste Water System Service Area

Electric Facilities

- ◆ Power Plants
- ▨ State Land Use District Urban Designated Lands
- Planning District Boundary
- Major Roads
- Roads

Figure 5-28. North Shore Infrastructure Map



Solid Waste Management Facilities

- Drop-off Recycling Center
- Refuse Transfer Station
- ▲ Green Waste Diversion Site
- ◆ Deposit Beverage Container Redemption Center

Water Facilities

- ◆ Water Pumps
- ▼ Water Tanks

Waterlines

- Private Water System Service Area
- County Water System Service Area

Waste Water Facilities

- Waste Water Treatment Plant
- Sewer Pump Stations
- Sewerlines
- County Waste Water System Service Area

Electric Facilities

- ◆ Power Plants
- State Land Use District Urban Designated Lands
- Planning District Boundary
- Major Roads
- Roads

5.6 PUBLIC FACILITIES MAPS

This General Plan Public Facilities Maps are a new addition to this General Plan. The maps identify the locations of existing public facilities on Kauaʻi. These maps are intended to be used as a reference in planning public facilities and services to support future land uses and development. The Public Facilities Maps should be periodically reviewed and updated as additional data becomes available. The Public Facilities Maps are a general reference, and may not be used to determine whether adequate facilities or services exist to support or deny a proposed land use.

The Public Facilities Maps include the following information:

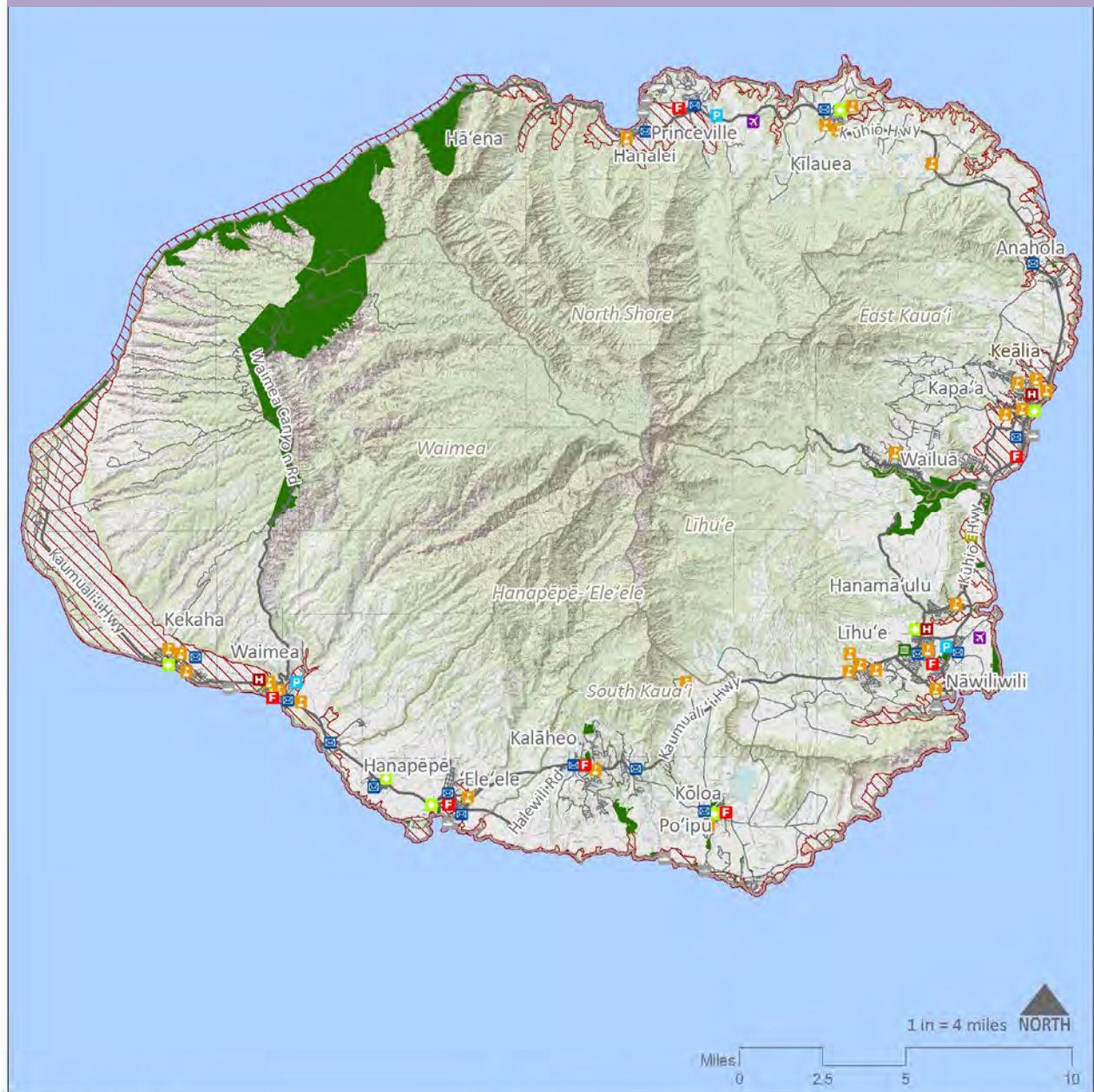
- ▶ Neighborhood Centers
- ▶ Post Offices
- ▶ Schools
- ▶ Police Stations
- ▶ Harbors
- ▶ Hospitals
- ▶ Correctional Centers
- ▶ Airports
- ▶ Fire Stations
- ▶ Parks
- ▶ Planning District Boundary
- ▶ Major Roads

Purposes of the Public Facilities Maps

The purposes of the Public Facilities Maps is as follows:

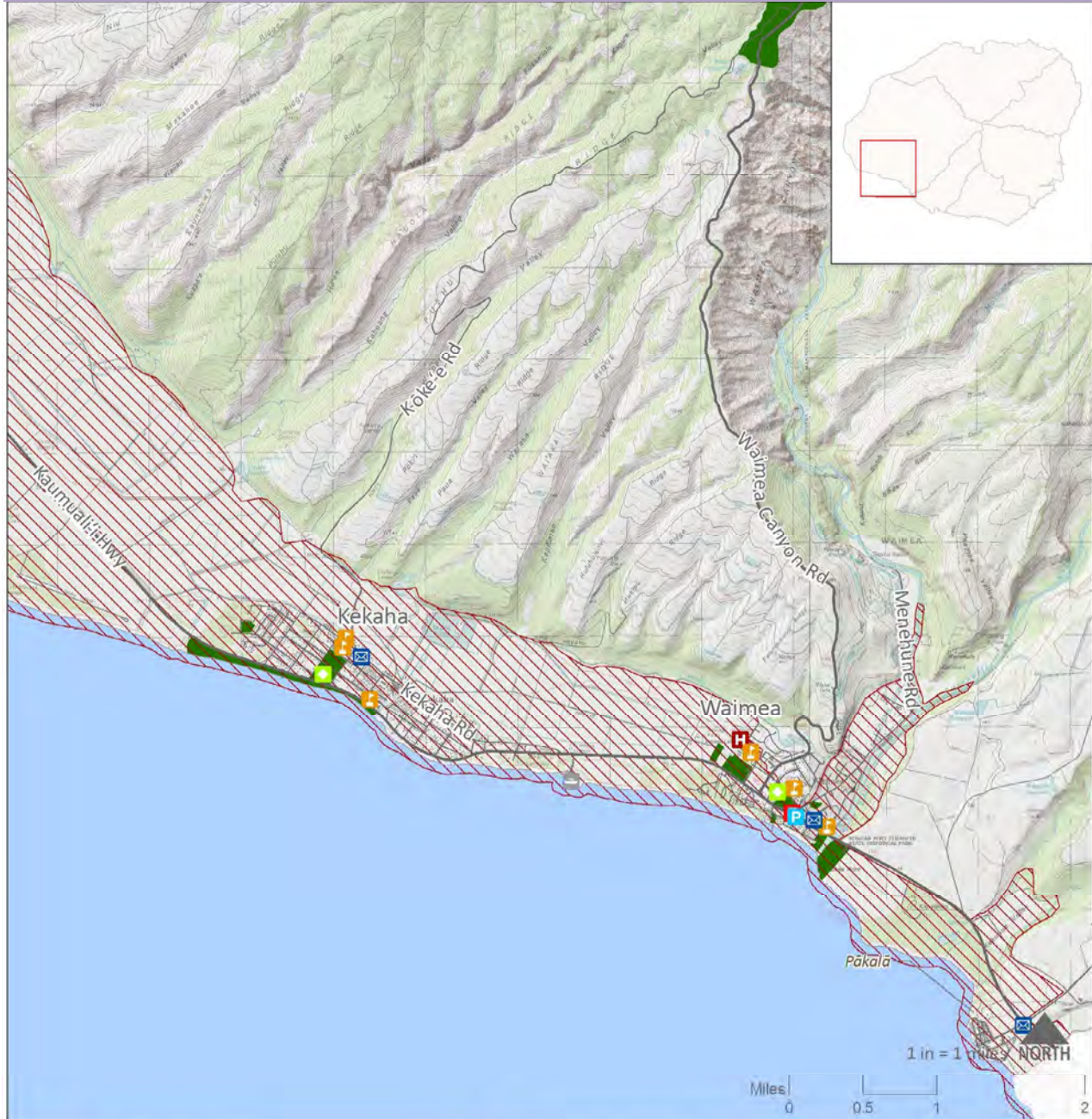
- ▶ To depict the locations of existing public facilities. These facilities have been mapped using existing data sources and depict general locations that are intended to be representational, not precise.
- ▶ To be used as a planning tool in identifying existing areas that may need additional facilities or services. They can also help ensure that future development is supported by adequate facilities.
- ▶ To be referenced in preparing Community Plans and Functional Plans.

Figure 5-29. Kaua'i Island Public Facilities Map



- | | | |
|----------------------|---------------------------------|-------|
| Neighborhood Centers | Correctional Centers | Roads |
| Post Offices | Airports | |
| Schools | Fire Stations | |
| Police Stations | Parks and Recreation | |
| Harbors | Planning District Boundary | |
| Hospitals | Extreme Tsunami Evacuation Zone | |
| Civic Centers | Major Roads | |

Figure 5-30. Waimea-Kekaha Public Facilities Map



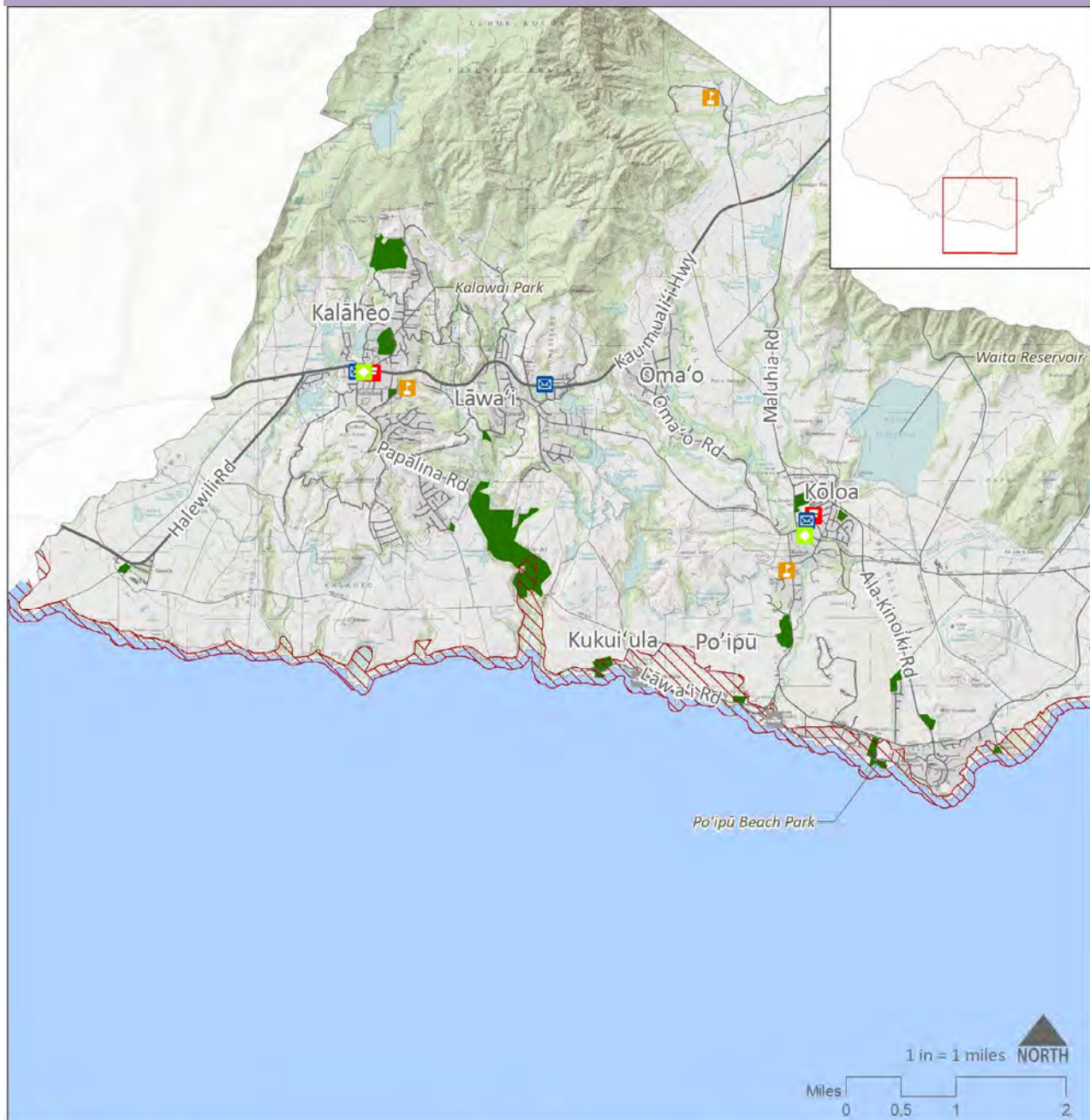
- | | | |
|----------------------|--------------------------------|-------|
| Neighborhood Centers | Correctional Centers | Roads |
| Post Offices | Airports | |
| Schools | Fire Stations | |
| Police Stations | Parks and Recreation | |
| Harbors | Planning District Boundary | |
| Hospitals | ExtremeTsunami Evacuation Zone | |
| Civic Centers | Major Roads | |

Figure 5-31. Hanapēpē-‘Ele‘ele Public Facilities Map



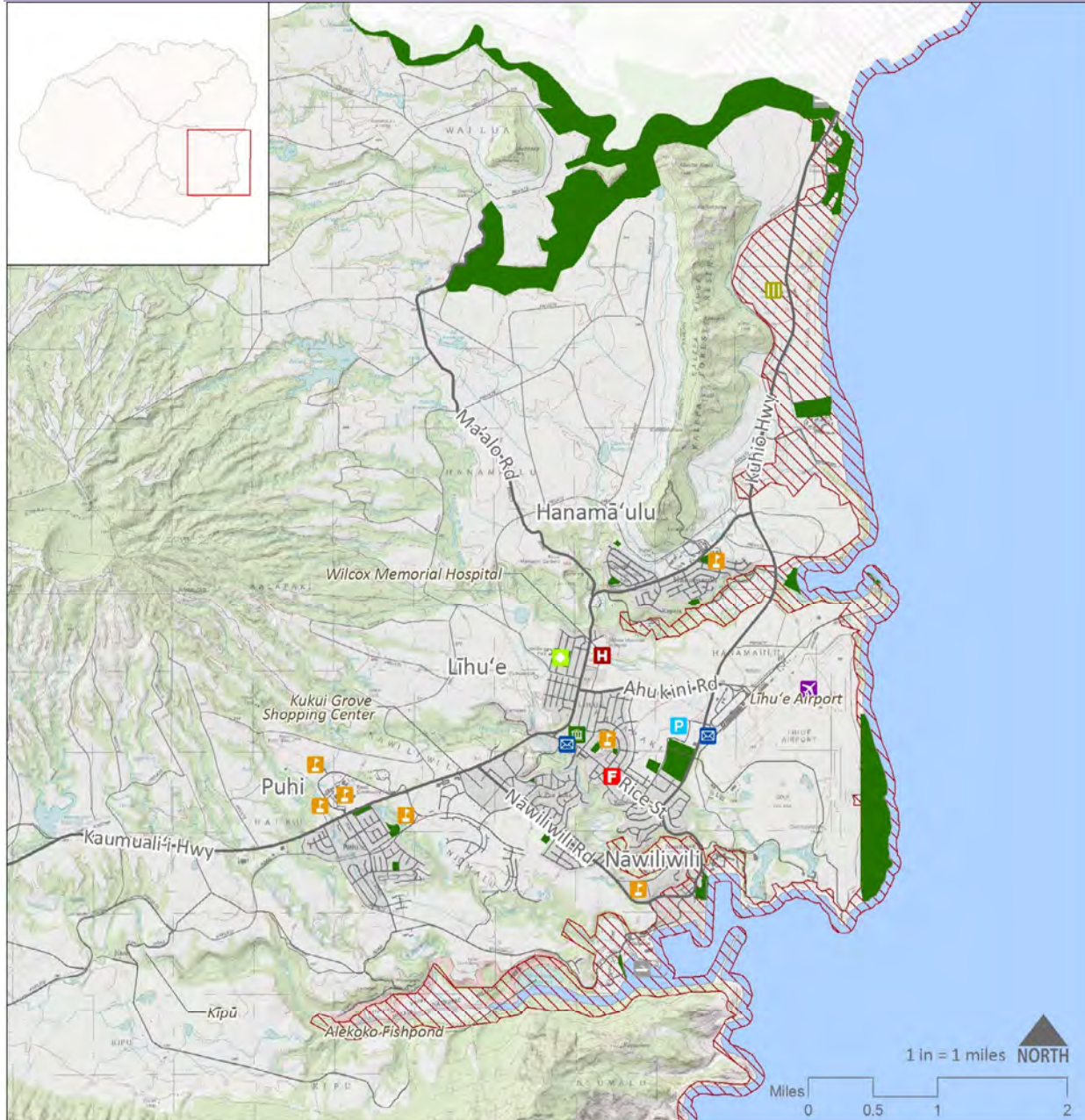
- | | | |
|----------------------|---------------------------------|-------|
| Neighborhood Centers | Correctional Centers | Roads |
| Post Offices | Airports | |
| Schools | Fire Stations | |
| Police Stations | Parks and Recreation | |
| Harbors | Planning District Boundary | |
| Hospitals | Extreme Tsunami Evacuation Zone | |
| Civic Centers | Major Roads | |

Figure 5-32. South Kaua'i Public Facilities Map



- | | | |
|----------------------|--------------------------------|-------|
| Neighborhood Centers | Correctional Centers | Roads |
| Post Offices | Airports | |
| Schools | Fire Stations | |
| Police Stations | Parks and Recreation | |
| Harbors | Planning District Boundary | |
| Hospitals | ExtremeTsunami Evacuation Zone | |
| Civic Centers | Major Roads | |

Figure 5-33. Līhu'e Public Facilities Map



- | | | |
|----------------------|--------------------------------|-------|
| Neighborhood Centers | Correctional Centers | Roads |
| Post Offices | Airports | |
| Schools | Fire Stations | |
| Police Stations | Parks and Recreation | |
| Harbors | Planning District Boundary | |
| Hospitals | ExtremeTsunami Evacuation Zone | |
| Civic Centers | Major Roads | |

Figure 5-34. East Kaua'i Public Facilities Map



- | | | |
|----------------------|---------------------------------|-------|
| Neighborhood Centers | Correctional Centers | Roads |
| Post Offices | Airports | |
| Schools | Fire Stations | |
| Police Stations | Parks and Recreation | |
| Harbors | Planning District Boundary | |
| Hospitals | Extreme Tsunami Evacuation Zone | |
| Civic Centers | Major Roads | |

Figure 5-35. North Shore Public Facilities Map



- | | | |
|----------------------|--------------------------------|-------|
| Neighborhood Centers | Correctional Centers | Roads |
| Post Offices | Airports | |
| Schools | Fire Stations | |
| Police Stations | Parks and Recreation | |
| Harbors | Planning District Boundary | |
| Hospitals | ExtremeTsunami Evacuation Zone | |
| Civic Centers | Major Roads | |

5.7 TRANSPORTATION MAPS

There are two General Plan Transportation Maps. One depicts existing and planned improvements for roadway capacity, the roadway network, and shared use paths. The second depicts proposed improvements to the transit system. Community-scale improvements such as sidewalks and bike lanes are intended to be refined and depicted in Community and Functional Plans. The Transportation Maps should be periodically reviewed and updated as additional data becomes available. The Transportation Maps are a general reference, and may not be used to determine whether adequate facilities or services exist to support or deny a proposed land use.

The following source documents were consulted to identify anticipated transportation improvements to 2035:

- ▶ *Kauaʻi Transit Feasibility Study (2016)*: KTFS
- ▶ *Kapaʻa Transportation Solutions (2015)*: KTS
- ▶ *Bike Plan Hawaiʻi (2003)*: BPH
- ▶ *South Kauaʻi Community Plan (2015)*: SKCP
- ▶ *Līhuʻe Community Plan (2015)*: LCP
- ▶ *Kīlauea Town Plan (2005)*: KTP
- ▶ *West Side Path Alternatives (2012)*: WSPA
- ▶ *North Shore Path Alternatives (2012)*: NSPA
- ▶ *Kauaʻi State Transportation Improvements Program (FY 2015-2018)*: STIP

Priority roadway capacity, network, and shared use path projects are listed in Table 5-1 and depicted on Figure 5-36. The map includes the following information, with associated sources indicated:

- ▶ Existing Roads
- ▶ Future Roads : KTS, SKCP, LCP, KTP, STIP
- ▶ Shared Use Paths (Existing and Future) : County of Kauaʻi (existing), SKCP, LCP, WSPA, NSPA, STIP
- ▶ Planning District Boundary : Hawaiʻi DBEDT (1983)
- ▶ Major Roads : Hawaiʻi Department of Transportation (2009)

Priority transit capacity projects are listed in Table 5-2 and shown on Figure 5-37. The Figure is taken from the *Draft Kauaʻi Transit Feasibility Study (2016)*.

Purpose of the Transportation Maps

The purposes of the Transportation Maps are as follows:

- ▶ To depict the locations of major anticipated improvements to Kauaʻi's transportation network during the planning horizon of General Plan. Anticipated improvements have been mapped based on available planning documents. Locations of anticipated improvements are intended to be representational, not precise.
- ▶ To be used as a planning tool in identifying areas that may need additional facilities or services. They can also help ensure that future development is supported by adequate multimodal facilities.
- ▶ To be referenced in preparing Community Plans and Functional Plans.

Table 5-1. Kauaʻi Island Transportation Roadway Map: Roadway Capacity, Network, and Shared Use Paths**IMPROVEMENTS TO EXISTING ROADS**

1. Kīlauea Road Multimodal Access Improvements to Kīlauea Lighthouse National Wildlife Refuge
2. Multimodal capacity improvements to Kawaihau Road
3. Widen the northern segment of Kapaʻa Bypass Road to two-lane and two-way from the northern end of the Bypass to the roundabout at Olohena Road
4. Operational improvements such as signalization and left turn restrictions on Kūhiō Highway from Kapaʻa Town to Kuamoʻo Road
5. Add one lane on Kūhiō Highway from southern end of Kapaʻa Bypass Road to Kuamoʻo Road
6. Extension of right turn lane on Haleilio Road at Kūhiō Highway
7. Add one lane on Kūhiō Highway from Kuamoʻo Road to Kapule Highway
8. Implementation of Līhu'e TIGER Grant Project Improvements
9. Congestion Management project on Kaumualiʻi Highway from Anonui Street to Maluhia Road
10. Multimodal capacity improvements to Poʻipū Road

NEW ROADS

11. a. New Kīlauea Entry Road; b. Kīlauea Entry Road Expansion
12. Connections between Kapaʻa Bypass Road and Neighborhoods
13. Connection between Kūhiō Highway and Kapaʻa Bypass Road
14. Connection between Kuamoʻo Road and Māʻalo Road
15. Līhu'e Mauka Route
16. Northerly Leg of the Western Access Road

SHARED USE PATHS

17. North Shore Path (alignment location and phases to be determined)
18. Completion of Ke Ala Hele Makalae from Ahihi Point to Anahola
19. Completion of Ke Ala Hele Makalae to Līhu'e
20. South Shore Path (see South Kauaʻi Community Plan)
21. West Side Path (Phase 1 Hanapēpē Town to Salt Pond and Waimea to Kekaha. Future phases and alignments to be determined)

Projects in this table are not listed in order of priority. Numbers refer to Figure 5-36. Which maps these projects geographically. Other types of projects not listed include safety (such as Safe Routes to School and intersection improvements); and system preservation (such as resurfacing and bridge replacement/repair). Other bikeways projects are noted in community plans and the Kapaʻa Transportation Solutions Plan.

Figure 5-36. Kauaʻi Island-Wide Transportation Map: Showing Roadway Capacity, Networks, Shared Use Paths, and Scenic Corridors



- Planning District Boundary
- Major Roads
- Roads
- Existing Shared Use Path
- Future Shared Use Path
- Improvements to Existing Roads
- Future Roads

Scenic Corridors

Table 5-2. Priority Transit Capacity Projects

REGIONAL TRANSIT SHUTTLES

1. Implement Regional Transit Shuttles

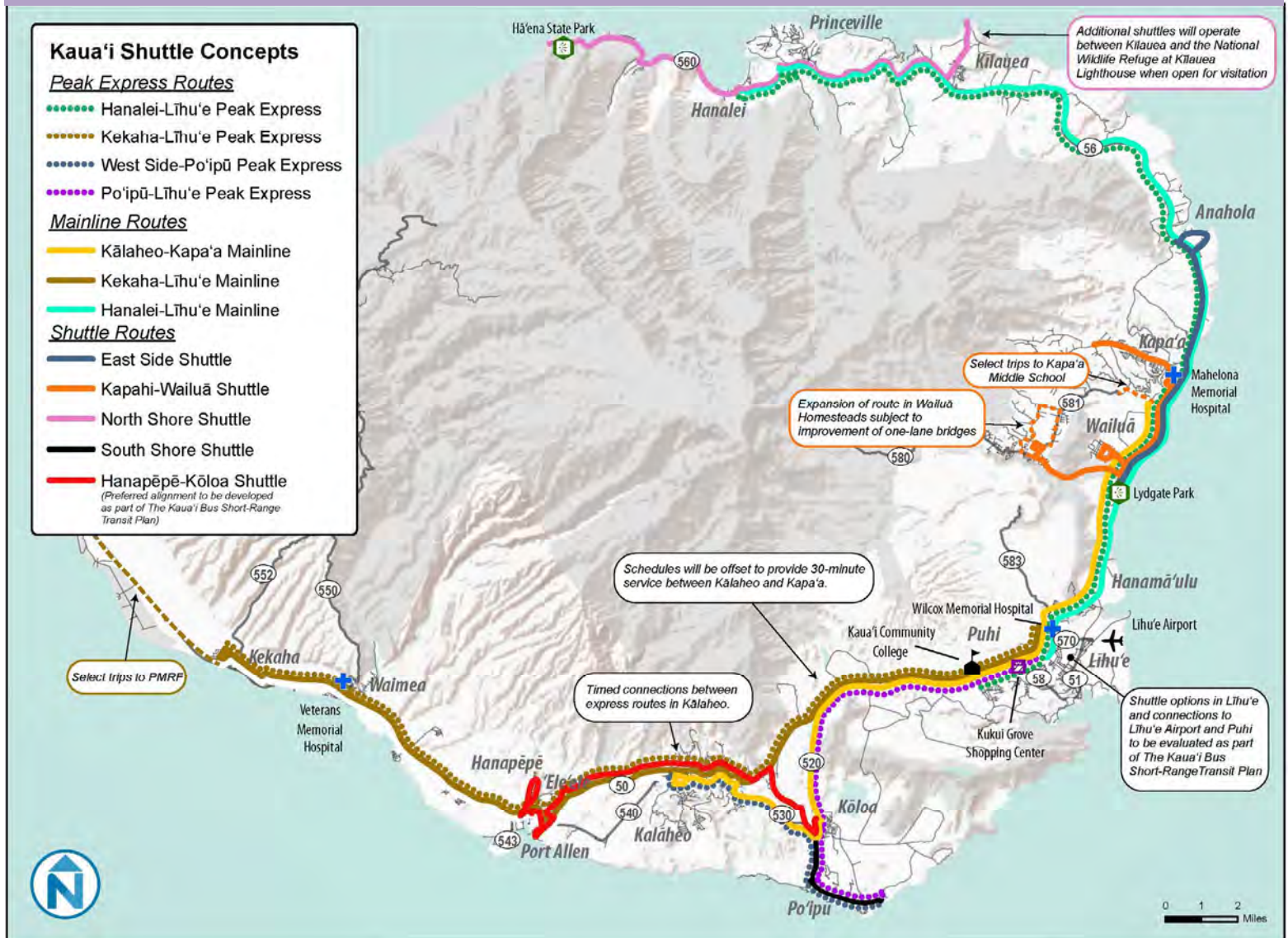
- North Shore Shuttle (Kīlauea Lighthouse to Kēʻē Beach)
- East Side Shuttle (Lydgate Park to Keālia Beach)East Side Shuttle (Lydgate Park to Keālia Beach)
- Reconfigure Wailua and Kapahi Shuttles
- Reconfigure Līhuʻe Shuttles
- Poʻipū-Kōloa Shuttle
- Hanapēpē to Kōloa Shuttle

TRANSIT MAINLINES

1. Reconfigure and expand service frequency for transit mainlines

Projects are not listed in order of priority.

Figure 5-37. Kauaʻi Island Transit Map



Source: Draft Transit Feasibility Study, Nelson\Nygaard Consulting Associates, Inc. 2016

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Image: Glass Beach, Port Allen, Hanapēpē-'Ele'ele District

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- American Planning Association. (2016). *APA Website*. <https://www.planning.org/>
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