

ONLINE VERSION

KAUAIKĀKŌU

KAUAI COUNTY GENERAL PLAN

2018 FINAL VERSION APPROVED BY THE COUNTY COUNCIL



Nāmāhōe
KAUAI COUNTY

ONLINE VERSION



Photo Credit: Imaikalani Aiu



2016 Star Advertiser



Mālama Honua—caring for the Earth—extends beyond simply caring for our physical surroundings. Mālama Honua embraces protection and balance in all things that make up our world and keep it prosperous; thus recognizing the connectedness between all things and of people as its stewards.

It is through kākou—working together—that the crews of the Polynesian Voyaging Society successfully circumnavigated the vast oceans of the world, using the wayfinding tools and knowledge of our ancestors, to inspire Mālama Honua throughout communities worldwide. Without kākou, the Voyaging Society’s vision of inspiring a healthy, vibrant, and unified world would be lost; our legacy wa’a—Hōkūle’a, Hikianalia, and Kaua’i’s very own Nāmāhoe—would never have been given Hā (the breath of life) and the continuing stories of hope and triumph shared through the successful journeys of these global voyagers would never be.

As with navigation, a direction may be set, but the path traveled is rarely straight. However, keeping an eye on the horizon and to the heavens has always allowed our Master Navigators to never lose sight of the destination. In the same way our navigators have set a course, our community has crafted the Kaua’i General Plan to guide our actions and provide a direction toward a shared vision of our island-community’s future.

Let us be confident in the course we have set, and courageous in times of storm and trouble, and look to the stories and lessons of our Hawaiian Voyagers—to kākou—in order to Mālama Honua right here on Kaua’i.

This plan is dedicated in memory of

Louie Abrams

(1952 - 2016)

Former Planning Commissioner and eternal believer in making Kaua’i a great place to live.

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KAUA'I KĀKŌU

KAUA'I COUNTY GENERAL PLAN

2018 FINAL VERSION APPROVED BY THE COUNTY COUNCIL



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Message from Mayor Bernard P. Carvalho Jr.



Aloha! The County of Kaua'i is pleased to present Kaua'i Kākou-Kaua'i County General Plan. This document charts the course for our island for the next 20 years, guiding our growth and sustainability for generations to come.

It is the responsibility of us all on Kaua'i—in every industry, moku, and community—to ensure that life here does not only benefit our own individual interests, but the overall shared vision of our island and its people.

Since 2014, when the public process began, this has been an important goal and the driving force behind our Planning Department in its mission to update the Kaua'i County General Plan. Now, after years of research and collaboration, we have a set guide in place to move us one step closer to achieving this goal.

I would like to extend a special *Mahalo* to everyone who contributed to this action-driven plan, and I celebrate this achievement together with you. Mahalo to the County's Planning Department and consultants, the members of the Citizens Advisory Committee, and our courageous community members for sharing your mana'o with us all.

As we move forward together in aloha, I see the Kaua'i County General Plan shining bright like the North Star which guides us home.

Me ke aloha pumehana,

Bernard P. Carvalho Jr.
Mayor, County of Kaua'i
2018

COUNTY COUNCIL

Mel Rapozo, Chair
 Ross Kagawa, Vice Chair
 Arthur Brun
 Mason K. Chock
 Arryl Kaneshiro
 Derek S.K. Kawakami
 JoAnn A. Yukimura

**OFFICE OF THE COUNTY CLERK**

Jade K. Fountain-Tanigawa, County Clerk
 Scott K. Sato, Deputy County Clerk

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 Fax (808) 241-6349
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Council Services Division
 4396 Rice Street, Suite 209
 Līhu'e, Kaua'i, Hawai'i 96766

February 2018

Aloha!

On behalf of the Kaua'i County Council, I would like to express the Council's appreciation to all who have made possible the completion of the Kaua'i County General Plan. The theme of the Plan, Kaua'i Kākou, represents the desires and dreams of our island's residents, business community, and government leaders, who converged together to define and implement a shared vision for our island. Like the stars that once guided the ancient Polynesian navigators to discover our beautiful islands, the Kaua'i County General Plan is our map to help us navigate Kaua'i's changing landscape and guide us into the future.

During the process, one message was clear. The people of Kaua'i desire urgency. Urgency for affordable housing, transportation improvements, economic stimulation, and major infrastructure improvements. As leaders, we need to commit to work hand-in-hand, and move forward on developing legislation to support the Plan and its vision.

Special *mahalo* and congratulations goes to the dedicated members of the Citizens Advisory Committee, who crafted the public's input into defined vision statements. The invaluable leadership by the County Planning Department and Plan Consultants to gather information through a unique, community-engaging approach, were instrumental in producing this living document that will serve as a roadmap for Kaua'i in the years to come. Lastly, thank you to the Kaua'i community for your participation in this process.

As we move forward, we extend our best wishes to Mayor Bernard P. Carvalho, Jr., his Administration, and the future leaders of Kaua'i for continuing to honor this vision for all of Kaua'i's people and future generations.

Mahalo nui loa for your participation and collaboration!



Sincerely,

MEL RAPOZO
 Council Chair, Kaua'i County Council

Bernard P. Carvalho, Jr.
Mayor



Michael A. Dahilig
Director of Planning

Wallace G. Rezentes, Jr.
Managing Director

Ka'aina S. Hull
Deputy Director of Planning

PLANNING DEPARTMENT
County of Kaua'i, State of Hawai'i

4444 Rice Street, Suite A-473, Lihue, Hawai'i 96766
TEL (808) 241-4050 FAX (808) 241-6699

March 2018

Aloha Kākou,

It was our privilege to collaborate with the community on developing Kaua'i Kākou – the County of Kaua'i's General Plan. The plan contains policies and actions that work together to ultimately achieve the following goals: that Kaua'i will be a sustainable island, a unique and beautiful place, a healthy and resilient people, and an equitable place with opportunity for all.

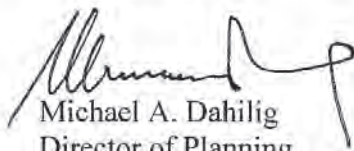
Many hands came together to pull this plan together. Mahalo nui loa to all of you who came out to varying degrees to touch this update for our General Plan. Your dedication and passion will propel the plan forward and help actualize our island's future goals.

I must thank the county hands of Ka'aina Hull, Leanora Kai'aokamālie, Marisa Valenciano, Lee Steinmetz, Alex Wong, Alan Clinton, Jodi Higuchi-Sayegusa, Michael Moule, Lyle Tabata, Jade Fountain-Tanigawa, Scott Sato, Jenelle Agas, Aida Kawamura, and Yvette Mackler who helped to navigate this document through to the destination.

Last but not least, Marie Williams – you are a rock star, and truly the binding behind this document. We all thank you for your blood, sweat, and tears being the leader on this project, and seeing it to what it is today.

It is our hope this document helps move the needle in the direction we collectively want it to go over the next 20 years. Now let the hard work of our community begin.

Aloha nui loa,


Michael A. Dahilig
Director of Planning



ORDINANCE NO. 1025BILL NO. 2666, Draft 2

**A BILL FOR AN ORDINANCE TO AMEND CHAPTER 7, ARTICLE 1,
KAUAI COUNTY CODE 1987, AS AMENDED, RELATING TO THE UPDATE
OF THE GENERAL PLAN FOR THE COUNTY OF KAUAI**

(ZA-2017-3)

BE IT ORDAINED BY THE COUNCIL OF THE COUNTY OF KAUAI, STATE OF HAWAII:

SECTION 1. Findings and Purpose. The purpose of this ordinance is to revise the General Plan for the County of Kaua'i, in accordance with County zoning authority delegated pursuant to Section 46-4, Hawai'i Revised Statutes and the Charter of the County of Kaua'i. This revision is based on the General Plan Update process conducted by the Planning Department between the years 2013 through 2018.

Further technical amendments reflecting the adoption of regional "Community" and "Town" plans subsequent to the last General Plan update are also included to provide nomenclature consistency throughout the Chapter.

SECTION 2. Chapter 7, Article 1, Kaua'i County Code 1987, as amended, is hereby amended as follows:

"Article 1. General Provisions

Sec. 7-1.1 Title.

This Chapter shall be known and may be cited as "The General Plan for the County of Kaua'i."

Sec. 7-1.2 Purpose.

(a) Pursuant to the provisions of the Charter for the County of Kaua'i, the General Plan sets forth in graphics and text, policies to govern the future physical development of the County. The General Plan is intended to improve the physical environment of the County and the health, safety, and general welfare of Kaua'i's people.

(b) The General Plan states the County's vision for Kaua'i and establishes strategies for achieving that vision. The strategies are expressed in terms of policies and implementing actions. They may be augmented and changed as new strategies are developed.

(c) The General Plan is a direction-setting, policy document. It is not intended to be regulatory. It is intended to be a guide for future amendments to land regulations and to be considered in reviewing specific zoning amendment and development applications.

(d) The vision, the maps and text policies, and the implementing actions are intended to guide County actions and decisions. In addition, the maps and text policies are intended to guide the County in specific types of actions: making revisions to land use and land development regulations, deciding on zoning changes, preparing and adopting development plans and public facility plans, and preparing and adopting capital improvement plans.

Sec. 7-1.3 Definitions.

“Charter” means the Charter of the County of Kaua‘i, as amended.

“CIP” means the Capital Improvement Program of the County of Kaua‘i, which is part of the annual budget ordinance and programs appropriations and funding for capital improvements for six (6) years and beyond.

“Comprehensive Zoning Ordinance” means the Comprehensive Zoning Ordinance of the County of Kaua‘i, Chapter 8, Kaua‘i County Code 1987, as amended.

“Council” means the Council of the County of Kaua‘i.

“Development” means any public improvement project, or any public or private project requiring a permit or approval from the Planning Department or Planning Commission.

“Development plan” means a detailed plan for a specific geographic area of the County of Kaua‘i, as defined by Sec. 14.07 of the Charter and as further defined herein. “Community Plans” or “Town Plans” are also considered Development Plans for the purposes of this chapter and other zoning-related ordinances.

“General Plan” means the General Plan for the County of Kaua‘i, including the vision, policies, implementing actions, and Land Use and [Heritage Resources] other maps.

“Implementing action” means a strategy to implement a policy, which may include recommendations for amending ordinances and rules.

“Owner” means the holders of at least seventy-five percent (75%) of the equitable and legal title of a lot.

“Planning Commission” means the Planning Commission of the County of Kaua‘i.

“Planning Department” means the Planning Department of the County of Kaua‘i.

“Planning Director” means the Director of the Planning Department of the County of Kaua‘i.

“Policy” means a statement in the General Plan policies sections intended to guide the County in achieving the vision.

“Public facility” means a building, road, pipeline, or other capital improvement that is constructed by the County of Kaua‘i in order to provide a service to the public.

“Special Development Plans” means the Special Development Plans, Chapter 10, Kaua‘i County Code 1987, as amended.

“Special Management Area Rules and Regulations” means the Special Management Area Rules and Regulations of the County of Kaua‘i, as amended.

“Subdivision Ordinance” means the Subdivision Ordinance for the County of Kaua‘i, Chapter 9, Kaua‘i County Code 1987, as amended.

“Vision” means a preferred future as described in [Chapter 2 of] the text of the General Plan.

“Zoning amendment” means a change of the zoning district boundaries in relation to a specific parcel or parcels of land.

Sec. 7-1.4 Applicability.

(a) All actions and decisions undertaken by the County Council and the County Administration, including all County departments, agencies, boards, and commissions, shall be guided by the vision statement, policies, and the implementing actions of the General Plan.

(b) Ordinances and rules that relate to the following shall be guided by the policies of the General Plan:

- (1) Development plans;
- (2) Public facility plans;

- (3) Land use policies and regulations, including but not limited to zone changes, zoning regulations, subdivision regulations, and SMA rules and regulations;
- (4) Site development and environmental regulations, such as grading and drainage regulations; and
- (5) The six (6) year Capital Improvement Program.

Sec. 7-1.5 Adoption.

(a) The plan document on file with the County Clerk entitled ["Kaua'i General Plan,"] "Kaua'i Kākou – Kaua'i County General Plan" (Planning Commission Draft approved in 2017, as amended by the Kaua'i County Council and approved in 2018, and as may be subsequently amended), including the maps and text policies, vision, and implementing actions dated as of the effective date of the ordinance codified in this Article, is hereby adopted by reference and made a part of this Article."

(b) Upon adoption of the ordinance codified in this Article, prior resolutions and ordinances relating to [the 1984] previous General Plans are superseded; provided that conditions of approval attached to General Plan amendment ordinances adopted prior to the adoption of this General Plan shall remain in effect.

Sec. 7-1.6 Administration.

The Planning Department shall administer the provisions of this Article and the General Plan in accordance with the provisions of the County Charter.

Sec. 7-1.7 Interpretation.

The Planning Director shall interpret the General Plan and the consistency of a County action or a proposed development with the General Plan, subject to the review of the Planning Commission.

Sec. 7-1.8 Review of the General Plan.

The Planning Department shall undertake a comprehensive review of the General Plan within ten (10) years of the date of adoption and shall report its findings and recommended revisions to the Planning Commission and the County Council."

SECTION 3. Severability Clause. If any provision of this Ordinance or the application thereof to any person or circumstance is held invalid, the validity of the remainder of this Ordinance and the application of such provisions to other persons or circumstances shall not be affected thereby.

SECTION 4. New material is underscored and bracketed material is deleted. In printing this Ordinance, the brackets, bracketed material, and underscoring need not be included.

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

Introduced by: /s/ MASON K. CHOCK
(By Request)

DATE OF INTRODUCTION:

September 6, 2017

Līhu'e, Kaua'i, Hawai'i

V:\BILLS\2016-2018 TERM\General Plan Update ZA Bill No 2666 Draft 2 JA_ct.doc

CERTIFICATE OF THE COUNTY CLERK

I hereby certify that heretofore attached is a true and correct copy of Bill No. 2666, Draft 2, which was adopted on second and final reading by the Council of the County of Kaua'i at its meeting held on February 7, 2018 by the following vote:

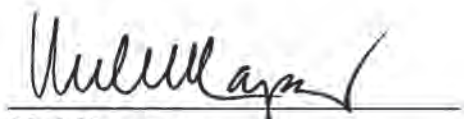
FOR ADOPTION:	Brun, Chock, Kagawa, Kaneshiro, Kawakami, Rapozo	TOTAL - 6,
AGAINST ADOPTION:	Yukimura	TOTAL - 1,
EXCUSED & NOT VOTING:	None	TOTAL - 0,
RECUSED & NOT VOTING:	None	TOTAL - 0.

Līhu'e, Hawai'i
March 12, 2018



Jade K. Fountain-Tanigawa
County Clerk, County of Kaua'i

ATTEST:




Mel Rapozo
Chairman & Presiding Officer

DATE OF TRANSMITTAL TO MAYOR:

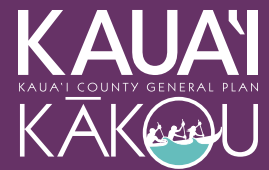
March 12, 2018

Approved this 15th day of
March, 2018.



Bernard P. Carvalho, Jr.,
Mayor
County of Kaua'i

ACKNOWLEDGEMENTS



Citizen Advisory Committee

Bill Arakaki
 Kurt Bosshard
 Bev Brody
 Helen Cox
 Luke Evslin
 Robert Farias, Sr.
 Randall Francisco
 Laurie Ho
 Brenda Jose
 Sue Kanoho
 Cammie Matsumoto
 Mark Oyama
 Gary Pacheco
 Barbara Robeson
 Tom Shigemoto
 Stacy Sproat-Beck
 Susan Tai Kaneko

County Council

Mel Rapozo, Council Chair
 Ross Kagawa, Council Vice Chair
 Mason K. Chock, Planning Committee Chair
 Arthur Brun
 Arryl Kaneshiro
 Derek S.K. Kawakami
 JoAnn A. Yukimura
 Gary L. Hooser (former)
 KipuKai Kualii'i (former)

Planning Commission

Kimo Keawe (Chair)
 Louis Abrams
 Kanoë Ahuna
 Donna Apisa
 Roy Ho
 Wayne Katayama
 Wade Lord
 Sean Mahoney
 Glenda Nogami-Streufert

Mayor's Office

Mayor Bernard P. Carvalho, Jr.
 Managing Director Wallace Rezentes, Jr.
 Managing Director Nadine Nakamura (former)
 Sarah Blane, Chief of Staff

Planning Department

Michael Dahilig, Director
 Ka'aina Hull, Deputy Planning Director
 Marie Williams, Planner
 Leanora Ka'iaokamālie, Planner
 Marisa Valenciano, Planner
 Lee Steinmetz, Transportation Planner
 Alex Wong, Planner
 Alan Clinton, Project Assistant

Office of the County Clerk, Council Services Division

Jade K. Fountain-Tanigawa, County Clerk
 Scott K. Sato, Deputy County Clerk
 Jenelle Agas, Legislative Assistant
 Council Services Staff

County Agency Partners

Elderly Affairs
 County Attorneys
 Economic Development
 Emergency Management (formerly Civil Defense)
 Fire
 Housing
 Liquor Control
 Parks & Recreation

Police
 Public Works
 Engineering Building
 Wastewater
 Solid Waste
 Transportation
 Water

State Agency Partners

Department of Land and Natural Resources
 Department of Health
 Department of Transportation
 Office of Hawaiian Affairs

Consultants

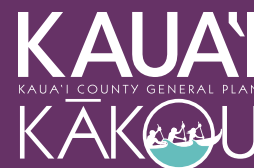
SSFM International, Inc. (Prime)
 Charlier Associates, Inc.
 Collaborative Economics
 Economic & Planning Systems
 Marine & Coastal Solutions International, Inc.
 Opticos Design, Inc.
 PBR Hawai'i
 Raimi & Associates
 SMS Research

University of Hawai'i Sea Grant College Program

Ruby Pap, Coastal Land Use Extension Agent

Unless otherwise noted, all photos provided by Planning Department staff.

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/>.

Ahupua'a means a 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 (pua'a), or because a pig or other tribute was laid on the altar as tax to the Chief. The boundaries of an ahupua'a is based on the region's watersheds.

Ali'i means a chief.

Aloha means affection, compassion for others.

'Alaea Pa'akai means sea salt enriched with minerals.

'Āina means land, earth.

'Āina Ho'opulapula means homesteading lands.

Heiau means a Native Hawaiian place of worship, shrine; some heiau were elaborately constructed stone platforms, others simple earth terraces.

Hoa 'Āina means tenant or caretaker, as on a kuleana.

Iwi means bone; core (as of a speech). The bones of the dead were considered the most cherished possession and hidden.

Ka Po'e Kahiko means People of Old.

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

Kama'āina means a Native-born, one born in a place, host.

Kanaka Maoli o Kaua'i means a Native Hawaiian of Kaua'i.

Kapu means forbidden, sacred.

Keiki means a child or children.

Kīpuka means a variation or change of form (puka, hole), as a calm place in a high sea, deep place in a shoal, opening in a forest, openings in cloud formations, and especially a clear place or oasis within a lava bed where there may be vegetation.

Konohiki means the headman of an ahupua'a land division under the chief; land or fishing rights under control of the konohiki; such rights are sometimes called konohiki rights.

Kuleana means right, privilege, concern, responsibility.

Kūpuna means elders.

Lo'i means an irrigated terrace, especially for taro, but also for rice; paddy.

Lo'i kalo means a taro (*Colocasia esculenta*) terrace.

Lōkahi means collaboration or teamwork, unity, agreement.

Māhele means a division, piece, department, category, portion, or land division.

Maka'āinana means people that attend the land.

Makai means toward the ocean.

Mālama 'Āina means caring for the land.

Mana means supernatural or divine power; a powerful nation, authority; privilege.

Mana'o means a thought or belief.

Mauka means inland or toward the upland.

Moku means a traditional land division representing a district or section typically encompassing several ahupua'a. Kaua'i's moku include Puna, Kona, Ko'olau, Halele'a, Nāpali, and Ni'ihau.

Mokupuni means island.

Nā Kānaka Maoli o Kaua'i means Native Hawaiians of Kaua'i and is the plural of Kanaka Maoli o Kaua'i.

'Ohana means a family, relative, kin group.

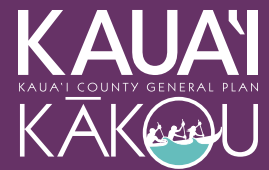
'Ōlelo means language or speech.

Pali means cliff.

Paniolo means cowboy.

Wahi Pana means legendary place.

ACRONYMS AND ABBREVIATIONS

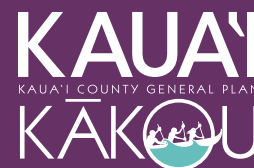


The following list, in alphabetical order, provides the acronyms, abbreviations, and their corresponding definitions used throughout this document.

- ACS** American Community Survey
- ADA** Americans with Disabilities Act
- ADU** Additional Dwelling Unit
- ADVC** Average Daily Visitor Census
- AIS** Archaeological Inventory Study
- APA** Archaeological Planning Association
- B&B** Bed & Breakfast
- BFE** Base Flood Elevation
- BPH** Bike Plan Hawai'i
- CAC** Citizen Advisory Committee
- CDC** Centers for Disease Control
- CDP** Census Designated Place
- CEDS** Comprehensive Economic Development Strategy
- CHMP** Commercial Harbors Master Plan
- CIP** Capital Improvement Program
- CPTED** Crime Prevention through Environmental Design
- CWRM** Commission on Water Resource Management
- CZO** Comprehensive Zoning Ordinance
- DBC** Deposit Beverage Container
- DBEDT** Department of Business, Economic Development, and Tourism
- DHHL** Department of Hawaiian Home Lands
- DLNR** Department of Land and Natural Resources
- DOBOR** Division of Boating and Recreation
- DOCARE** Division of Conservation and Resources Enforcement
- DOE** Department of Education
- DOFAW** Division of Forestry and Wildlife
- DOH** Department of Health
- DOW** Department of Water
- DPW** Department of Public Works
- DRR** Disaster Risk Reduction
- EA** Environmental Assessment
- EIS** Environmental Impact Statement
- EPA** Environmental Protection Agency
- FEMA** Federal Emergency Management Agency
- FIRM** Flood Insurance Rate Map
- GE** Genetically Engineered
- GET** General Excise Tax
- GP** General Plan
- GHG** Greenhouse Gas
- GIS** Geographic Information System
- GMO** Genetically Modified Organisms
- gpd** Gallons Per Day
- gwh** Gigawatt Hour
- Hazmat** Hazardous Materials
- HEAL** Healthy Eating, Active Living
- HDOT** Hawai'i Department of Transportation
- HHPS** Hawai'i Housing Planning Study
- HHARP** Hawai'i Hazards Awareness and Resilience Program
- HiAP** Health in All Policies
- HOME** Home Investment Partnership Program
- HTA** Hawai'i Tourism Authority
- HUD** U.S. Department of Housing and Urban Development
- IAL** Important Agricultural Lands
- ICAC** Interagency Climate Adaptation Committee
- ICAP** Island Climate Adaptation Policy
- IFS** Instream Flow Standards

IPCC Intergovernmental Panel on Climate Change	NAICS North American Industry Classification System
ISWMP Integrated Solid Waste Management Plan	NIMS National Incident Management System
ITS Intelligent Transportation System	NOAA National Oceanic and Atmospheric Administration
IWS Individual Wastewater Systems	NSPA North Shore Path Alternatives
KCC Kaua'i Community College	OCCL Office of Conservation and Coastal Lands
KCHA Kaua'i County Housing Agency	OTD Offer to Dedicate
KCHII Kaua'i Community Health Improvement Initiative	PASH Public Access Shoreline Hawai'i
KEDB Kaua'i Economic Development Board	PDR Purchase of Development Rights
KEMA Kaua'i Emergency Management Agency (formerly Civil Defense)	PHEV Plug-in Hybrid Electric Vehicle
KESP Kaua'i Energy Sustainability Plan	PMRF Pacific Missile Range Facility
KESRP Kaua'i Endangered Seabird Recovery Project	PTSA Parent Teacher Student Association
KHPRC Kaua'i Historic Preservation Review Commission	R&D Research & Development
KIUC Kaua'i Island Utility Cooperative	RPS Renewable Performance Standards
KPAA Kaua'i Planning and Action Alliance	SHPD State Historic Preservation Division
KTP Kīlauea Town Plan	SKCP South Kaua'i Community Plan
KTS Kapa'a Transportation Solutions Study	SLR Sea Level Rise
KTSP Kaua'i Tourism Strategic Plan 2016 - 2018 Update	SRTS Safe Routes to School
KVB Kaua'i Visitors Bureau	SMA Special Management Area
KWA Kaua'i Watershed Alliance	SNAP Supplemental Nutrition Assistance Program
LCP Līhu'e Community Plan	SOV Single Occupancy Vehicle
LESP Land Evaluation and Site Assessment	SPA Special Planning Area
LGBTQ Lesbian-Gay-Bisexual-Transgender-Queer	TAM Technical Assistance Memorandum
LOS Length of Stay	TDR Transfer of Development Rights
LRTP Long Range Transportation Plan	TVR Transient Vacation Rental
MGD Million Gallons per Day	TVU Transient Vacation Unit
MLTP Multimodal Land Transportation Plan	UDP Urban Design Plan
MMA Major Market Area	USDA United States Department of Agriculture
MMT CO2EQ Million Metric Tons of Greenhouse Gas Emissions	USGS United States Geological Survey
	VDA Visitor Destination Area
	VMT Vehicle Miles Traveled
	WSPA West Side Path Alternatives

GLOSSARY OF TERMS



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

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

Built Environment means all physical parts of our communities, such as buildings, streets, infrastructure, and parks.

Community Plan means 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.

Cottage Industry means a business or manufacturing activity carried on in a person's home.

Design Standards means 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.

Entitlement means an approved permit issued by the County of Kaua'i to use or develop land. Includes subdivision approval, zoning, variance, special use, and PDU permits.

Food Miles Travelled means the distance food travels from where it is grown to where it is consumed.

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.

Kuleana Rights means allodial titles to Hoā ‘Āina for their own (fee simple) lands, house lots, and certain privileges, including access from the mountains to the shore to collect resources granted by The Kuleana Act of the Māhele (December 21, 1849) also referred to as the “Kuleana Act of 1850.”¹ In 2012 the Hawai‘i Supreme Court reaffirmed the viability of Kuleana rights in the present day.²

Landscape Guidelines means 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.

The Māhele (also referred to as The Great Māhele) means the process, proposed by King Kamehameha III, of redistributing of Hawaiian land to guarantee that Hawaiian people would not lose their tenured land as a result of the Alien Land Ownership Act of 1850, which allowed foreign land ownership in order to motivate capital and labor.³

Makerspaces means collaborative shared spaces where people gather to create, invent, and learn using technology, hardware, and tools.

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

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

Provisional Area means an area on the Land Use Map to be defined and designated via a future Community Planning process due to the sensitivity of its potential regional impact. The regional Community Planning policy, once adopted by ordinance, is considered consistent with this plan.

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 Kaua‘i Emergency Management Agency (KEMA). These areas are typically a minimum of 100 feet away from inland waterways and marinas connected to the ocean.

Urban Edge Boundary means a regional boundary intended to limit urban sprawl. It defines where higher density urban development should be contained. Areas outside the Urban Edge Boundary are intended for lower density land uses such as open, conservation, and agriculture.

Walkshed means a quarter- to a half-mile radius walking distance or a comfortable walking distance between locations.

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

1 *Hoakalei Cultural Foundation Website 2014.*

2 *Opinion of the Court by Nakayama, Acting C.J., Supreme Court of the State of Hawai‘i, April 27, 2012; Hawai‘i Reporter April 2012.*

3 *Chinen, JJ The Great Māhele, 1958; HawaiiHistory.org 2017).*

FIGURES

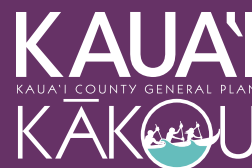


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The appendices are not controlling and are meant only as a courtesy guide.

INTRODUCTION

KAUAI
KAUAI COUNTY GENERAL PLAN
KAKOU



From top left: Hanalei taro fields, North Shore District; Brennecke's Beach, South Kaua'i District; Kaua'i paddlers; Traffic on Kūhiō Highway near Kapa'a, East Kaua'i District.

Kaua'i is at a Crossroads

Kaua'i'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, throughout the General Plan's public process, many expressed that "times are tougher than ever" and that quality of life is burdened by Kaua'i's unresolved issues. Voices in the community have expressed frustration towards previous plans that have not been implemented, and towards instances of deferred action on the part of government. Kaua'i remains vulnerable to overdependence on tourism while the challenges of traffic and housing impact everyone. Our rural infrastructure, aging and with limited capacity, appears to be at a tipping point.

There are needs, sometimes 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.

These threats have cast pessimism over whether Kaua'i's treasured identity can be preserved. It's clear the island is at a crossroads on an array of issues. Many attribute this sense of vulnerability to a common source: growth.

Growth is Happening Whether We Like It or Not

The 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. However, a recurring theme was the desire to limit growth even though recent population growth has exceeded the 2000 General Plan's projections. Our island's growth continues regardless of the desire to see it lessen.

However, 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 have suggested legislating policies like limiting family size or restricting the right to travel to Kaua'i, but such methods of population control are unconstitutional. Growth is projected to continue to increase throughout the next twenty years at an approximate rate of one percent a year. Both natural increase and in-migration cause growth, but the data also reveals a large out-migration of those born and raised here.

Today, Kaua'i is at a juncture where we can either adequately plan for a future that can accommodate those who were born and raised on the island, or we can continue to see the efflux of our kama'āina leaving for a more feasible life away from home.

When faced with this dilemma, the community has shown a strong desire to implement the necessary actions to ensure that the future of Kaua'i will provide opportunities for today's keiki. Therefore, the General Plan accepts this projected growth as a timely opportunity to cultivate collaboration and positive change. In this light, the challenge is to ensure growth benefits local residents and also addresses today's pressing concerns.

One such concern is Kaua'i's housing crisis. Approximately 9,000 homes are needed by the year 2035 (see Appendix C). The ability of our keiki to pursue a livelihood at home will depend on our ability to adequately address and correct the decline of available and affordable housing. To further complicate matters, any home that is built on Kaua'i can be bought and sold on the global market. These competitive forces often outpace the needs of local residents who continue to become increasingly disenfranchised over time.

The Urgency of Planning for Kaua'i's Future

A trend reversal in the type of growth our island sees will largely depend on the outcome and implementation of plans like this one. The General Plan is a call to arms, making the tough decisions to steer us on the right path. But collective agreement to make hard choices relies on accurately representing the community tenor and ensuring solutions have buy-in. Therefore, the public process placed great effort on "listening" rather than "telling."

Democracy relies on diverse views and respectful discourse, and the General Plan follows in that tradition. At the beginning of the process, many

were apprehensive about future change. However, the dissemination of baseline data about current conditions and trends, derived from a series of technical studies, built 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-ups, surveys, visioning workshops, classroom lectures, contests, and internet outreach (see Appendix B). The County Administration convened a Citizen Advisory Committee (CAC) that helped test presumptions and policies. Keiki, college students, large landowners, and agencies were all engaged. In short, the mana'o of everyone with a stake in Kaua'i's future was sought and welcomed.

Upon this foundation, the General Plan sets in place a vision, policies, objectives and actions to guide County decision-making and partnership efforts over the long term. It describes how we will manage projected growth while preserving our most important resources, places, and qualities.

A Vision Grounded in Reality

Communities concurred that the 2000 General Plan's vision was still relevant. But they also noted where accomplishments fell short of the vision, things that need "fixing," and the failure to work on weaknesses. Faced with this dilemma, updating the General Plan was layered with questions of what is appropriate to change, to emphasize, and to prioritize.

It was agreed upon that the General Plan should create clear policy, measures of progress, and a system for evaluation and accountability. As a result, the General Plan identifies 19 key policies to guide growth and includes a discussion of each policy's rationale and intended outcomes. An actions chapter, tied to the policies, is added along with an expanded implementation chapter. With these changes, the General Plan will continue to serve as the County's premier document in managing growth and providing guideposts for the future.

Kaua'i Kākou: Moving Forward Together

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

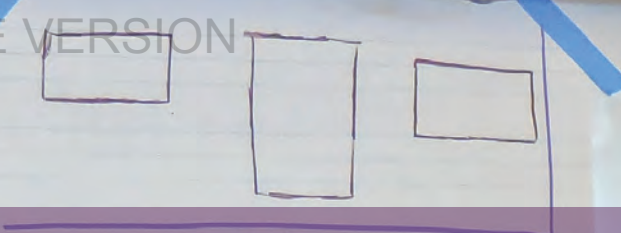


Cliffs along Kaua'i's coastline

The spirit of aloha imbues our rural lifestyle and spiritual connection to the land and ocean.

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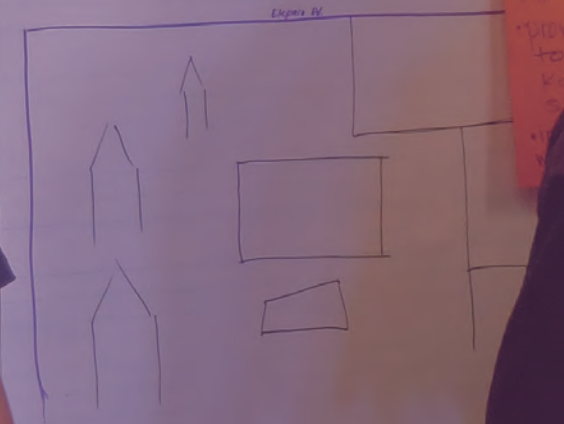
Place
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Waimea

char
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- Cou
- E



- Break down / re
- improve fac
- Create civic
- provide



Kaunaloa Hwy

KAUAI
KAUAI COUNTY GENERAL PLAN
KAKOU

Country
Menehune
2015



They Should Rebuild the trail from Eke to

- Build parking lots at the bus stop heads out to reduce riders from parking into area

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

1.1.1 GENERAL PLAN PURPOSE

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, meant to take place every ten years, last occurred in 1982 and 2000. The update of the General Plan also presents the opportunity to look at the County as a whole and make consensus-based decisions about issues and opportunities pertaining to growth.

As a direction-setting document, the General Plan is not regulatory in the sense of a zoning code or other

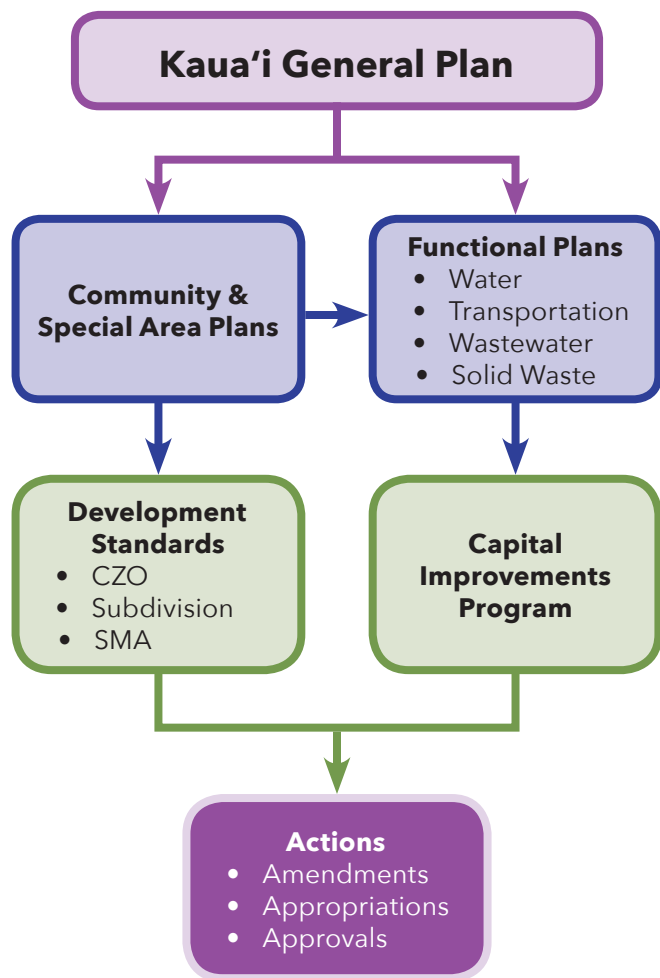
land use entitlement. The policies guide County decision-making by mapping land use patterns, describing what type of development is desirable, and by setting high-level priorities for infrastructure and programs. This will impact development code revisions, district and zone amendments, discretionary project approvals, and capital projects planning.

The General Plan covers six planning districts on the Island of Kauaʻi: North Shore, East Kauaʻi, Līhuʻe, South Kauaʻi, Hanapēpē-ʻEleʻele, and Waimea-Kekaha. 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.

1.1.2 COUNTY PLANNING SYSTEM

The General Plan plays a key role in the County's planning system, which is composed of a hierarchical set of activities and plans, as shown in Figure 1-1. Together, the General Plan, the community plans, and

Figure 1-1 County Planning System



the functional plans set long-term policy directing development of the land use ordinances and the Capital Improvements Program.

The General Plan sets forth the policy direction for the County through written policies. Spatial policies are depicted on the Future Land Use Map (Section 5.2) and other maps. Policy is elaborated through the more detailed community plans, zoning, and land use regulations.

Community & Special Area Plans establish more detailed policy and maps that are specific to a certain community or geographic area 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 resource commitments and physical improvements.

The Capital Improvements Program (CIP) includes County expenditures and action priorities for a rolling six-year period. It also establishes a financial plan and a general schedule for project implementation.

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.

Zoning Amendments apply to a particular land parcel or group of parcels. The General Plan Land Use Map in Chapter 5 shows only general land uses for an area. Zone changes translate these to the parcel level on the County Zoning Maps in Chapter 5. At the time of zoning, decisions need to be made concerning a wide range of issues, including but not limited to the following: the potential effects on the use and character of surrounding lands; the specific location of commercial and residential areas; the densities of development; the road system; and the adequacy of infrastructure and community facilities.

Site development and construction regulations such as the building code, grading ordinance, and the drainage standards play a significant role in guiding land development and maintaining environmental quality.

1.1.3 GENERAL PLAN FRAMEWORK

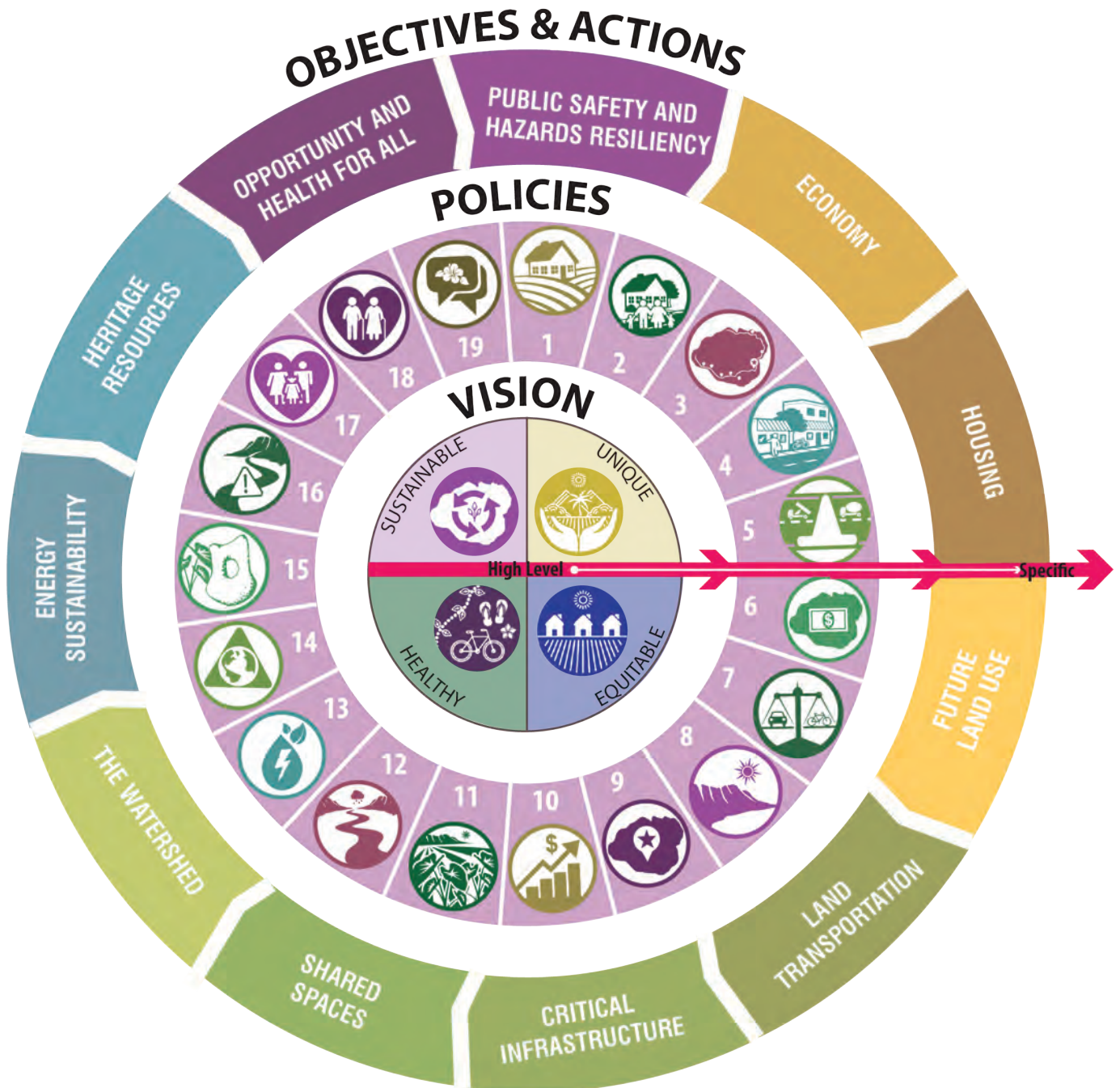
The theme of the General Plan, *Kau'i Kākou*, acknowledges that Kaua'i's strength lies in its strong, diverse community and the ability to work together to provide a better future. The plan's framework represents Kaua'i's approach to managing future growth and unifies the vision, goals, policies, objectives, actions, and maps. The General Plan Framework is illustrated in Figure 1-2. The five elements of the framework are described below:

- **Vision and Goals** - The vision and goals are aspirational in nature. They describe Kaua'i's ideal and desired state by the year 2035. The vision for Kaua'i is organized by four overarching goals identified through the community process.

- Policies - The nineteen policies update and streamline the policies in the General Plan 2000, while also accounting for new issues and community concerns. In concert, the policies articulate the County's direction and priorities in accommodating and managing future growth.
- Objectives and Actions by Sector - The ten sectors represent the areas that must be considered in policy implementation. Within

each sector are several subsections which elaborate on more specific topics. Each subsection has an objective that details the policy direction specific to the topic. Actions are forward-looking and are organized by the implementation tool available to the County. Actions represent what is needed to move policy forward. They include code changes, updated or new plans, partnership needs, and projects. This organization allows users to find

Figure 1-2 General Plan Framework



topics easily and also communicates how the General Plan should be used. Responsible parties and policy conformance for each action is shown in the action matrix (Appendix G).

- Policy Maps - Six maps illustrate the policy of the General Plan. The Future Land Use Map is the spatial representation of how Kaua'i should accommodate and manage future growth. The other maps support the Future Land Use Map and include Heritage Resources, Hazards, Infrastructure, Public Facilities, and Transportation.
- Implementation Program - By nature, the General Plan is a high-level guidance document and implementation will require moving forward on several levels of the planning system and across many existing programs. The General Plan's Implementation Program is designed for accountability and transparency, and includes evaluation, monitoring, and reporting elements. Performance measures provide a means of assessing progress in relation to the General Plan vision, goals, and policies. Chapter 4 covers performance measures and monitoring in further detail. Together, the implementation elements create a feedback loop, thus allowing the General Plan to be a living document that can be amended in a timely manner if need be.

1.2 PUBLIC PROCESS

1.2.1 BACKGROUND DATA AND KEY GROWTH TRENDS

To plan for the future, an assessment of existing conditions and trends must first occur. Phase I of the General Plan Update included the development and integration of six technical reports to serve as the Plan's data foundation and to inform policy development:

1. Socio-Economic Analysis and Forecast (2014)
2. Land Use Buildout Analysis (2015)
3. Infrastructure Analysis (2015)
4. Climate Change and Coastal Hazards Assessment (2014)
5. Important Agricultural Lands Study (2015)
6. Community Health Improvement Plan (2014)

A summary of the technical reports is provided in Appendix C. Key growth trends related to defacto population, housing, and jobs are described below.

Since 2000, the County grew by over 12,000 residents - from 58,463 residents to 71,000 in 2015. To the year 2035, Kaua'i 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 to 88,013 by 2035 (Table 1-1). This represents an increase of 22 percent between 2015 and 2035, or approximately one percent a year (Figure 1-3). Although growth is 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.

The housing unit forecast is a function of the total population and assumes that housing production will respond to demand. To accurately determine demand, household size was forecasted on the planning district level. As with population, the Lihu'e Planning District is likely to see a larger increase in total housing units than the other districts (see Figure 1-4). Assuming stable household size, the 2035 total housing unit forecast is 39,676 (see Table 1-2). This represents annual growth of approximately 1.2 percent per year.

Figure 1-3 Key Growth Trends (2015-2035)

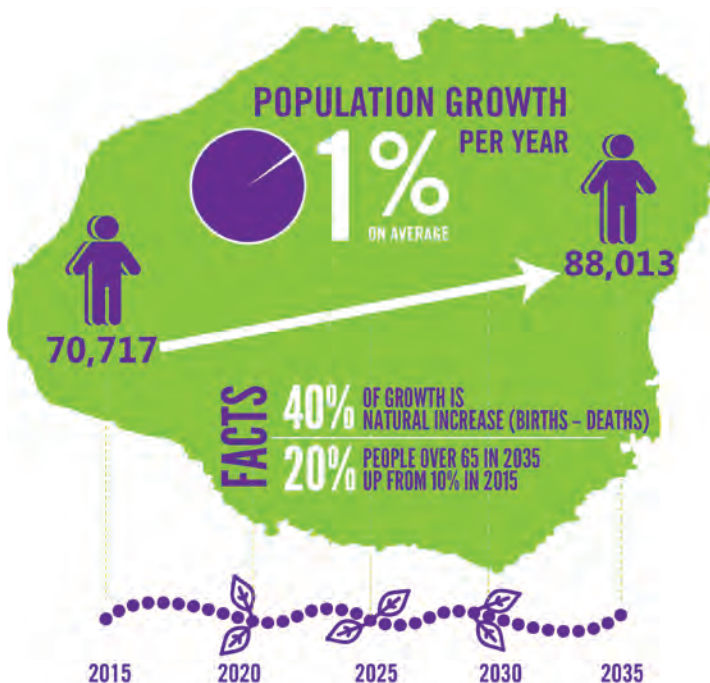
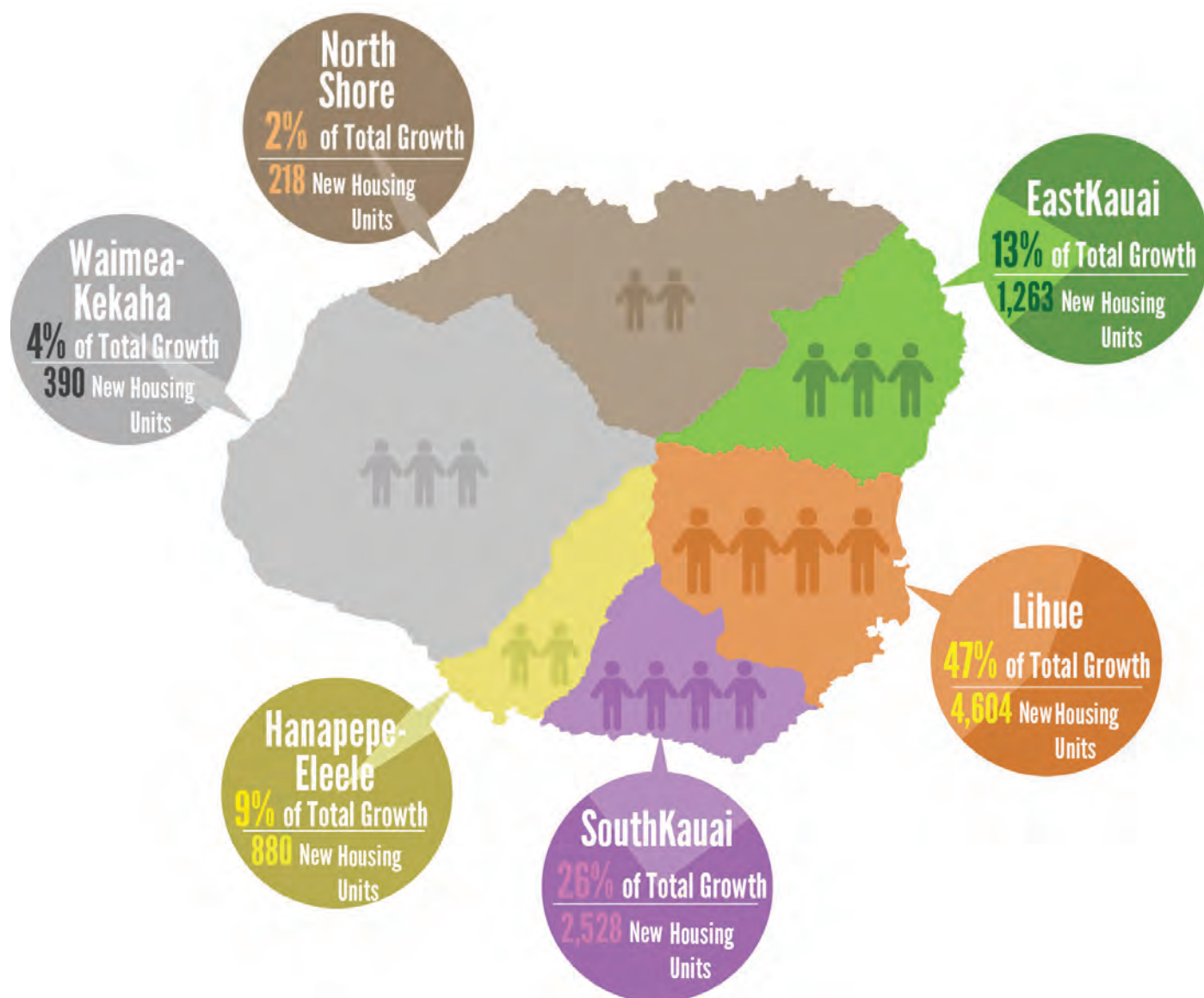


Figure 1-4 Growth Allocations by Planning District

(based on housing unit demand from 2010-2035)



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.

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 Kaua'i is likely to have its significant ups and downs just as it did in the last 25 years.

Table 1-1 Kaua’i County Population, Island-Wide and By District (1990-2035)

	1990	2000	2010	2020	2030	2035
County of Kaua’i	51,676	58,463	67,091	74,693	83,328	88,013
Līhu’e	11,169	12,507	14,683	18,017	21,595	23,456
South Kaua’i	9,600	10,545	11,696	13,623	15,737	16,855
Hanapēpē-‘Ele‘ele	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 Kaua’i	16,192	18,784	20,992	22,403	24,128	25,110

Table 1-2 Housing Unit Demand, Forecast to 2035

	Year					
	1990	2000	2010	2020	2030	2040
County of Kaua’i, Total Units	17,613	25,331	29,793	33,553	37,519	39,676
County of Kaua’i, Available Units	16,985	21,398	24,915	28,085	31,379	33,169
County of Kaua’i, 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%

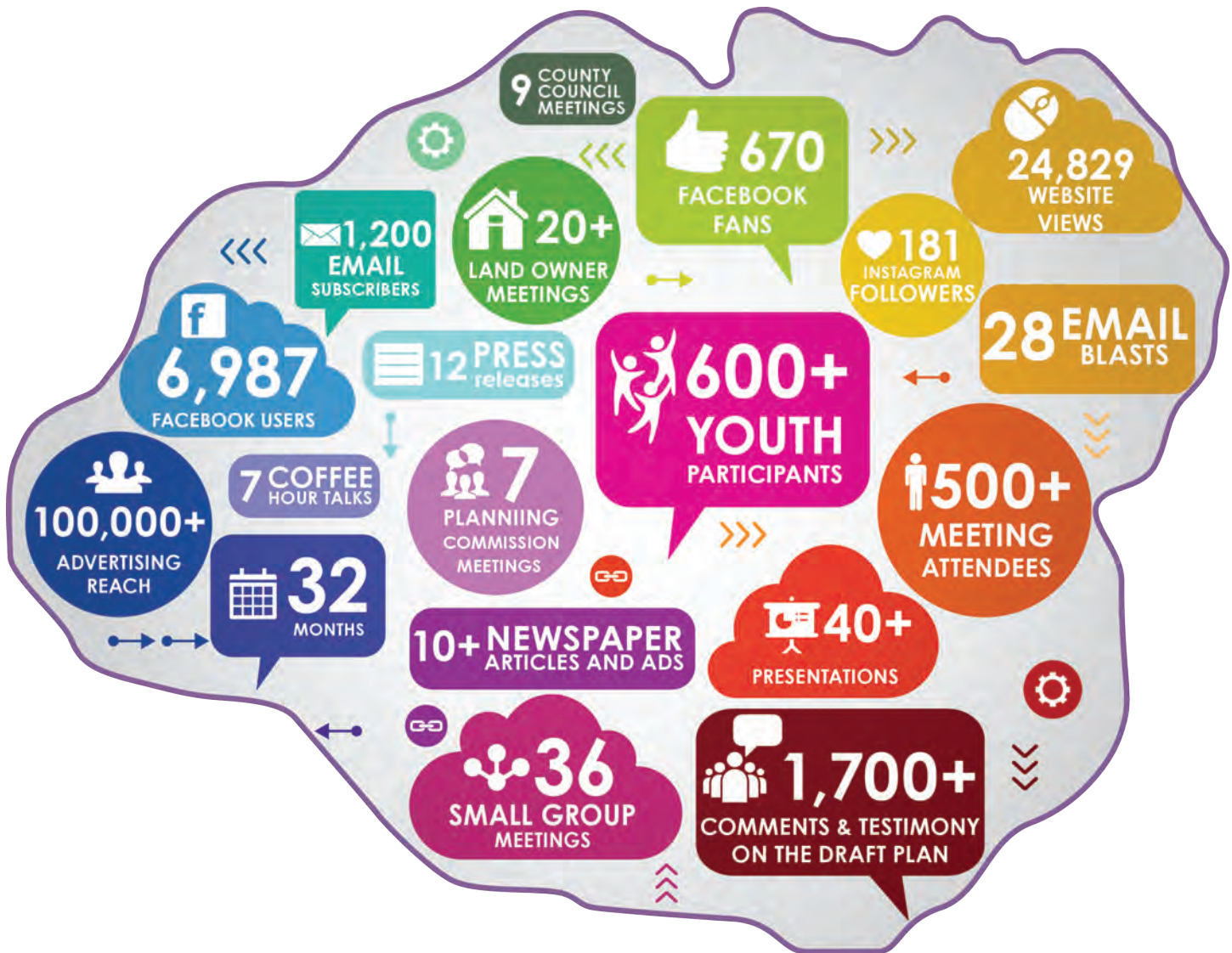
Table 1-3 Job Growth, Forecast to 2035

	Year					
	1990	2000	2010	2020	2030	2040
County of Kaua’i	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%

Table 1-4 Visitor Arrivals, Forecast to 2035

	Year					
	1990	2000	2010	2020	2030	2040
County of Kaua'i (x1000)	1,229	1,075	955	1,302	1,418	1,480
Change This Decade		-13%	-11.2 %	26.7 %	8.1%	4.2%
Average Annual Rate of Change		-1.3%	-1.2%	2.7%	.8%	.4%

Figure 1-5 Reach of the General Plan Public Process



1.2.2 A PLAN DRIVEN BY THE COMMUNITY'S VISION

The General Plan is based on the community's vision for Kaua'i's future. Phase II of the update process utilized a broad and inclusive public engagement program to develop the Plan. Thousands participated through a variety of platforms including open houses, workshops, social media, digital engagement, community and small group meetings, pop-up events, and a survey with more than 1,000 respondents. Input from the public, agencies, and the Citizen Advisory Committee informed the vision, goals, policies, objectives, and actions.

A project website (www.plankauai.com) served as a clearinghouse for information and updates. The website included records of community input, technical studies, white papers, meeting summaries, and other relevant documents. Figure 1-5 illustrates the reach of the public process as of February 2018. The public process is fully described in Appendix B.

1.2.3 BALANCING POLICY AND PLANNING FOR ACTION

The public process garnered positive feedback concerning the 2000 General Plan's well-crafted vision and values. However, many did point out weaknesses in the previous General Plan's ability to identify effective mechanisms for managing growth and to provide the public and decision makers clear implementation guideposts. Further, the tenor and character of public comments tended to congregate around what was wrong with their community, what needed to be fixed, or where government failed them during this process.

The issues raised by the public during this process 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 many issues have become exacerbated over time. In response, the plan clarifies policy and direction built upon the still-valid foundational community values in the 2000 General Plan:

- Protection, management, and enjoyment of our open spaces, unique natural beauty, rural lifestyle, outdoor recreation and parks.
- Conservation of fishing grounds and other natural resources, so that individuals and

families can support themselves through traditional gathering and agricultural activities.

- Access to and along shorelines, waterways, and mountains for all. However, access should be controlled where necessary to conserve natural resources and to maintain the quality of public sites for fishing, hunting, recreation, and wilderness activities valued by the local community.
- Recognition that our environment is our economy, our natural capital, and the basis of our economic survival and success.
- Balanced management of our built environment, clustering new development around existing communities and maintaining the four-story height limit.
- Diverse job and business opportunities so that people of all skill levels and capabilities can support themselves and their families.
- Government that supports and encourages business.
- Balanced economic growth development that promotes providing good jobs and a strong economy, without sacrificing our environment and or our quality of life.
- Respect and protection for the values and rights of our many cultures, in compliance with our laws and responsibilities as citizens.
- Preservation of our cultural, historical, sacred, and archaeological sites.
- Appreciation and support for the traditions of the Native Hawaiian host culture and the many other cultural traditions and values that make up the Kaua'i community.
- Appreciation and support for the visitor industry's role in preserving and honoring all cultures and their values as Kaua'i's leading source of income and as a supporter of community festivals, recreation, arts, and culture.
- Protection of Kaua'i's unique character.
- Recognition of the uniqueness of our communities, supporting people with roots and history in those communities to continue to live and raise their families there.
- Safety for all citizens and visitors.

ONLINE VERSION

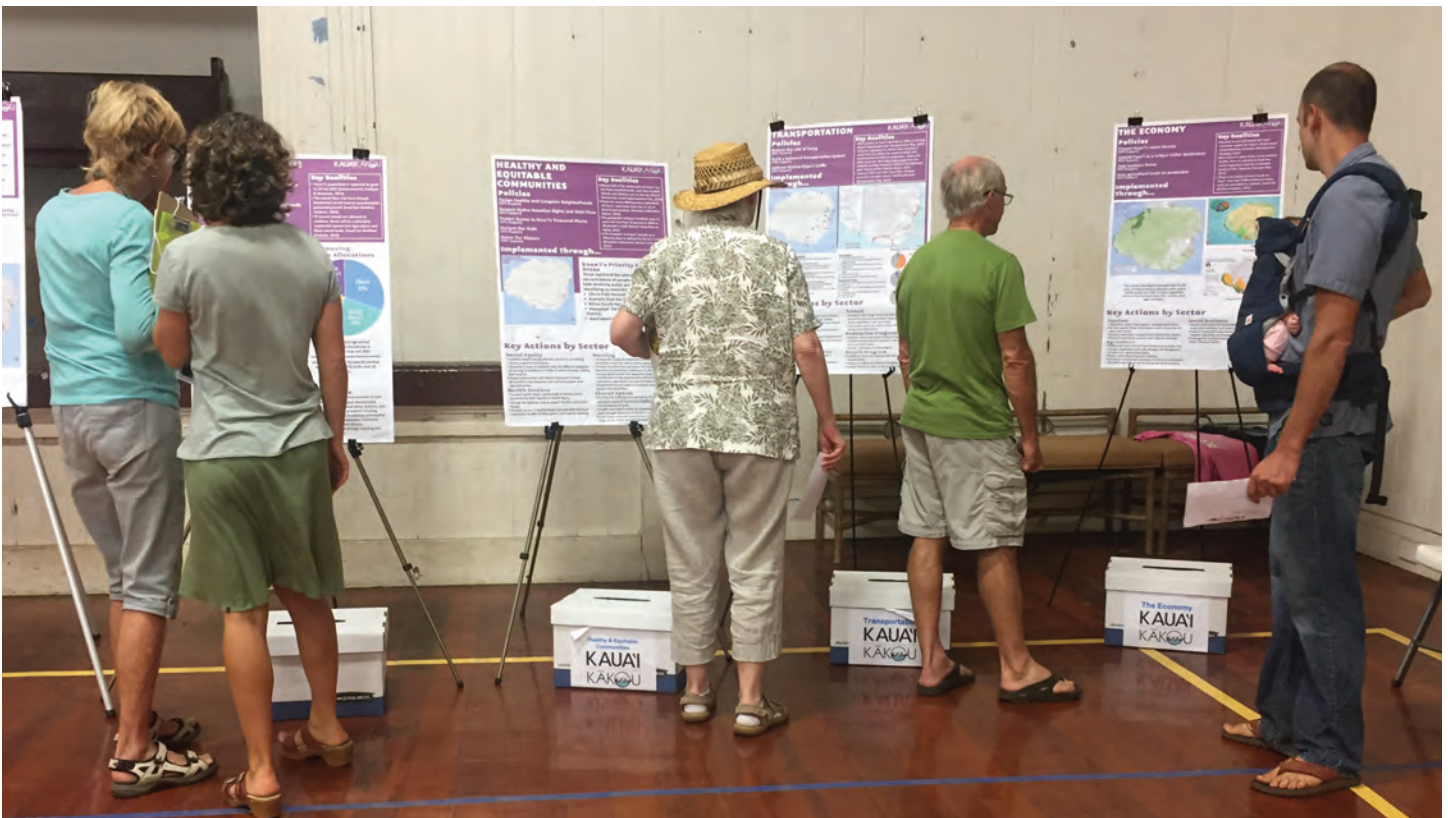
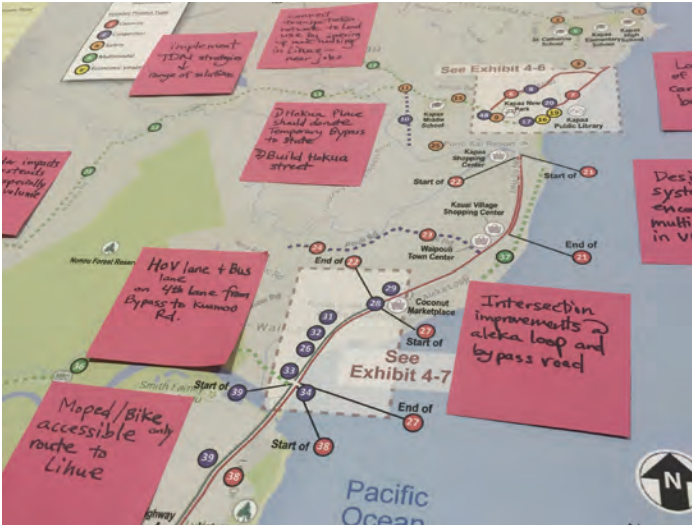
- Support for our youth, educating them to succeed.
- Broad participation in the public process.

The General Plan keeps paramount Kaua'i's values that focus on what we have in common rather than what separates us, threads the values through overarching policies, then implements policy through clear actions.

Concerns were raised that a focus on problems created in the past would leave aside detailed and

deep discussion on the policies needed to move us forward. Another concern was that an emphasis on actions may draw away attention from a firm policy foundation to guide decision-making.

In response, the "Policies to Guide Growth" section discusses the rationale behind the policies and provides insight toward how each item is meant to move us forward. Further, the actions by sector contain objectives that are clearly tied for consistency to the policies.



Kaua'i Kākou public participation events

ONLINE VERSION

1.3 VISION AND GOALS

The vision sets the desired long range outcome through a series of statements organized by the following over-arching goals:



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 provide the foundation of sustainable policies for land use, energy, infrastructure, society, and economy.



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 Kaua'i's self-sufficiency.



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.



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 services.

GOAL #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.

Sustainable development does not endanger the natural systems that support life: air, water, soil, and living organisms. It means meeting the basic needs of society and extending to all people the opportunity to satisfy their aspirations for a better life. It means integrating economic and environmental considerations in policy and decision-making.¹ A key concept related to sustainability is managing growth without depleting the natural 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.

There is a common desire to manage or limit growth, visitor traffic, and development on Kaua'i. 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 statuses, 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.

Sustainability also means recognizing the County's role in the larger world. For example, sustainability is threatened by global climate change, and Kaua'i must reduce its greenhouse gas emissions and adapt in ways that are sensitive to the environment. Local sustainability efforts are strengthened by statewide initiatives and partnerships. In 2008, the Hawai'i 2050 Sustainability Plan was finalized. In 2014, the County became a signatory of the Aloha+ Challenge, a statewide commitment to achieve integrated sustainability goals by 2030. The program's priorities include clean energy, local food production, natural resource management, waste reduction, smart sustainable communities, and green workforce and education. The General Plan's sectors and performance measures align with and support these priority areas.

The United Nations Brundtland Commission defined 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

Community Voices

"In the words of Edward R. Murrow, American journalist, 1908-1965: 'The obscure we see eventually. The completely obvious, it seems, takes 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 Kakou art contest entry by Aaliyah Cadiente-Nu-mazawa of Wilcox Elementary School.

¹ *Our Common Future: Report of the World Commission on Environment and Development, 1987*

GOAL #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. These qualities and features are irreplaceable and exist nowhere else in the world, and therefore deserve protection in perpetuity. Specific examples include endemic and endangered species, historic structures, archaeological sites, cultural traditions, beliefs, practices, stories, and legendary places (wahi pana).

There is a legendary 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 the public trust resources 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 Resources Sector identifies special resources in need of protection.

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

GOAL #3: A HEALTHY AND RESILIENT PEOPLE

We seek to increase the resilience and vitality of Kaua'i'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

Health is influenced by the built environment, including the quality and affordability of housing; ability to walk or bicycle to key destinations; access to education, health care, and public services; availability of healthy foods; and access to the recreational areas that support active lifestyles.

Healthy communities are also multi-generational, supporting the needs of all from keiki to kūpuna. Community health is strengthened by 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 understand their strengths and vulnerabilities, and have resources and networks that enable self-sufficiency in responding to changes. Having weathered multiple disasters, Kaua'i's residents have a heightened awareness of the need to prepare for and recover quickly from disruptive events. This awareness is an asset that can be employed in planning for other hardships due to climate change or economic fluctuations.

Self-sufficiency is another aspect of resiliency. This includes increasing local food production and crops for fuel and fiber. It means transitioning

to renewable 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.

Resiliency also requires strong community fabric. Factors that erode community fabric include: the high cost of living; loss of opportunities for youth; residents priced out of the housing market; lack of common gathering areas; and sprawling development which weakens our town centers. The General Plan addresses these concerns through policies and actions for revitalizing towns and encouraging affordable housing.

Finally, resilience needs a strong and diverse economy. Workers must have access to 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.

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."*

"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!"



Kaua'i Kakou art contest winner Zixin He of Kapa'a Elementary School.

GOAL #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 Kaua'i'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 Kaua'i, 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 Kaua'i 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, 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 Kaua'i and seek opportunity elsewhere.

Reversing this trend means ensuring that Kaua'i 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,

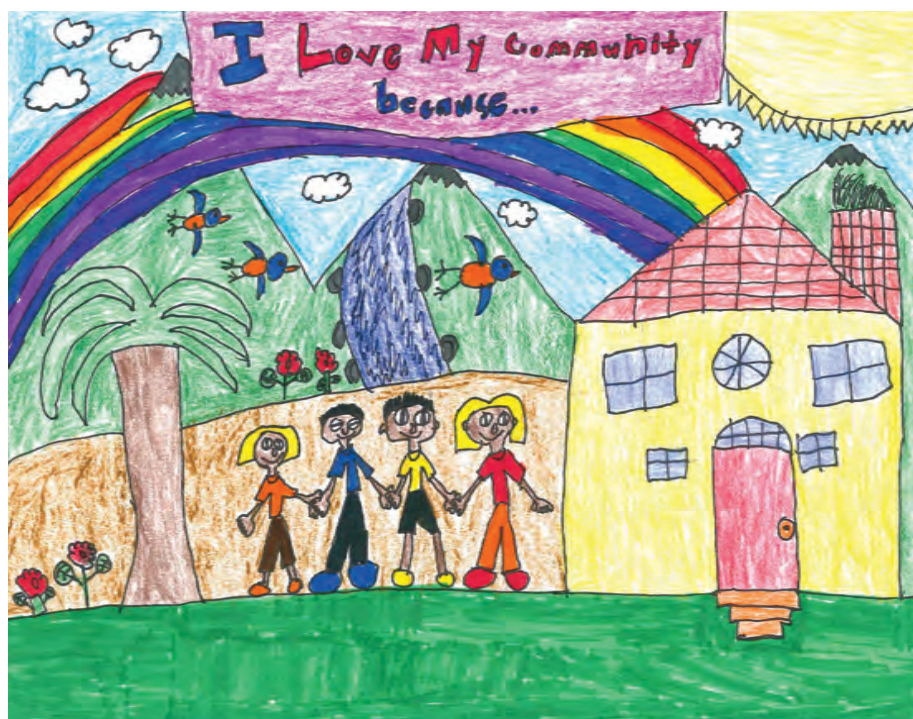
and opportunities for recreation and enjoyment of shared spaces. It means making sure that planning and land development decisions do not unfairly burden disadvantaged groups. It means encouraging and celebrating diverse, mixed income neighborhoods. It means providing for workforce housing in new growth 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 Kaua'i provide opportunity for its people from keiki to kūpuna. This will require creative thinking, collaboration, and collective action in the spirit of Kaua'i Kākou.

Community Voices

"I believe that most of the long-term Kaua'i 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 Līhu'e – 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."



Kaua'i Kākou art contest entry by Aljhay Flores of King Kaumuali'i Elementary School.

1.4 POLICIES TO GUIDE GROWTH

Nineteen policies address the issues most important to Kaua'i residents in the face of existing issues and future growth. The policies guide objectives and actions and inform the Future Land Use Map.

 <p>1 Manage Growth to Preserve Rural Character</p>	 <p>2 Provide Local Housing</p>	 <p>3 Recognize the Identity of Kaua'i's Individual Towns and Districts</p>	 <p>4 Design Healthy and Complete Neighborhoods</p>
 <p>5 Make Strategic Infrastructure Investments</p>	 <p>6 Reduce the Cost of Living</p>	 <p>7 Build a Balanced Multimodal Transportation System</p>	 <p>8 Protect Kaua'i's Scenic Beauty</p>
 <p>9 Uphold Kaua'i as a Unique Visitor Destination</p>	 <p>10 Help Business Thrive</p>	 <p>11 Help Agricultural Lands Be Productive</p>	 <p>12 Protect Our Watersheds</p>
 <p>13 Complete Kaua'i's Shift to Clean Energy</p>	 <p>14 Prepare for Climate Change</p>	 <p>15 Respect Native Hawaiian Rights and Wahi Pana</p>	 <p>16 Protect Access to Kaua'i's Treasured Places</p>
 <p>17 Nurture Our Keiki</p>	 <p>18 Honor Our Kūpuna</p>	 <p>19 Communicate with Aloha</p>	

GENERAL PLAN POLICIES

Nineteen policies articulate the County's path forward toward meeting the community's vision and goals of sustainability, unique character, resilience, and equity. The policies address the critical issues and opportunities identified through the community process. They are not listed 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 B.

Each policy statement is numbered and accompanied by a heading and icon. The icons are used in Chapter 3 to illustrate policy consistency.



POLICY #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.

Rural character is what makes Kaua'i a unique and beautiful place valued by residents and visitors alike. However, this character is threatened by low-density development occurring on agricultural lands that are non-adjacent to existing towns. This development pattern also increases traffic—another threat to Kaua'i's rural character. Because our population will grow, we need to manage growth 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 in existing towns will minimize infrastructure costs and help maintain separation between towns. When combined with transportation improvements, compact growth can reduce traffic congestion by reducing the need for long trips in single occupancy vehicles, increasing walking and biking within towns, and improving access to transit.

This policy is implemented spatially through the Land Use Map in Chapter 5 (Urban Edge Boundaries and amount of new urban district allocated to districts) and through actions for Housing, Land Use, and the Economy.



POLICY #2: PROVIDE AFFORDABLE HOUSING WHILE FACILITATING A DIVERSITY OF PRIVATELY-DEVELOPED HOUSING FOR LOCAL FAMILIES

Recognizing the extraordinary urgency, the County needs to plan for and help facilitate the building of approximately 9,000 housing units by 2035. Factors to consider include establishing: (1) a fair and effective housing ordinance; (2) adequate capital; (3) effective partnerships; (4) clear policy guidelines ensuring cost-effective and energy-efficient homes by design and location; (5) a strategy for providing adequate infrastructure for affordable housing; (6) a “housing first” approach to ending homelessness; and (7) a timetable for action, including a short-term strategy for developing 2000 affordable housing units in the first five years.

The average price of a single family house on Kauaʻi exceeds \$700,000.² A large majority of our population, especially low- and moderate-income working families, seniors, and the houseless population, cannot afford such costs. Our current housing deficit is approximately 1,400 units,³ and demand is projected to increase by approximately 9,000 units by 2035.⁴ Over 80 percent of the housing demand on Kauaʻi comes from families making 120 percent of median income or less, with the largest need coming from families with income equal to or less than 50 percent of median income.⁵ The median income for a 4-person household is presently \$79,200.⁶

Currently the average cost to build a basic house or dwelling unit is \$450,000.⁷ Whether by private or public developer, the construction of a housing unit must therefore be subsidized by approximately \$200,000. At that level of subsidy, it will take \$1.62 billion of private and public capital over the next 20 years to build 8,100 affordable housing units (80% of the 9,000 units needed by 2035). Besides finding capital and partners to provide some of the capital, efforts must be made to reduce housing costs with design and other innovative solutions such as tiny homes and reducing the environmental footprint.

It is presently best practice to consider household transportation costs with housing costs. A house may be affordable, but if it is located far from jobs, requiring extensive (and expensive) commuting, a family is not well served, while traffic is worsened. Locating affordable housing near job centers will allow families to manage their cost of living, while easing traffic congestion.

The housing crisis is compounded by the fact that 44 percent of all households are already cost-burdened, meaning that housing costs exceeds 30 percent of income.⁸ Slow inventory growth, regulatory barriers, predominantly single-family residential construction, fierce off-island demand for second homes, vacation rentals, and investment properties, the rising high cost of building a dwelling unit, and a lack of infrastructure also all contribute to a severe lack of housing.

2 Kauaʻi Board of REALTORS®, 2015

3 Kauaʻi Rental Housing Study, 2014

4 *Socioeconomic Analysis & Forecasts*

5 Hawaiʻi Housing Planning Study, 2016

6 County of Kauaʻi 2017 Annual Income Limits

7 09/13/2016 and 09/20/2016 Minutes of the Kauaʻi County Council Affordable Housing Advisory Committee (authorized by Resolution No. 2013-57, Draft 1 on 06/12/2013, amended by Resolution No. 2014-34 on 05/28/2014)

8 ACS *Housing Snapshot*, 2014

There is no simple, single solution; rather, several essential strategies need to be deployed concurrently and quickly. Affordable housing is a pivotal issue that will define life on Kaua'i over the next 20 years. Kaua'i will not be Kaua'i if those born and raised on the island must move away. If not effectively addressed, there will be enormous suffering, with consequences for the economy and the social fabric of Kaua'i County. If the County is committed to achieving its vision of an equitable society with opportunity for all, it is imperative that the County find a way to address this basic need.

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



POLICY #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 from community input is the appreciation of Kaua'i's distinct towns separated by open space. This physical attribute contributes to the rural character so valued by residents and visitors. Communities also expressed that their towns and districts are unique: for example, Kōloa is not Hanalei and Waimea is not Kapa'a. Directing growth and community planning in this manner protects the identity of towns and districts, and preserves the open space between towns.

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



POLICY #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 sedentary lifestyles.⁹ Recent plans confirm the relationship between health and community design. Creating neighborhoods where it is safe and convenient to walk, bike, or take transit allows residents to increase physical activity on a daily basis, thereby 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.



POLICY #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.

⁹ Community Health Needs Assessment, 2013; Community Health Improvement Initiative, 2014



POLICY #6: REDUCE THE COST OF LIVING

Reduce the combined costs of housing and transportation, which consume more than 60 percent of Kaua'i's 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 U.S. Census Bureau (2014) American Community Survey (ACS), 44 percent of all households are cost-burdened and the average Kaua'i household spends 36 percent of their income on housing costs and 26 percent on transportation costs. With employment wages relatively stagnant, coupled with the increasing price of basic necessities, housing and transportation actions must be aligned to improve 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.



POLICY #7: BUILD A BALANCED MULTIMODAL TRANSPORTATION SYSTEM

Reduce congestion conditions through strategic infrastructure improvements and increase multimodal transportation options.

Community members have repeatedly highlighted congestion as the County's top transportation concern and express that transportation infrastructure has not kept pace with development.

Past studies and efforts have demonstrated that trying to "build our way" out of congestion through a focus solely on road widening and new roads is neither feasible nor sustainable, and threatens our unique rural sense of place. For example, the Hawai'i Department of Transportation (HDOT) has identified \$3.1 billion in roadway projects for Kaua'i, but anticipated funding of \$630 million over the same timeframe.¹⁰ In other words, only 20 percent of the funding needed to complete these projects 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 transportation users, including freight, cars, transit users, bicyclists, and pedestrians.

County and State cooperation is needed to implement the highest priority projects that contribute most to managing congestion.

This policy is implemented through the Transportation Map and Actions for Land Transportation, and the Lihu'e and South Kaua'i districts.

¹⁰ Federal Aid Highways 2035 Transportation Plan for the District of Kaua'i, 2014



POLICY #8: PROTECT KAUA'I'S SCENIC BEAUTY

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

Kaua'i is home to distinctive natural views and landmarks that define Kaua'i's sense of place for residents and visitors. Mauka and makai scenic views of places such as Wai'ale'ale, Kawaikini, Kē'ē 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.



POLICY #9: UPHOLD KAUA'I AS A UNIQUE VISITOR DESTINATION

Protect the identity of Kaua'i'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 Hā'ena, 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 Kaua'i with a clear increase in traffic – an impact 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.



POLICY #10: 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 on the tourism industry, leading to overuse of the rural and natural areas that make Kaua'i a unique and beautiful place. Future economic growth should support 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.



POLICY #11: 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.

The *Hawai'i Baseline Agricultural Study*¹¹ reported that only 21,494 acres of land on Kaua'i 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.

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POLICY #12: 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, including the understanding of water and watershed resources as public trust resources, promote our sense of place and make environmental sense when seeking options that balance our growing community and the need to maintain healthy watersheds. Though current estimates show water withdrawals under maximum sustainable yield for much of the county, and though Kaua'i is not a regulated groundwater area, there are increasing concerns and questions regarding future availability of both surface and groundwater. This plan will need to be adapted to reflect updated projections in light of climate change and increasing evidence that groundwater withdrawals may reduce stream flow and vice versa. Water conservation and reuse, and stream restoration are key measures to ensure sustainable water supply on our island in future.

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



POLICY #13: COMPLETE KAUA'I'S SHIFT TO CLEAN ENERGY

Mitigate climate change and reduce system-wide carbon emissions by at least 80 percent 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.¹² 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.

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

12

Hawaii Greenhouse Gas Inventory, 2007



POLICY #14: 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 in flux, the best available science for our island indicates we should plan for at least three feet of sea level rise. 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.



POLICY #15: 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.

Native Hawaiians have refined systems for sustainable stewardship and collaboration that honor 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 ancestral 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 and that lands and resources must be protected for perpetuation of cultural practice.

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



POLICY #16: PROTECT ACCESS TO KAUAI'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 – fishing, hunting, or gathering of foods, materials, and medicines – that have 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 know 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 the protection of natural resources and the Hawaiian value system of mālama 'āina.

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



POLICY #17: NURTURE OUR KEIKI

Value youth as Kaua'i's most treasured resource. Provide them with safe communities, great schools and facilities, and financially sustainable jobs, 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, housing, and economic opportunity are necessary to keep our keiki from permanently moving away from home.

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



POLICY #18: HONOR OUR KŪPUNA

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

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

Here on Kauaʻi, kūpuna are honored and cared for as they are the foundation of our families and communities. By supporting kūpuna-friendly communities, kūpuna will be able to age in place and live an active and independent lifestyle as long as possible. 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.



POLICY #19: COMMUNICATE WITH ALOHA

Kauaʻi'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 asked 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.

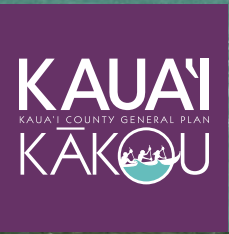
Tracking the many actions that support the policies that help us to attain our goals will take a thoughtfully crafted system with room to evolve. Establishing performance measures, monitoring progress, reinforcing accountability, and involving the community in the future of the island are integral to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

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



East Kaua'i Community Visioning Workshop in Kapa'a

The theme of the General Plan, Kaua'i Kākou, acknowledges that Kaua'i's strength lies in its strong, diverse community and ability to work together to provide for a better future.



2.0 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 actions at the State level and amendments to zoning districts and development standards at the County level.

2.1 FUTURE LAND USE

Future Land Use Objectives:

1. To accommodate Kaua’i’s projected population growth and housing needs.
2. To meet future housing needs through “missing middle” housing types that are affordable by design and located near jobs centers.
3. To protect rural character by ensuring new growth is designed to be compact and focused around existing town cores.
4. To manage land use and development in a manner that respects the unique character of a place.
5. To locate residential growth in and near major jobs centers.
6. To increase overall community health through design that supports safe and accessible parks, streets, and other shared spaces.
7. To encourage the development of Lihu’e as Kaua’i’s primary urban center within an urban edge boundary.
8. To increase resiliency by limiting development in areas impacted by future sea level rise.

Policy Alignment:



Directing How Kauaʻi Grows

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 directed whether or not certain areas are appropriate for development.

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 Lihū'e and South Kauaʻi 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-'Ele'ele, East Kauaʻi, and North Shore planning districts based on historic and natural increase trends.

Building Upon Historic Settlement Patterns

Prior to Western settlement, a complex system of land division existed across Hawaiʻi. An island, or moku, was divided into several moku, the largest units within each island. Kauaʻi has five moku and Niʻihau represents a sixth. Moku were divided into ahupuaʻa, land sections that extended from the mountains to the sea. The size of the ahupuaʻa 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. Kauaʻi embraces the concepts of moku and ahupuaʻa and seeks to perpetuate the names, symbols, and knowledge associated with them through education and signage.

Kauaʻi's towns were originally sited at harbors and



Commercial area in Nāwiliwili, Lihū'e District (Courtesy of Prayitno Hadinata, through Flickr.com Creative Commons).

crossroads, some of which pre-dated the arrival of Europeans. During the plantation period, settlements included 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 fields created a greenbelt that separated towns. This relationship between built areas and surrounding natural or agricultural lands heavily influences 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. Growth should be directed to revitalize, restore, and celebrate these towns as unique places that promote healthy economies and community life.

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 goods and services used by locals, 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), 47 percent of future growth is allocated to the Līhu'e District. South Kaua'i will accommodate 26 percent of future growth. East Kaua'i, which is the most populous district, is projected to receive 13 percent of future growth. 14 percent of future growth is allocated to the remaining three districts – North Shore, Waimea-Kekaha, and Hanapēpē-'Ele'ele – to provide for natural population increase.

2.2 LAND USE 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 Appendix B. The twelve designations are:

1. 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 3 sectors: 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.



Kalalau Beach (© 2018 Eagle View Technologies, Inc. and Pictometry International Corp.)

2. Agriculture

It is the County's policy to preserve and protect Agriculture lands, particularly those of the highest quality. Therefore, Important Agriculture 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



Kalāheo (© 2018 Eagle View Technologies, Inc. and Pictometry International Corp.)

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 Agriculture designation are found in the following Chapter 3 subsections: 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) and non-IAL.

3. Homestead

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 the 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.¹⁰ However, single-family dwellings are permitted on lots existing before June 4, 1976.¹¹ 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.



Wailua Homesteads (© 2018 Eagle View Technologies, Inc. and Pictometry International Corp.)

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 Kapa’a.

4. 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.



Kōloa Town (© 2018 Eagle View Technologies, Inc. and Pictometry International Corp.)

10 HRS §205-4.5(a)(4)
 11 HRS §205-4.5(b)

Actions for the Neighborhood Center designation are found in the following Chapter 3 subsections: 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.

5. Neighborhood General

The Neighborhood General Designation applies to the watershed surrounding 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 multi-family housing types.

Actions for the Neighborhood Center designation are found in the following Chapter 3 sectors: Housing, Shared Spaces, and Land 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.



Kilauea Town (© 2018 Eagle View Technologies, Inc. and Pictometry International Corp.)

6. 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 are 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 'Ele'ele. 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 3 sectors: 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.



Hanapēpē (© 2018 Eagle View Technologies, Inc. and Pictometry International Corp.)

7. 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 approximately 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 3 sectors: Shared Spaces and 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 Urban Center designation is replaced with Neighborhood Center and Industrial in Port Allen, and Neighborhood Center and Neighborhood General in Kapa'a. 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.



Līhu'e (© 2018 Eagle View Technologies, Inc. and Pictometry International Corp.)

8. 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.

Actions for the Resort designation are found in the Chapter 3 sector: Economy.

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 in unentitled areas (without County Resort Zoning or VDA) where there was little community support for resort expansion, such as Nukoli'i and Princeville (Table 2-1). Further restrictions are required on remaining areas without entitlements, by policy, in the Tourism subsection, to ensure furtherance of the "use it or lose it" policy, and provide a short window for areas like Kīkīaola to commit investment toward the resort use of the area. Otherwise, the designation of the area will revert to Agriculture.



Po'ipū (© 2018 Eagle View Technologies, Inc. and Pictometry International Corp.)

Table 2-1 Changes to Resort Areas

District	Action
<p>Waimea-Kekaha Kīkāoia Land Company holdings east of Waimea Plantation Cottages</p>	<p>60 acres of Resort Designation changed to “Provisional” Resort, to allow for a detailed community process to determine the appropriateness, scale, and extent of future resort development in Waimea-Kekaha.</p>
<p>Līhu‘e Non-entitled resort lands in Nukoli‘i, south of Kaua‘i Beach Resort</p>	<p>30 acres of Resort was designated Agriculture.</p>

9. 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 Līhu‘e Airport, Nāwiliwili Harbor, and Port Allen Harbor.

Actions for Industrial and Transportation are found in Chapter 3 sectors: Land Transportation and Critical Infrastructure.

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 Olokele and Kōloa mill sites.



Port Allen (© 2018 Eagle View Technologies, Inc. and Pictometry International Corp.)

10. Military

The Military designation describes lands under the control of the U.S. Armed Forces. It is unchanged from the equivalent designation in the 2000 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.

Changes from the Previous General Plan Land Use Map

The Military designation is unchanged.



Pacific Missile Range Facility (© 2018 Eagle View Technologies, Inc. and Pictometry International Corp.)

11. 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 3 sector: Opportunity and Health for All.

Changes from the Previous General Plan Land Use Map

The University Zone designation is a new designation on the General Plan Land Use Map.



Kaua'i Community College (© 2018 Eagle View Technologies, Inc. and Pictometry International Corp.)

12. Parks and 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 3. 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 3 sector: Shared Spaces.

Changes from the Previous General Plan Land Use Map

All State and County parks, as well as the National 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.



Princeville (© 2018 Eagle View Technologies, Inc. and Pictometry International Corp.)

Table 2-2 Major Designation Changes by Planning District

District	Action
Waimea-Kekaha	<ul style="list-style-type: none"> Two areas west of Waimea changed from Residential Community to Agriculture. Resort designation changed to “Provisional Resort” to allow for a community planning process to determine the appropriateness, scale, and extent for resort development in Waimea.
Hanapēpē-‘Ele‘ele	<ul style="list-style-type: none"> Neighborhood Center and General designations added to both Port Allen and Hanapēpē Town to be consistent with Department of Hawaiian Home Lands (DHHL) plans and to connect Lima Ola to Port Allen. Agriculture designation changed to “Provisional” to allow for a community planning process. 75 acres for planned Lima Ola affordable housing development changed from Agriculture to Residential Community. New Neighborhood Center and Neighborhood General added to Port Allen. Approximately 19 acres in Makaweli on existing mill site from agriculture to industrial.
South Kaua‘i	<ul style="list-style-type: none"> Neighborhood Center and General designation applied to Kōloa, Kalāheo, and Po‘ipū Roundabout Area. Small Town designation at Numila and Lāwa‘i Cannery Large Town designation at Po‘ipū Mixed Use Gateway. Residential Community removed from 60 acres above Weliweli Tract.
Līhu‘e	<ul style="list-style-type: none"> Neighborhood Center applied to Līhu‘e Town Core, Puhī Mauka, Isenberg Mauka, Hanamā‘ulu Town, and area in Hanamā‘ulu fronting Highway adjacent to Triangle (west of bluff) formerly owned by EWM Realty International. Portion of Nukoli‘i redesignated from Resort to Agriculture. Addition of the Urban Edge Boundary. New University Zone applied to Kaua‘i Community College and the surrounding schools. Residential Community removed from areas along Kīpū Road. New Residential Community added on mauka side of DHHL Wailua Lands (for consistency with DHHL’s <i>Kaua‘i Island Plan 2004</i>). New Neighborhood Center added on the mauka and makai side of DHHL Wailua Lands (for consistency with DHHL’s <i>Kaua‘i Island Plan 2004</i>).
East Kaua‘i	<ul style="list-style-type: none"> Neighborhood Center/General applied to previous Urban Center in Kapa‘a Town and added to a portion of Olohena Road near Kapa‘a Town. Neighborhood General applied to previous Urban Center designation around Kapa‘a Middle School. Portion of area behind Coco Palms in the Flood Zone changed from Resort to Natural. New Neighborhood Center at Kapahi, Anahola Post Office, and Anahola Town Center (to match DHHL’s Anahola Town Center Plan).
North Shore	<ul style="list-style-type: none"> Neighborhood Center and General designation applied to Hanalei and Kīlauea. Kīlauea town center expanded to accommodate growth. Residential Community at Princeville Airport changed to Transportation. Residential Community mauka of Princeville Airport removed and changed to Agriculture. Resort designation makai of highway removed and changed to Agriculture.

2.3 MAP IMPLEMENTATION

The Future Land Use Map is just one component of Kaua'i'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. Properly implemented, Urban Growth Boundaries provide a helpful tool for ensuring compact development. Henceforth when Community Plans are developed and adopted, each Community Plan shall establish an Urban Edge Boundary to delineate the extent of future town expansion. In the process of identifying a boundary, the Planning Department shall conduct a build-out analysis of the existing urban footprint and use the principles of smart growth to ensure that there is enough room within the boundary for growth desired by the community in a pattern that will make efficient use of scarce resources.

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 further in Section 2.4.

Actions for Future Land Use Map Implementation

A. PERMITTING AND CODE CHANGES

1. Implement a zoning program to comprehensively redistrict and rezone lands consistent with the Future Land Use Map and updated Community Plan and map designations.
2. Build upon place types in future Community Plans and update zoning and development standards to be place-based.
3. Support State Land Use Boundary Amendment Petitions for new Urban District consistent with the Future Land Use Map.
4. Given that the Future Land Use Map is conceptual, the size of future amendments to the State Land Use District Urban District should consider the General Plan's population allocations, housing projections, and the objectives for New Communities.

B. PLANS AND STUDIES

1. Use the community planning process to update and refine the Future Land Use Maps as needed.

2.4 COMMUNITY PLANNING

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 2-3 describes the process and resources that informed the update.

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.

The General Plan covers six planning districts on the Island of Kaua'i: North Shore, East Kaua'i, Lihu'e, South Kaua'i, Hanapēpē-'Ele'ele, and Waimea-Kekaha (Figure 2-2). The Island of Ni'ihau is also part of Kaua'i County, but is not covered by the General Plan due to its predominantly private ownership and management.

It was important to conduct this exercise in areas without recently adopted community plans like South Kaua'i and Lihu'e. The workshops included bus and walking tours of eleven communities: Hanapēpē, 'Ele'ele, Port Allen, 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 2-1 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.

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.

Kaua'i's place types are mapped in Figure 2-2 and described below:

- **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 Lihu'e District and 'Ōma'o in South Kaua'i 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 Lāwa'i in South Kaua'i. They are typically scaled to about the size of one neighborhood.
- **Small Town.** Located in more urbanized areas, small towns are essentially large villages that 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 Kaua'i and Waimea Town in Waimea-Kekaha. They are typically scaled to about the size of 2-3 neighborhoods.

Table 2-3 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> (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 Kaua'i and Līhu'e Community Plans regarding areas of change and land use designations	<i>Līhu'e Community Plan</i> (2015) <i>South Kaua'i Community Plan</i> (2015)
Applied placetypes and right-sized Neighborhood Centers in Waimea-Kekaha, Hanapēpē-'Ele'ele, East Kaua'i, 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> (R.M. Towill, 2015) <i>Infrastructure Assessment for the General Plan Update</i> (SSFM International, 2016) <i>Kaua'i Climate Change and Coastal Hazards Assessment</i> (2014) <i>NOAA Sea Level Rise (SLR) Viewer</i> State and County GIS Hazard Layers
Updated and applied General Plan land use designations for areas outside Neighborhood Center and General areas	<i>Līhu'e Community Plan</i> (2015) <i>South Kaua'i 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>Kaua'i General Plan</i> (Kaua'i County, 2000)

- **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, and are typically made up of four or more neighborhoods. Līhu'e and Kapa'a are examples of large town place types on Kaua'i.
- **Plantation Camp.** 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

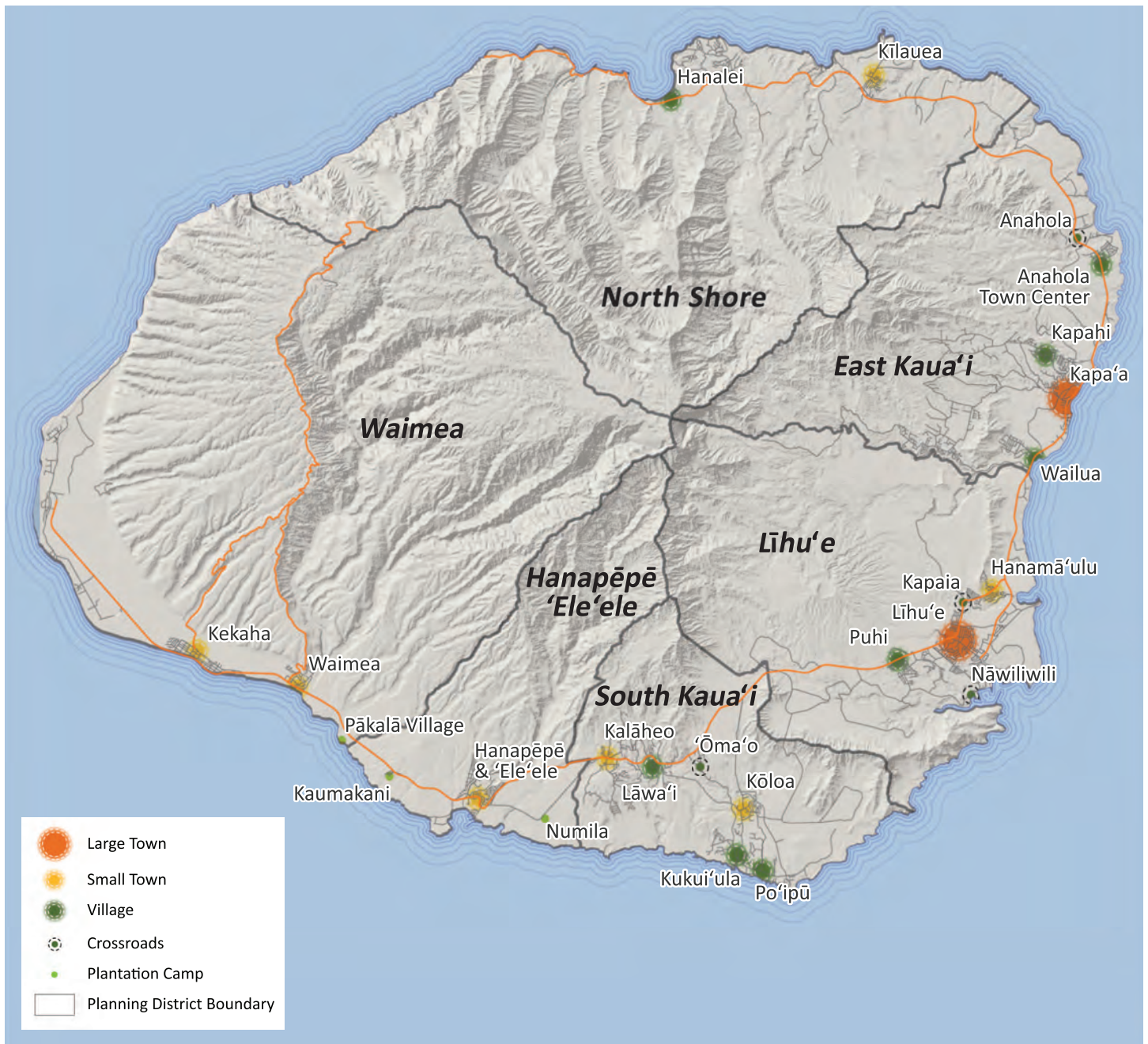
Figure 2-1 Approach to Updating the Land Use Map



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, and Kaumakani on the West Side. The Plantation Camp coloring on the land use maps (Chapter 5) is intended as a descriptive place-type and is not a land use designation with specific land use policies.

Figure 2-2 Planning Districts and Place Types



2.4.1 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 Kōke'e 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 for Waimea-Kekaha

The vision and priorities are preliminary as they have not been examined through an in-depth community planning effort. They provide guidance for specific areas and will inform future community planning efforts.

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.

Waimea Canyon Park, adjacent to the Waimea Canyon Middle School, is the community's regional park that is currently used for sports events and tournaments on the West Side. In 2013, the community envisioned the future expansion of the park through the *Waimea Sports Complex Master Plan*. In the plan, the community called for an additional 65 acres to create a multi-use sports venue that would better serve residents and generate economic activity for West Side businesses through hosting statewide and national sports tournaments.

Two distinct centers have developed along Kaumuali'i 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 Kaua'i Tech & Visitors Center is a key opportunity site to establish pedestrian-oriented, civic, and retail space for both visitors and residents.

Residents enjoy the town's landscaped sidewalks and

WAIMEA-KEKAHA

Place Type:

Kekaha: Small Town

Waimea: Small Town

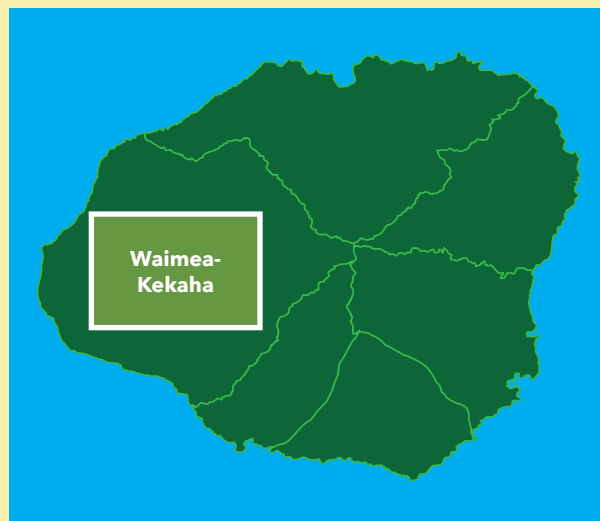
Character/Key Values:

- Community-Minded
- Country Living
- Historic/Timeless
- Peaceful/Relaxed/Quiet/Isolated
- Family/"Ohana/Home

Degree of Change:

Waimea: Incremental

Kekaha: Incremental



Waimea Theatre

desire that future pedestrian facilities match the rural character. Providing multimodal transportation options will help alleviate parking demand in the town center. This includes increasing safe pedestrian crossings, especially near the high school, and calming highway intersections with difficult left turns. New mixed-use infill compatible with the existing scale is welcome. In the surrounding neighborhood, a variety of small-scale housing is desirable, especially to offer options to “age in place.”

To continue to support visitor activity, the community sees value in improving its various tourist facilities, such as public bathrooms and access to the tourist center. A walking route connecting various historic sites could enhance the visitor experience 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 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.

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 repurposing 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.

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 Agriculture 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



Waimea Sugar Mill

movement to entitle the property occurred since the previous General Plan. The Future Land Use Map converts this area to “Provisional 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.

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, 3-foot, and 6-foot scenarios can be found in Appendix D. 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 Kikīaola 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 SLR 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 Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (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 Kikīaola 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.

Guidance for Community Planning for Waimea-Kekaha

The following goals and actions are preliminary and will help inform future community planning processes.

I. 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.

1. Cluster new commercial and community activity within the Neighborhood Center along Kekaha Road near existing businesses.
2. Support community-driven revitalization efforts and programs.

B. IMPROVE PEDESTRIAN MOBILITY AND MULTIMODAL CONNECTIVITY.

1. Better accommodate bicyclists and pedestrians along Kekaha Road by slowing traffic.
2. Construct sidewalks along important connector streets such as ‘Elepaio Road.
3. Improve multimodal connectivity to Waimea with a separated shared use path to enable easier bicycle access to Waimea’s town center.
4. 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.

1. Support programs that encourage agro-tourism and value-added agriculture businesses.
2. 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.

II. GOAL: Ensure that Waimea-Kekaha is resilient to climate change and coastal hazards.

1. In advance of or in conjunction with the Community Plan update, conduct detailed hazard, risk, and vulnerability assessment for coastal hazards with climate change and sea level rise for Waimea-Kekaha when updated sea level rise, erosion rates, and wave inundation planning information is available. Assessment should include low-lying areas adjacent to the Waimea River, low-lying agricultural lands, beach-front properties, Kekaha Landfill, and Kīkīaola Small Boat Harbor. It should also 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, and should encourage relocation to safer areas.
2. Prohibit land use intensification in flood-prone agricultural areas.
3. Partner with relevant State, Federal, and private property owners to develop a sediment management plan for Kīkīaola Small Boat Harbor.

III. 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.

1. Explore ways to expand the central square and make it more pedestrian oriented.
2. Establish pedestrian-oriented civic and retail space at the former mill site at the west end of town.
3. Improve tourist amenities and access to the visitor information center.
4. Provide a variety of small-scale housing near the neighborhood center that is appropriate to the community character and accommodates “aging in place.”
5. Improve facilities and parking at Lucy Wright Park.
6. Create a walking route to connect the various historic sites in town and install signage to celebrate Waimea’s historic heritage.

7. Explore ways to fund and implement the *Waimea Sports Complex Master Plan (2013)*.

B. IMPROVE MULTIMODAL TRANSPORTATION OPTIONS TO HELP ALLEVIATE PARKING PRESSURES IN THE NEIGHBORHOOD CENTER.

1. Improve pedestrian connectivity between the two nodes of activity along Kaumuali'i Highway at Waimea Road and Makeke Road.
2. Increase safe pedestrian crossings of Kaumuali'i Highway, especially near the high school.
3. Install traffic calming measures at highway intersections.
4. Provide parking facilities near transfer points to major tourist destinations such as Kōke'e and Waimea Canyon. Explore shuttle options to those destinations.

5. 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.

1. Address community concerns regarding decreasing water levels in the Waimea River through a non-adversarial process involving major stakeholders.



Waimea Hawaiian Church

2.4.2 HANAPĒPĒ-‘ELE‘ELE

Hanapēpē-‘Ele‘ele is the gateway to the West Side. As Kaumuali‘i 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 west of the existing town. Their plans include development of approximately 250 house lots in Phases I and II, then developing 234 house lots in a later phase.

Preliminary Vision & Priorities for Hanapēpē-‘Ele‘ele

The vision and priorities are preliminary as they have not been examined through an in-depth community planning effort. They provide guidance for specific areas and will inform future community planning efforts.

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, craftspeople, small farmers, and small businesses. There may be opportunities to increase pedestrian and non-motorized connectivities across the neighborhoods.

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 special community events, and preserves 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 and County agencies. Major connectivity opportunities are envisioned at the highway, along the river, and 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

HANAPĒPĒ-‘ELE‘ELE

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



Hanapēpē Town

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.

The salt pans on Pū'olo Point are an ancient cultural site that still functions today. The recognized stewards of this valued cultural resource are the salt makers, who continue to cultivate pa'akai (sea salt) and manage this resource. The nearby Burns Field Airport (originally known as the Auxiliary Flying Field at Port Allen Military Reservations) is used by commercial operators, and during emergencies by the National Guard and the County Fire Department. The continued cooperation of the airstrip is a concern for residents, salt-makers, and others who question the vulnerability of the airfield to coastal inundation. In addition to the presence of the airstrip, vehicle use on the beach and other activities may negatively impact the integrity of salt-making resources.

'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 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 for Hanapēpē-'Ele'ele

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 Pū'olo/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.



Port Allen Harbor

The Residential Community located to the west of the existing Hanapēpē Heights area and owned by DHHL was downsized to reflect current DHHL plans.

Other Land Use Changes

Seventy-five acres for the planned Lima Ola affordable housing development changed from Agriculture to Residential Community. Additional Neighborhood General was provided to connect Lima Ola to the Neighborhood General located in Port Allen.

Natural Hazards and Climate Change Resilience in Hanapēpē-’Ele’ele

The Hanapēpē-’Ele’ele 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, cultural, 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 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, 3-foot, and 6-foot SLR scenarios can be found in Appendix D. 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 Hawai’i and others for the State sea level rise adaptation report.

Members of the Hanapēpē-’Ele’ele community are participating in a process to formulate a community-based emergency disaster response plan as part of the State’s Hawai’i Hazards Awareness and Resilience Program (HHARP).

Guidance for Community Planning for Hanapēpē-’Ele’ele

The following goals and actions are preliminary and will inform future community planning processes.

I. GOAL: Ensure that Hanapēpē-’Ele’ele is resilient to Climate Change and coastal hazards.

1. In advance of or in conjunction with the Community Plan, conduct detailed hazard, risk, and vulnerability assessment for Hanapēpē when updated sea level rise, erosion rates, and wave inundation planning information is available. Assessment should include the Hanapēpē River area, Port Allen Harbor, and Salt Pond. It should 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, and should encourage relocation to safer areas.
2. Adaptation strategies and approaches should include actions that are based on the ancestral knowledge of Kanaka Maoli (i.e., practice of kilo).

II. GOAL: Maintain the character of Hanapēpē as a historic town and a thriving center for residents, artists, craftspeople, farmers, and small businesses.

A. REVITALIZE THE HISTORIC CENTER OF HANAPĒPĒ TO SHOWCASE AND ACCOMMODATE ARTISTS, SMALL BUSINESSES, SERVICES, AND ACTIVITIES.

1. Cluster new commercial and community activity within the Neighborhood Center along Hanapēpē Road near existing businesses.
2. Encourage incremental infill in vacant spaces within the historic town center.
3. Provide for public and semi-public space to support activities such as markets, festivals, and community events.
4. Provide affordable housing options in a variety of forms consistent with the existing town character.

5. Revitalize the western portion of Hanapēpē Road.
6. Preserve the character of “mom and pop” small shops.
7. Explore the development of a revitalization plan for Hanapēpē Town in collaboration with appropriate state and county agencies.
8. Explore the development of a cultural center to support local traditions, practices, and organizations.

B. MAINTAIN TRAFFIC FLOW AND INCREASE PEDESTRIAN MOBILITY AND MULTIMODAL CONNECTIVITY.

1. Maintain smooth throughflow of traffic on Kaumuali‘i Hwy.
2. Improve riverside access to encourage appropriate recreational use of the river while protecting the estuary.
3. Maintain the historic swinging bridge as an important pedestrian link and visitor attraction.
4. Provide safe pedestrian crossings, especially from Hanapēpē Heights to the town center, and the Neighborhood Center Park and Stadium.
5. Improve pedestrian and bicycle access to the shore, sports facilities, and Port Allen from residential neighborhoods.
6. Explore the creation of a shoreline trail connecting Salt Pond Park to Port Allen.
7. Enable a “park once and walk” environment in the town center by integrating parking and transit facilities near the town center.
8. Reconstruct/replace the 1911 bridge for safety, Americans with Disabilities Act (ADA) access, and a variety of public uses.

III. GOAL: Improve Critical Infrastructure

1. Provide sewerline connections to unserved homes in Hanapēpē Heights and to Salt Pond.
2. Improve the stormwater management system including the expansion of storm drains to better control the collection of runoff.

IV. GOAL: Expand and Enhance Open Spaces and Recreational Facilities

1. Expand Salt Pond Beach Park to accommodate growing community needs and visitors.
2. Maintain sweeping views along the highways.
3. Explore creation of pocket parks and public scenic vantage points overlooking the harbor, shoreline, and Hanapēpē Valley.
4. Establish a wide swath of publicly accessible open space and recreational lands along the coastline from Port Allen to Numila.

V. GOAL: Enhance the Identities and Roles of ‘Ele‘ele and Port Allen

1. Enhance and continue to maintain the relationships and interconnectedness between ‘Ele‘ele, Port Allen, and Hanapēpē.

2.4.3 SOUTH KAUA'I

The South Kaua'i District is bounded by Wahiawā Gulch to the west, and on the east by Hā'upu mountain ridge, Knudsen Gap, and Mount Kahili. The Planning District includes the towns of Po'ipū, Kukui'ula, Kōloa, 'Ōma'o, Lāwa'i, and Kalāheo, and encompasses an area of approximately 31,300 acres (49 square miles).

The *South Kaua'i 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 Kaua'i District that were made in order to ensure consistency with the conventions used in the Future Land Use Map.

Vision and Community Descriptions for South Kaua'i

The Vision for South Kaua'i in 2035 is shown below.

South Kaua'i 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 Kaua'i 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 and 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

SOUTH KAUA'I

Place Type:

Kōloa: Small Town

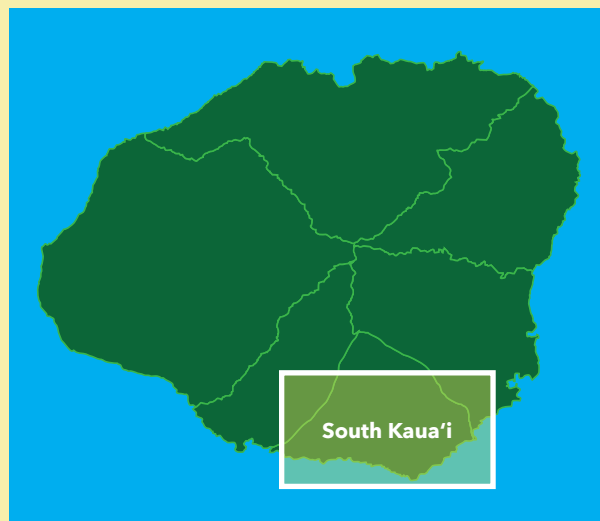
Kalāheo: Small Town

Po'ipū: Village

Kukui'ula: Village

Lāwa'i: Village

'Ōma'o: Crossroads



“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



Brennecke's Beach

Po'ipū

Po'ipū is a collection of makai developments and the historic epicenter for resorts and tourist activity on the southern shore of Kaua'i. It has large expanses of sandy beaches, including the popular Po'ipū Beach Park, and is highly developed with a nearly unbroken maze of resorts and tourist lodgings between Po'ipū Road and the shore. Po'ipū is classified as a Village place type.

The SKCP's Vision statement for Po'ipū in 2035 is as follows:

Po'ipū 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.

Po'ipū is a beach resort that accommodates both a residential community and the island's largest Visitor Destination Area. Supported by the growing community of Kukui'ula to the west and by historic Kōloa Town to the north, Po'ipū is home to about 40 percent of Kaua'i's resort accommodations and is a major center of employment. Po'ipū 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.

I 'ike 'oe ia Kaua'i a puni a 'ike 'ole ia Kaua'i-iki, a'ole no 'oe i 'ike ia Kaua'i

If you have seen all of the places of Kaua'i and have not seen Little Kaua'i, you have not seen the whole of Kaua'i.

(Kaua'i-iki, little Kaua'i, is a stone that stood in a taro patch at Wahiawa, Kaua'i. When it was threatened with destruction by the building of a road, it was rescued by Walter McBryde and taken to Mai'aloa and later to Kukui-o-Lono park, where it stands today).

Walkers, joggers, and bicyclists enjoy the continuous pedestrian/bicycle pathway that runs along the shoreline from the Spouting Horn to Māhā'ulepū.

Kalāheo

Kalāheo is the largest mauka village in the South Kaua'i District. It is bisected by Kaumuali'i 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 Kukuiolono 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 Kaumuali'i Highway along the larger intersections. An active business



Kalāheo Town

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 helps to provide for the needs of a growing population.

Lāwa'i and 'Ōma'o

Lāwa'i is a small mauka neighborhood straddling a winding section of Kaumuali'i 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, Lāwa'i's neighborhood pattern is highly defined and limited by reservoirs and hilly topography. Lāwa'i 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.

'Ōma'o is classified as a Crossroads place type. It consists of a small series of mauka neighborhoods that reach southward from Kaumuali'i 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. 'Ōma'o is a small residential community with a small central park.

The SKCP's Vision statement for Lāwa'i and 'Ōma'o in 2035 is as follows:

Lāwa'i will remain a rural crossroads with a limited commercial area centered on the Post Office and Old Cannery. 'Ōma'o will maintain its value as a small rural residential community.

Lāwa'i and 'Ōma'o are valued as rural crossroads and small rural residential communities. The small commercial area around the old Lāwa'i Cannery is developed with shops and services that serve the nearby residential neighborhoods, as well as people traveling along Kaumuali'i 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 Lāwa'i.

Kukui'ula

Kukui'ula is a growing area with many important assets: Spouting Horn, Kukui'ula 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 Kukui'ula in the SKCP.

Land Use Map Changes for South Kaua'i

The South Kaua'i 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 Kaua'i, 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 Kaua'i uses a Form-Based Code Framework and has regulating plans for three of these SPAs (Kōloa Town, Kalāheo Town, and the Po'ipū Roundabout). It uses Neighborhood Center and General Designations, as well as a Neighborhood Edge designation for areas within a 1/2-mile radius (ten minute walk) from the Neighborhood Centers. The SPAs are required to follow the design and land use standards detailed in the South Kaua'i Form-Based Code regardless of the underlying zoning.

The other three areas (Lāwa'i Cannery, Numila, and Po'ipū 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 Town or a Small Town. The Po'ipū Gateway Mixed-Use Village is classified as a Large Town and Lāwa'i Cannery and Numila are classified as Small Towns. These place 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 Kaua'i form-based code.

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 Kaua'i 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 build form and relationship to other communities.

Other Land Use Changes

The SKCP supported expansion of the Visitor Destination Area (VDA) along Lāwa'i Road due to the concentration of non-conforming TVRs makai of the highway. This recommendation was not extended to the existing neighborhood of Ho'one Road.

Due to the General Plan's policy to not expand the VDA, the Lāwa'i Road VDA recommendation has been removed and the neighborhood will remain a residential community.

To be consistent with the community's desire to focus revitalization and development around the town core, sixty (60) acres of State land located above Weliweli Tract was changed from Residential Community to Agriculture.

The SKCP identified the boundaries of a potential growth area to be vetted through the Hanapēpē-'Ele'ele 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 'Ele'ele and Port Allen. Because of the boundary shift between planning districts, it falls within the South Kaua'i planning district. On the South Kaua'i Community Plan Land Use Map, it is designated Agriculture and shown as a placeholder to be defined as part of the future Hanapēpē-'Ele'ele Community Plan update. No projected residential growth for South Kaua'i was allocated to the area.

In this plan, the Planning District boundary between South Kaua'i and Hanapēpē-'Ele'ele is shifted from Wahiawa Gulch to Kalāheo Gulch. Due to this change, the potential growth area is now included within the Hanapēpē-'Ele'ele Planning District.

Natural Hazards and Climate Change Resilience in South Kaua'i

The South Kaua'i 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 *Kaua'i Climate Change and Coastal Hazards Assessment* conducted a preliminary Sea Level Rise (SLR) Inundation Assessment and Needs Po'ipū (Needs Assessment) using "bathtub" still water flood modeling from the NOAA sea level rise viewer. The inundation maps for the 1-foot, 3-foot, and 6-foot SLR scenarios can be found in Appendix D. Po'ipū 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 Hawai'i 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.

The South Kaua'i Community Plan (2015)

Community planning guidance for the district is contained in the SKCP. 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.

2.4.4 LĪHU’E

The Līhu’ē 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’ē region includes the main communities of Līhu’ē, Hanamā’ulu, and Puhi. Sub-areas and neighborhoods include Nāwiliwili, Kapaia, Kīpū, Kālepa, Nūhou, Niumalu, Kalapakī, and Pū’ali.

The most recent *Līhu’ē Community Plan* (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’ē Community Plan are comprehensive and address a range of topics. Only those that are specific to the communities in the Līhu’ē District are reproduced here. In addition, this section explains changes to the Land Use Map for Līhu’ē District that were made in order to ensure consistency with the conventions used in the islandwide Land Use Maps.

Vision and Community Descriptions for Līhu’ē

The Vision for the Līhu’ē District is as follows:

The Līhu’ē 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’ē 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’ē Community Plan (2015)

Community descriptions for the communities of Līhu’ē, Hanamā’ulu, and Puhi are provided below.

Līhu’ē Town

Līhu’ē Town is the County seat of Kaua’i and the island’s major commercial and civic center. It is the only community on Kaua’i that consists of four or more neighborhoods and can be classified as a Large Town place type.

Līhu’ē Town is bounded by the Hanamā’ulu and Nāwiliwili Gulches on the north and south and by the shoreline and the Isenberg neighborhood

LĪHU’E

Place Type:

Līhu’ē: Large Town

Hanamā’ulu: Small Town

Puhi: Village

Nāwiliwili: Crossroads

Kapaia: Crossroads



along Kūhiō Highway on the east and west. Key commercial centers in Līhu’ē 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 Līhu'e's "Main Street."

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 1950s and 1960s, 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.

Land Use Map Changes for Līhu'e

The Līhu'e 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 Edge Boundary

Līhu'e is the only district on Kaua'i to have an Urban Edge Boundary delineation. The boundary was adopted through the *Līhu'e Community Plan* (2015) to limit urban sprawl, defining where higher density development should be contained throughout the district. The Urban Edge Boundary is intended to facilitate preservation of agricultural lands and uses by focusing future growth and development within existing or identified Urban Centers and Neighborhood Centers. Within the Urban Edge Boundary, there are 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



Commercial building with street frontage on Kūhiō Highway in Līhu'e.

accommodate projected population growth. Most of these Neighborhood Centers are within a half mile of one another. The Neighborhood General designation is not applied in Līhu'e because most of these half-mile walksheds overlap. Instead, the General Plan Urban Center designation is retained in those developable areas outside of designated Neighborhood Centers.

Neighborhood Center & Residential Community on DHHL Wailua Lands

To ensure consistency with the Department of Hawaiian Home Lands (DHHL) *Kaua'i Island Plan* (2004), neighborhood center was designated on the mauka and makai side of DHHL's Wailua lands. Residential Community was also added on the mauka side of the highway to reflect DHHL's vision for more beneficiary housing in this area.

Other Land Use Changes

The Residential designation was removed from several areas in Pū'ali, to the southeast of Puhi, as they were not adjacent to an existing Neighborhood Center. A portion of the EWM property near the northern end of the District was designated as Residential.

A new University Zone designation is applied to the Kaua'i Community College area and the surrounding schools to acknowledge the future expansion of facilities, housing, and uses to better serve students, faculty, and staff. To be consistent with the policy to limit resort expansion, a portion of Nukoli'i was changed from Resort to Agriculture.

Natural Hazards and Climate Change Resilience in Līhu'e District

The Līhu'e 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 Kaua'i 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 National Oceanic and Atmospheric Administration (NOAA) SLR viewer.



Kaua'i Museum with the County Building lawn and associated monument in the foreground.

The inundation maps for the 1-foot, 3-foot, and 6-foot SLR scenarios can be found in Appendix D. 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 Hawai'i and others for the State SLR adaptation report.

The Needs Assessment also notes that the Federal Emergency Management Agency FEMA FIRM maps indicate most of the shoreline around Kalapakī and Nāwiliwili is outside the 100-year flood plain (Zone X) 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).

Goals, Policy Objectives, and Actions for Līhu'e

Community planning guidance for the district is contained in the *LCP* and *Līhu'e Town Core Urban Design Plan* (2010).

2.4.5 EAST KAUA'I

The East Kaua'i district extends from the Wailua River north to Moloa'a, including the Kapa'a-Wailua basin, Keālia, and Anahola. The Kapa'a-Wailua basin is home to a large portion of Kaua'i's population. An urban corridor extends along Kūhiō Highway from Haleilio Road in Wailua to Kawaihau Road, at the northern edge of Kapa'a Town.

East Kaua'i has extensive mauka residential areas, including Kapahi and Wailua Homesteads.

Preliminary Vision & Priorities for East Kaua'i

The vision and priorities are preliminary as they have not been examined through an in-depth community planning effort. They provide guidance for specific areas and will inform future community planning efforts.

By 2035, We Envision an East Kaua'i 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 Kapa'a 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.

EAST KAUA'I

Place Type:

Wailua: Village

Kapahi: Village

Kapa'a: Large Town

Anahola: Rural Crossroads (near Post Office);

Future Village (at Anahola Marketplace)

Degree of Change:

Wailua: Incremental

Kapahi: Incremental

Kapa'a: Transformational

Anahola: Incremental at Anahola Post Office;

Transformational at Anahola Marketplace



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 1/2 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 Pu'uka'a 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 regarding 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 Olohena road with the idea that the Main Street environment at Olohena 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 a Small Town place type, concentrating growth in and



Kapa'a Town

around three 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.

The Future Land Use Map moves forward the 2000 General Plan's higher-intensity designation for the area, but also updates and refines the designation based on the first alternative map scenario and new population projections. The previous Urban Center designation is changed to Neighborhood General, which will require a mix of residential building types and a walkable, compact form where connectivity to the school and Kapa'a Town is emphasized. The size of the future Urban District boundary amendment should consider watershed boundaries and accommodate future housing projections.

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 Kaua’i

The East Kaua’i Land Use Map is shown on Figure 5-6. Updates to Land Use Designations since the 2000 General Plan version are described below.

Urban Center

The previous Urban Center designation on and surrounding the Kapa’a Middle School has been updated to Neighborhood General.

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 1/4-mile of Neighborhood Centers. In Kapa’a 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 1/4-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.

Other Land Use Map Changes

No additional changes to the land use map for East Kaua’i are made.

Natural Hazards and Climate Change Resilience in East Kaua’i

The East Kaua’i district is vulnerable to natural hazards, including marine and terrestrial flooding, wave inundation, erosion, 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 Kapa’a is particularly vulnerable due to development density. Smaller rural communities of Anahola and Moloa’a are also vulnerable to flooding due to their low-lying nature adjacent to stream mouths.

The Kaua’i 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, 3-foot, and 6-foot SLR scenarios can be found in Appendix D. 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 Kapa’a-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



Mountain views from Anahola

above information, which is currently being developed at researchers at University of Hawai'i 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-Kapa'a shoreline, which is expected to increase with accelerated SLR. Kapa'a 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 the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) 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 3, Section IX Actions point to the need to update the County flood program.

Guidance for Community Planning for East Kaua'i

The following goals and actions are preliminary and will inform future community planning processes.

I. GOAL: Accommodate East Kaua'i's projected housing needs.

1. Allow the buildout of communities based on existing zoning with the exception of areas impacted by future sea level rise and other hazards.

2. In new communities, ensure the majority of units are "missing middle housing" and affordable by design.
3. Design new communities to be walkable, compact, and connected to Kapa'a Town.
4. The build-out phasing of new communities should be coordinated with the implementation of priority projects in the Kapa'a Transportation Solutions Plan.

II. GOAL: Ensure that East Kaua'i is resilient to Climate Change and coastal hazards.

1. Conduct detailed hazard, risk, and vulnerability assessment for coastal hazards with climate change and sea level rise in East Kaua'i when updated sea level rise, erosion rates, and wave inundation planning information is available. Assessment should include Wailua-Kapa'a shoreline and low-lying areas around the town, canals and rivers, critical infrastructure, residential, and commercial facilities. Additional assessments should be conducted in vulnerable areas of Anahola and Moloa'a. Assessments should 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, and should encourage relocation to safer areas.
2. Seek partnerships with State, UH, County, and private entities to develop 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.

III. GOAL: Celebrate Wailua's rich and cultural heritage.

A. PROTECT SCENIC CORRIDORS AND SITES OF CULTURAL SIGNIFICANCE.

1. Update inventory of cultural sites.
2. Coordinate Work with Open Space Commission and Kaua'i Historic Preservation Commission.
3. Discourage development away from scenic corridors and areas of cultural significance.

B. SHARE AND EDUCATE VISITORS AND THE COMMUNITY ABOUT WAILUA’S HISTORY.

1. Develop signage with historical information.
2. Establish a Wailua Cultural Center and/or Visitor information center.

IV. GOAL: Increase connectivity within the Wailua corridor to better connect residential, resort, commercial, and recreational uses.

1. Clear and maintain vegetation along Kuamo’o and Olohena Road for pedestrian and bicyclists safety and comfort.
2. Provide alternative routes for pedestrian and bicyclists from Wailua Houselots to Kuamo’o Road.
3. Add bicycle lanes on Kuamo’o Road and Olohena Road.
4. Increase frequency of Wailua shuttle.
5. Establish more park and ride sites in Wailua Homesteads and Wailua Houselots.

V. GOAL: Enhance historic Kapa’a Town.

A. ENCOURAGE INFILL DEVELOPMENT AND MIXED-USE WITHIN THE TOWN CORE.

1. Educate community members and landowners about special planning areas.
2. Provide incentives to property owners of vacant parcels in Historic Kapa’a Town to develop buildings for mixed-use.
3. Update East Kaua’i Community Plan and incorporate Form-Based Code for Historic Kapa’a Town.
4. Provide a range of affordable housing types.
5. Develop a parking audit for Kapa’a Town.

B. PRESERVE THE HISTORIC CHARACTER OF KAPA’A TOWN.

1. Update East Kaua’i Community Plan and incorporate Form- Based Code for Historic Kapa’a Town.
2. Improve design guidelines for buildings and streetscapes.
3. Educate property owners on incentives for historic preservation.

VI. GOAL: Increase connectivity from the town to recreation and residential areas along Kukui/ Olohena Road.

A. IMPROVE PEDESTRIAN, BICYCLE, AND TRANSIT CONNECTIVITY.

1. Add sidewalks along Olohena Road from the Kapa’a Middle School to the town.
2. Ensure safe pedestrian and bicycle paths that connect the beach parks to the town and to residential areas.
3. Ensure new communities support the County’s mode shift goals and improve vehicular and pedestrian connectivity to parks, schools, and Kapa’a Town.

VII. GOAL: Address traffic congestion.

A. IMPROVE CAPACITY WITHIN THE WAILUA-KAPA’A CORRIDOR.

1. Implement the Kapa’a Transportation Solutions projects.
2. Continue to work with HDOT.

VIII. GOAL: Support DHHL’s Island General Plan and Anahola Plan.

A. IMPROVE COLLABORATION BETWEEN THE COUNTY, DHHL, AND OTHER STAKEHOLDERS.

1. Work with the DHHL to ensure the Anahola Plan is compatible with the area’s Community Plan.

2.4.6 NORTH SHORE

The North Shore Planning District extends from Moloa'a Bay on the east to Puanaiea Point on the west, which is eight miles west along the Nā Pali Coast from Hā'ena. The North Shore includes the communities of Hā'ena, Wainiha, Hanalei, 'Anini, 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 Kē'ē Beach to the Hanalei Pier are must-see sights for nearly all visitors to Kaua'i. 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 for the North Shore

The vision and priorities are preliminary as they have not been examined through an in-depth community planning effort. They provide guidance for specific areas and will inform future community planning efforts.

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.

"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

HANALEI, KĪLAUEA, & PRINCEVILLE

Place Types:

Hanalei: Village

Kīlauea: Small Town

*Princeville: Undetermined
(Village, or no place type to be applied)*

Character/Key Values:

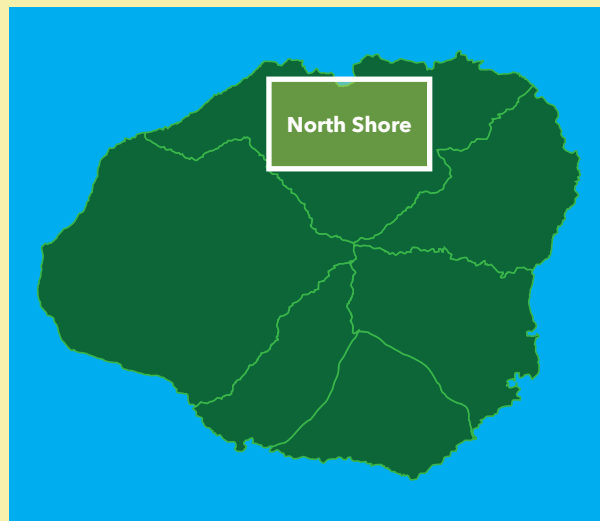
- *Rural/Isolated*
- *Resilient/Protective/Healthy*
- *Natural Beauty/Verdant*
- *Challenged/Threatened*

Degree of Change:

Hanalei: Minimal

Kīlauea: Incremental

Princeville: Incremental



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, Kē'ē Beach, and Hā'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.

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



Hanalei Bay

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 Līhu'e, Kīlauea is the only other town with a micro-regional plan. Community outreach reveals much of the information included in the Kīlauea Town Plan (2006) 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. The Town Plan supports additional housing development of approximately 200-240 units on undeveloped land west of the town. The community felt it was important that the majority of any future residential development be affordable. For future growth to occur, a regional wastewater treatment solution will have to be developed. Town expansion will also provide the opportunity for a new park and public school site. A new commercial development, currently under construction, will improve access to neighborhood-serving services. Should town expansion occur, an assessment of commercial space needs should be conducted.

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 center, and coordinated multimodal trail options between North Shore communities and even between different moku. 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 Mini Golf; at Kolo Road, a current primary entrance to the community; and, at Ho'oku'i 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 Mini Golf property.

Land Use Map Changes for the North Shore

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.

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 was removed due to the community's desire to not expand the existing Princeville Visitor Destination Area boundaries.

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, 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 *Kaua'i Climate Change and Coastal Hazards Assessment* conducted a preliminary Sea Level Rise (SLR) Inundation Assessment and Needs for Hanalei, Wainiha, and Hā'ena (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, 3-foot, and 6-foot SLR scenarios can be found in Appendix D. 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 Hawai'i 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.

Policy Opportunities for the North Shore

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 for the North Shore

The following goals and actions are preliminary and will inform future community planning processes.

I. GOAL: Ensure that the North Shore is resilient to Climate Change and coastal hazard

1. Conduct a detailed hazard, risk, and vulnerability assessment for coastal hazards with climate change and SLR in Hanalei and other North Shore communities when updated sea level rise, erosion rates, and wave inundation planning information is available. Assessment should include all developed areas of Hanalei, particularly around the streams and beach front parcels, and include critical infrastructure (e.g., roads and bridges), residential, visitor, and commercial facilities. Additional assessments should be conducted in vulnerable areas of Wainiha, Hā'ena, Kalihiwai, and 'Anini. Assessment should 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, protection, and encouraged relocation to safer areas.

II. 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.

1. Require off-street parking lots to be located behind buildings.
2. Allow modest flexibility in site frontages to accommodate pedestrian uses or gathering spaces.

B. ENCOURAGE COMPLETE STREETS THAT BALANCE PEDESTRIAN, BICYCLE, TRANSIT, AND VEHICLE NEEDS WHILE MAINTAINING HANALEI'S RURAL CHARACTER.

1. Provide a path or informal sidewalk on the east side of town to connect existing businesses along Kūhiō Highway.
2. Consider a shared use path mauka of Kūhiō Highway to provide a parallel route for pedestrians and bicycles.
3. Support a coordinated shuttle service for the North Shore and provide a park-and-ride location and shuttle stop in Hanalei.
4. Install traffic calming features to improve the safety of pedestrian crossings.
5. Explore a bike share program for Hanalei to reduce vehicular trips.

C. PROTECT HANALEI'S UNIQUE HERITAGE RESOURCES. PRESERVE THE CHARACTER AND PROTECT THE KALO LO'I OF HANALEI.

1. Preserve the character and integrity of Hanalei's historic highway and bridges.
2. Protect the kalo lo'i of Hanalei in perpetuity.

D. BUILD COMMUNITY RESILIENCE THROUGH EDUCATION AND AWARENESS.

1. Educate visitors about threats from tsunami and other hazards and measures for preparedness and response.

III. 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.

1. Require the provision of good roadway and multimodal connections between Princeville Phases I and II.
2. Develop new resorts at an appropriate, small-footprint scale to match the rural surroundings.
3. Limit development mauka of the highway, concentrating new residential and institutional uses closer to existing neighborhoods.
4. 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.
5. Support a coordinated shuttle service for the North Shore and provide a park-and-ride location and shuttle stop in the Princeville Shopping Center.

IV. GOAL: Provide for modest growth of Kilauea Town with improvements to accommodate resident needs.

A. EXPAND THE TOWN CENTER TO PROVIDE FOR RESIDENT NEEDS.

1. Ensure there is an adequate neighborhood-serving commercial space.
2. Provide additional housing in the areas designated Neighborhood General and Neighborhood Center. Prioritize the water and wastewater infrastructure improvements needed for this to occur. With public and private partners, build a sewage treatment system to accommodate commercial, industrial, and residential units, and replace aging cesspools and better protect the environment.

3. 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 Kilauea, and provide a backbone for new residential development.
4. Support community-driven revitalization efforts and programs.
5. Continue to work with the U.S. Fish and Wildlife Service to address the need for traffic reduction in Kilauea Town and at the Refuge by establishing visitor parking area(s) and a shuttle service.
6. Include buildings that accommodate live/work arrangements in the Town Center.
7. Incorporate industrial-zoned lands into the new Town Center for production-oriented businesses.
8. Obtain land to expand the Kilauea County ballpark.

B. IMPROVE PEDESTRIAN MOBILITY AND MULTIMODAL CONNECTIVITY.

1. Improve sidewalk, path, and trail connections between the Town Center, agricultural center, and beaches.
2. Improve safe access and visibility along Kūhiō Highway utilizing roundabouts and other traffic calming measures and gateway features.
3. Support a coordinated shuttle service for the North Shore and provide park-and-ride locations and shuttle stops in Kilauea Town.
4. Enable a “park once and walk” environment in the town center by integrating parking and transit.



Independence Day at Vidinha Soccer Field, Lihū'e District (Courtesy of Larry Loos, through Creative Commons).

A place-based zoning framework will allow communities to shape the feel and design of future infill development and housing types.



3.0 ACTIONS BY SECTOR

Along with future land use and Community Planning, the following ten sectors represent important areas to be addressed when planning Kaua'i's growth and development. In identifying the sector objectives and actions, care was given to ensure consistency with the goals and policies from Chapter 1. Table 3-1 illustrates the cross-cutting nature of the goals and sectors.

The sectors are:

I. THE WATERSHED

II. HOUSING

III. TRANSPORTATION

IV. CRITICAL INFRASTRUCTURE

V. SHARED SPACES

VI. ECONOMY

VII. HERITAGE RESOURCES

VIII. ENERGY SUSTAINABILITY & CLIMATE CHANGE MITIGATION

IX. PUBLIC SAFETY & HAZARDS RESILIENCY

X. OPPORTUNITY & HEALTH FOR ALL

The following four implementation tools are used to categorize each subsection's actions:

Permitting and Code Changes

Actions within this tool address new development and how it is approved. Permitting actions will be reviewed during the approval process. Specific approvals include State Land Use boundary amendments; County Zoning amendments; and Zoning, Special Use, and Variance Permits. "Code Changes" 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.

Projects and Programs

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

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.

Table 3-1 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.
Housing	Provide housing to accommodate growth within and near town centers.	Prevent housing sprawl into Open and Agriculture lands.	Provide housing for multigenerational families and aging in place.	Ensure affordable housing is provided in proximity to job centers.
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.
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.
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.
Economy	Promote economic diversification.	Protect high-quality agricultural lands from development.	Partner to enhance education and employment opportunities.	Provide infrastructure to strengthen and grow small business.
Heritage Resources	Encourage preservation and restoration of historic structures and features in Kaua’i’s town centers.	Preserve and protect the integrity of special places for current and future generations.	Preserve access to wahi pana for traditional cultural practices.	Celebrate the cultural and historic features that represent Kaua’i’s diverse cultural influences.
Energy Sustainability & Climate Change Mitigation	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.
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.



The peaks of Wai'ale'ale and Kawaikini

SECTOR: I. THE WATERSHED

Kaua'i's 66 watersheds convey rainwater from mauka to makai and replenish aquifers along the way. This water flow has shaped Kaua'i over six million years, sculpting the Na Pali Coast and Waimea Canyon while creating the coastal plains where human settlement occurs. The health of the watershed, from ridge to reef, makes all life possible. Yet our island's watersheds are fragile and under threat from human activities, invasive species, and climate change.

Perpetuating the Wisdom of Native Hawaiian Watershed Management

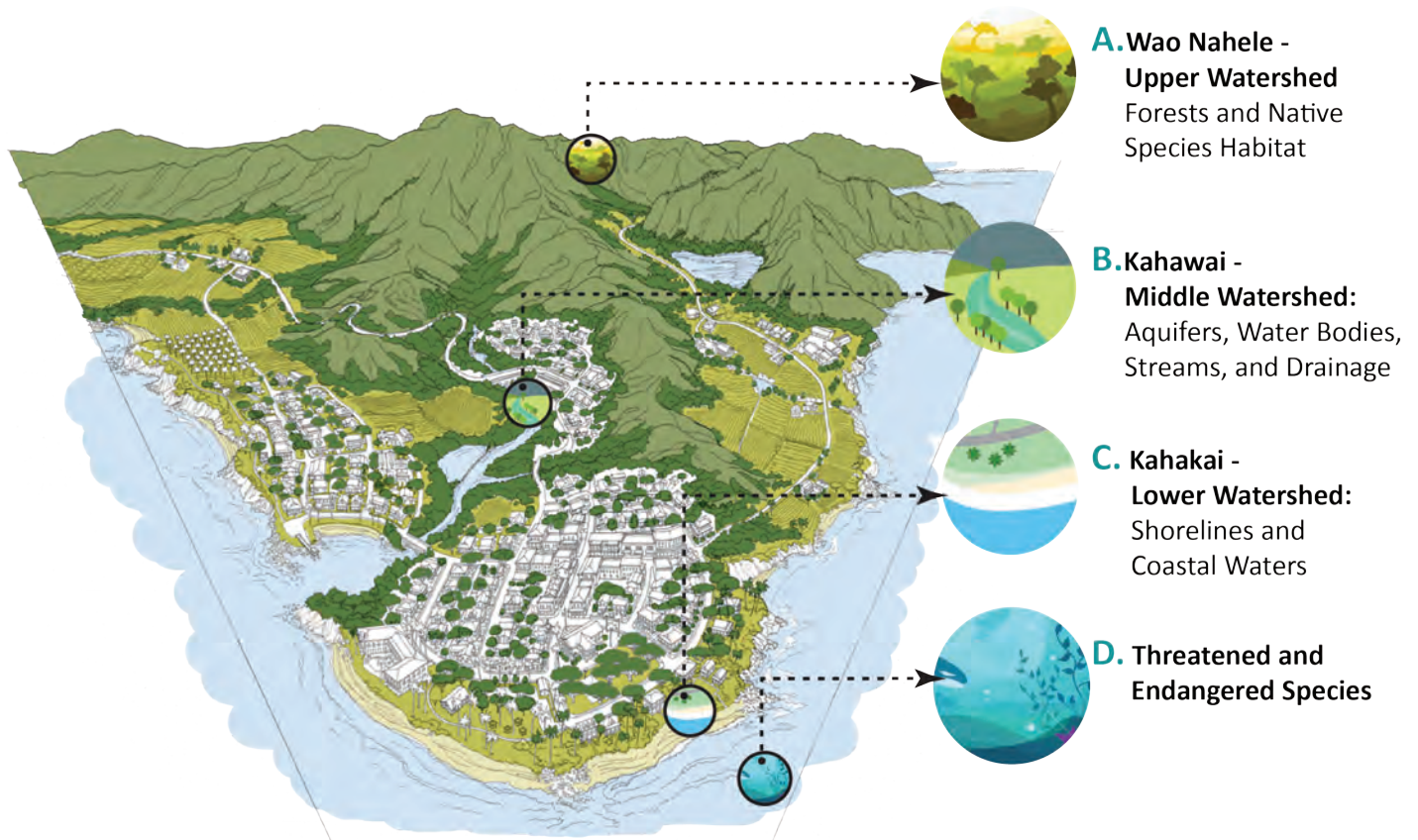
Water is held in trust by the state, for the benefit of the people. Public trust purposes, which receive priority over private commercial uses, include domestic uses, Native Hawaiian and traditional and customary rights, appurtenant rights, environmental protection, and reservations for the Department of Hawaiian Home Lands. Effective watershed management requires both landscape-scale conservation and site-specific mitigation all while balancing human uses with resource protection. Fortunately, Kaua'i can use its traditional system of resource management - the ahupua'a system - as a model for cultivating environmental stewardship. For many centuries,

Hawaiian society thrived under the recognition that the community, forests, streams, and ocean are interconnected. This view is embodied in the ahupua'a system, which was utilized across Hawai'i in i ka wā kahiko (meaning "in old times/long ago/in the age of antiquity"). A typical ahupua'a, or land division, follows watershed lines and extends from the highest point mauka down to the fringing reef. Within the ahupua'a are several subzones: Wao Nahele (upland), Wao Kanaka (cultivated flat land/plateau), Kahawai (freshwater resources), and Kahakai (coastal areas). A konohiki managed the ahupua'a to ensure the various ecological units functioned adequately to support and provide for the area's residents. Kaua'i's ahupua'a boundaries are shown on the Heritage Resources Map.

Today, the concept of ahupua'a management is not only recognized as Kaua'i's cultural legacy, but also for its contribution to modern land and natural resource management. Although today's average household may not draw from the ahupua'a for all their needs, everyone benefits from the services that a healthy watershed provides. Successful watershed management is paramount to a sustainable future. However, the growing population creates demands which place pressure on watersheds. The threats include development, improper agricultural practices, invasive species, erosion, climate change, and natural hazards. Furthermore, there is little doubt that climate change will impact watershed health in ways unprecedented in modern times. The legacy

of this cultural practice is perpetuated through the General Plan's goal of sustainability and the vision for thriving ecosystems. By building upon the wisdom of the ancient Hawaiians, who lived in harmony with the land, the General Plan recognizes the complexity and interrelatedness of our island's watersheds and human uses. The organization of this sector's subsections follows the ecological units identified in the ahupua'a: Wao Nahele (The Upper Watershed), Kahawai (Freshwater Resources and Drainage), and Kahakai (Coastal Areas). A fourth subsection, "Threatened and Endangered Species," includes actions for protecting Kaua'i's native plants and animals.

Figure 3-1 Components of the Watershed Sector



1. WAO NAHELE - THE UPPER WATERSHED

The upper watershed and its forests are critical to the health and integrity of the ecosystem. It provides the essential services of water quality protection, flood mitigation, and fire protection. Moreover, it comprises the vestiges of Kaua'i's native forests and landscapes which are the habitat for many endangered and at-risk species.

Objective: To conserve the upper watershed and restore native habitat and forested areas.



1.1 Supporting the State in Upper Watershed Management

Kaua'i's upper watershed is largely under State jurisdiction, both through ownership and by regulatory authority. The State Land Use Conservation District comprises 55 percent of Kaua'i's land area. Within the Conservation District are 24 State-managed reserves, preserves, and park areas. These are shown on the Heritage Resources Map in Chapter 5. The Department of Land and Natural Resources (DLNR) has responsibility for protecting the public trust and managing forest resources, natural area reserves, and state parks. The forests harbor rare and endangered plant and animal species, and include native ecosystems which are relatively intact. In 2011, the State launched "The Rain Follows the Forest" - a management initiative to sustain fresh water resources by doubling the amount of protected watershed area. State initiatives also include the Aloha+ Challenge and Governor Ige's "World Conservation Congress Legacy Commitment: 30 by 30 Watershed Forests Target" to protect 30% (253,000 acres) of Hawai'i's highest priority watershed forests by 2030.

1.2 Aligning Partners for Management of the Watershed and Forests

In 2003, the Kaua'i Watershed Alliance (KWA) was formed. KWA's members are the Department of Water and the public and private landowners within the State Land Use Conservation District. "The Mission of the Kaua'i Watershed Alliance is to PROTECT, PRESERVE, and MANAGE our valuable watershed resources for the benefit of our residents, communities, and all future generations through the concerted efforts of its members." Their projects focus on managing the landscape-scale damage to the watershed caused by feral animals and invasive weeds. Management activities include planning, strategic animal control, invasive weed control, monitoring of forest health, and constructing and maintaining protective fences. In alignment with the State's goal in "The Rain Follows the Forest" initiative, the KWA Management Plan calls for fencing and managing 25,000 acres in the next ten years.

For the Wao Nahele—the Upper Watershed—to benefit from conservation efforts, the community should carefully consider the importance of balancing the sustainable use of this area with the sensitivity and uniqueness of these upper native forests. They have to-date survived the fate of our native lowland forests—destruction by invasive species, wildfires, and incompatible uses by humans. They have a great value to all of us, as they make up almost 50% of Kaua'i's land area.

A. PERMITTING AND CODE CHANGES

1. Review State DLNR Forest Reserve Plans when development is adjacent to Forest Reserves.
2. Require best management practices for resource management.

B. PLANS AND STUDIES

1. Utilize the Forest Reserve and Natural Area Reserve Plans in Community Planning processes and share information regarding forest management activities with the public.
2. Through appropriate county departments, support KWA members in the development of future watershed management plans and appropriate studies as needed for the health of the upper native forests.

C. PROJECTS AND PROGRAMS

1. Support projects that conserve and protect our remaining endemic forests and landscapes in the upper watershed.
2. Develop collaborative projects that support goals shared by the Forest Reserve Management Plans, County's Open Space Commission, Nā Ala Hele Commission, the Kaua'i Watershed Alliance, and others.
3. 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, and non-governmental organizations), mauka to makai.
4. Utilize best practice watershed management plans, such as the Hanalei Watershed Management Plan, as examples for other communities to employ.
2. Support the State's "World Conservation Congress Legacy Commitment: 30 by 30 Watershed Forests Target" to protect 30% (253,000 acres) of Hawai'i's highest priority watershed forests by 2030.
3. Educate the public and visitors about native species protection, wildfire prevention, the spread of invasive species, and water quality protection.
4. Increase opportunities for public access to forests in a way that is ecologically sustainable.
5. Promote education and enforcement campaigns to curb littering and dumping in forest areas. Provide trash and recycling receptacles near popular trailheads and picnic areas.
6. Support and educate about State and Federal landowner assistance programs that support private forest-restoration efforts, such as the Conservation Reserve Enhancement Program and Forest Stewardship Program.

D. PARTNERSHIP NEEDS

1. Support the management and protection of Kaua'i's forest resources and upper watershed areas in the Conservation District.



Ho'opi'i Falls, East Kaua'i District

2. KAHAWAI - MIDDLE WATERSHED, DRAINAGE, AND FRESHWATER RESOURCES

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.

Objective: 1) To protect, restore, and enhance freshwater resources to support aquatic, environmental, and cultural resources; and, 2) to recognize and mitigate impacts from the built environment to the mid-watershed area.



2.1 Understanding Our Reliance on Aquifers and Streams

Water is a public trust resource in Hawai'i. The DLNR is responsible for managing water resources and water use statewide, including the protection of watersheds and natural stream environments. These management activities are guided by the State Water Plan, which includes five components: *Water Resource Protection Plan*, *Water Quality Plan*, *State Water Projects Plan*, *Agricultural Water Use and Development Plan*, and the *County Water Use and Development Plan*.

The *Kaua'i Water Use and Development Plan* (WUDP) assesses the sustainable yield of the aquifer in relation to current and future water demands. The WUDP is currently being updated and will set forth policies to guide the County in its planning and management of water resources.

Kaua'i's aquifer supplies the vast majority of our domestic water and is divided into three sectors that are comprised of 13 systems (see Figure 3-2). 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 by the Commission on Water Resources Management (CWRM) as sustainable yield.¹² Actual withdrawal is a small fraction of total sustainable yield. Total well production on Kaua'i was 14.37 mgd in 2014 compared to an estimated sustainable yield of 312 mgd.¹³

The aquifer is fed primarily through rainfall, which ranges from 20 to 400 inches annually 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.^{14 15} Also, Kaua'i has no State-designated Groundwater Management Areas.

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

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 affected by the combined effects of prolonged drought, withdrawals, and the reduction of agricultural irrigation, as observed by the community to date in the Lihu'e Basin.¹⁶

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 continual recharge by seepage from rainfall and streamflows 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 3-3.

12 Water Resource Protection Plan, 2008
 13 Adequacy of Future Infrastructure Analysis, 2015
 14 Fukunaga & Associates, County of Kaua'i Water Use & Development Plan Update (unpublished draft)
 15 Technical Memorandum, May 2015 and Sept 2015 updates
 16 Effects of Irrigation and Rainfall Reduction on Ground-Water Recharge in the Lihu'e Basin, 2006

Figure 3-2 Aquifer Sectors on Kaua'i

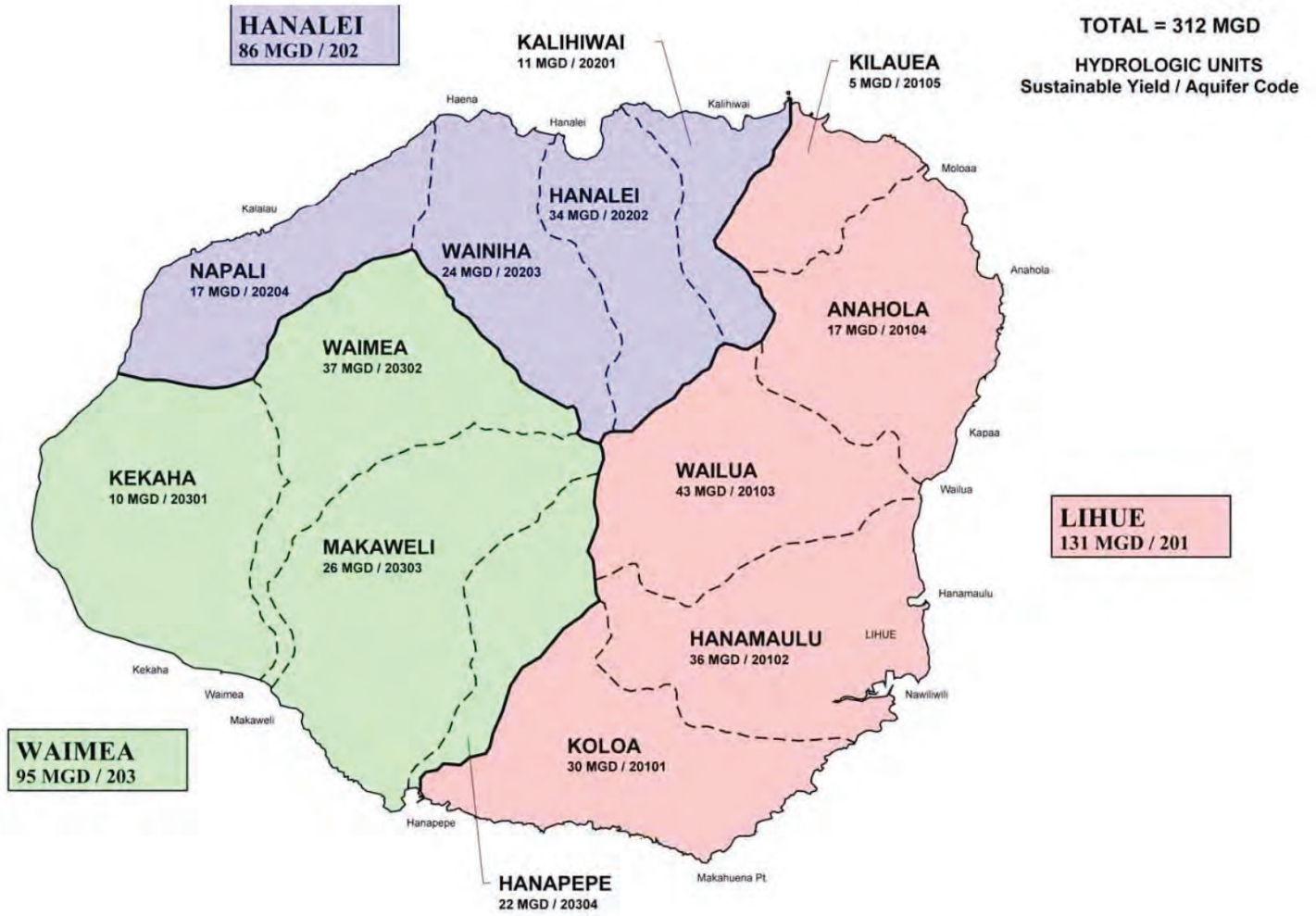
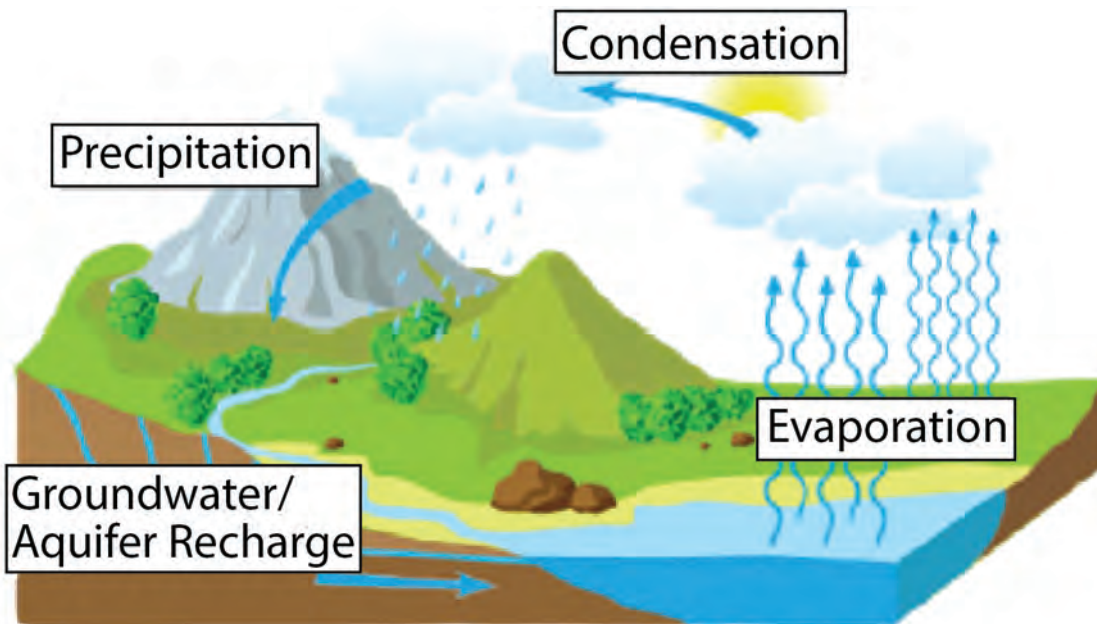


Figure 3-3 Hydrologic Cycle



2.2 Protecting Drainage Systems and Water Quality

The mid-watershed provides an important transfer zone between the upper and lower watershed. It represents the area of greatest alteration from human uses, such as residential development and agriculture. Resource use, waste disposal, sedimentation (as a result of deforestation), and changes in hydrology due to development, dams, and water diversions greatly impact watershed function and water quality.

Kaua'i's drainage system is mostly natural—comprised of its streams and rivers. This system is complemented by structures such as irrigation ditch systems and flood protection levees along certain streams. Kaua'i does not have an islandwide drainage master plan, but has in place drainage standards that require new development to maintain storm runoff to pre-development rates. Drainage master plans for new development must conform the requirements of the *Kaua'i County Storm Water Runoff System Manual*.

The Department of Public Works intends to focus on specific problem areas by developing strategic plans for flood-prone areas such as Hanalei, Nāwiliwili, Kapa'a, Wailua, Po'ipū, and Kekaha. These plans would provide detailed analyses of the flood conditions and specify preventative and remedial actions.

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 sediment, 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, results from human activity on the land.

Protecting water quality from both nonpoint and point sources 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 Program to address nonpoint source pollution requirements. The State also has primary responsibilities for watersheds through DLNR's management of State Conservation District lands.

The County's primary responsibilities for water protection are associated with its authority over State Land Use 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 authority, such as the ordinances for subdivision, flood control, drainage, and grading.

2.3 Protecting 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 2014.¹⁷ 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 swordtail, have led to the decline of many native species.

Water in 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 is now in limbo. In order to determine the legal status of existing diversions, the State Water Code requires an assessment of a stream's instream flow. The development of instream flow standards (IFS) is a scientific process which analyzes 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 perennial streams should be implemented and green infrastructure should be encouraged to reduce nonpoint pollution.

¹⁷ State of Hawai'i Water Quality Monitoring and Assessment Report, 2014

2.4 Utilizing Community Partnerships in Water Management

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 3).

Although the priority for conservation activity is the upper watershed, there is also a need to restore Kaua'i's native lowland forests which have been largely destroyed by human activity, wildfires, and invasive species. Reestablishment of native habitat could provide scenic values, cultural gathering areas, hiking and other recreational uses, and educational opportunities. Carefully managed forestry efforts also provide opportunities for green energy production, food forests, and materials for local manufacturing.

A. PERMITTING AND CODE CHANGES

1. Avoid impacts to natural hydrologic recharge areas, stream corridors, floodplains, and wetlands through standards that:
 - a. Guide development to avoid disturbance of natural drainage features, preserve wetlands and streams, and provide riparian buffer areas to prevent land disturbance and filter runoff.
 - b. Require best management practices designed to control stormwater and polluted runoff.
 - c. Ensure drainage systems are properly sized, built, and maintained.
 - d. Incorporate trees, rain gardens, swales, green roofs, and other features that mimic natural systems.
2. Reduce erosion and retain sediment onsite during and after construction.

3. Ensure that Good Agricultural Practices and other runoff reduction measures are addressed when reviewing agricultural grading permit exemptions.
4. Review and update drainage regulations and the drainage constraint district to incorporate and encourage green infrastructure concepts.
5. If large detention basins are required to control drainage, design them for multiple uses and treat them as an important tool.
6. Utilize existing Water Management Plans as examples of best management practices.
7. Expressly and consistently condition development and subdivision approvals, building permits, and other discretionary approvals for actions that may impact surface water resources, on at least one of the following:
 - a. The prior implementation of updated instream flow standards and a monitoring plan for any surface water sources that are needed for any permitted project or development, when there is a reasonable possibility that public trust purposes are or may be harmed.
 - b. Ground- or surface- water management area designation for any aquifer area where new or expanded water sources will need to be developed, when there is a reasonable possibility of harm to public trust purposes in either ground or surface waters.
 - c. The explicit application and execution of the "framework" of analysis set forth by the Hawai'i Supreme Court in the Kaua'i Springs case, prior to the issuance of any permit or other discretionary approval by the County Planning Department, Planning Commission, or County Council.
8. Provide for the crossing of water courses by spanning rather than by culverts when possible, so that natural streambeds will not be altered.
9. Support the protection, restoration, and enhancement of surface and subsurface water resources, stream habitats, and watershed areas to support: groundwater aquifer recharge; aquatic and environmental processes; riparian, scenic, recreational, and Native Hawaiian cultural

resources; and constitutionally-protected Native Hawaiian traditional and customary practices.

10. Support mauka to makai streamflow, which is essential to the survival of native stream life.
11. Support mediated agreements, such as that in Waimea, to restore streamflows to meet public trust purposes for Wailua River, Hule'ia River, and others, while avoiding costly litigation.

B. PLANS AND STUDIES

1. In Community Plans, include protection actions for streams and inland water bodies to prevent degradation of water quality and address non-point source pollution.
2. Establish a drainage system database to better understand the drainage network on Kaua'i and to assist with water quantity and quality impacts.
3. Periodically review the County's flood control measures and plans using updated information and forecasts on climate change.
4. Develop drainage master plans for flood-prone areas such as Hanalei, Nāwiliwili, Kapa'a, Wailua, Po'ipū, and Kekaha.

C. PROJECTS AND PROGRAMS

1. Utilize green infrastructure concepts and best management practices in County projects.
2. Mark stormwater drains as "going to the ocean."
3. Complete the update of the *Kaua'i County Water Use and Development Plan*.

D. PARTNERSHIP NEEDS


1. Collaborate with community groups and stakeholders to better manage water resources in a cooperative fashion, avoiding adversarial fights that can divide the community.
2. Encourage collaborative watershed and stream protection through the efforts of non-profit and volunteer environmental groups, such as the Hanalei Watershed Hui and Kaua'i Watershed Alliance.

3. Develop instream flow standards for Kaua'i's perennial streams, with a focus on the existing project to develop standards for Southeast Kaua'i.
4. Maintain stream flows by periodically removing excessive debris and vegetation from stream channels and beds that can impede drainage.
5. Monitor the quality of coastal and inland waterbodies, using an operational groundwater-level monitoring network and a stream monitoring network, to ensure compliance with instream flow standards.
6. Support the establishment of community-based councils to assist with watershed management issues.
7. Seek to prevent stream overflow in low-lying communities by maintaining natural drainageways and preventing the buildup of debris.
8. Support the update of the *Hawai'i State Water Plan* components as they relate to Kaua'i, including the *Water Resource Protection Plan*, *Water Quality Plan*, *State Water Projects Plan*, and *Agricultural Water Use and Development Plan*.

3. KAHAKAI - COASTAL AREAS AND SHORELINES

Kaua’i’s coastal areas – including beaches, the shoreline, and near-shore waters – are heavily used by residents and visitors. Protecting and preserving the coast and its waters is essential to sustaining our communities, economy, and way of life. This will require retaining and improving the coast’s valued characteristics which include good water quality, sandy beaches, abundant marine life, scenic views, and public access. However, coastlines are dynamic by nature and face constant threats from development, erosion, hurricanes, and tsunamis. Effective management can minimize negative impacts and help preserve coastal areas for the use and enjoyment of current and future generations.

Objective: To protect and enhance coastal resources and public access to the shoreline.



3.1 Addressing Human-Caused Coastal Erosion

Centuries of erosion have shaped Kaua’i’s 90 miles of coastline resulting in dramatic contrasts from the Na Pali cliffs to the low-lying wetlands of the Mānā Plain. While Kaua’i has only 12 percent of the State’s coastline, it has more than one-third of its beach sand including the longest stretch of beach in Hawai’i. However, approximately 70 percent of our beaches are eroding and Kaua’i has lost an estimated four miles of beach over the past century.¹⁸ Although erosion is a naturally occurring force, the human contribution to beach erosion includes coastal development and coastal armoring, which exacerbates sand loss and the narrowing of beaches. Such structures cover approximately ten percent of the shoreline. Sea level

18 Anderson et al., 2015

rise, which is accelerating worldwide due to global warming, is another human contribution to beach erosion.

3.2 Regulating Coastal Development and Activities

The State of Hawai’i participates in the federal Coastal Zone Management (CZM) Program, established through the Coastal Zone Management Act of 1972. The Program seeks to “Preserve, protect, develop, and where possible, to restore or enhance the resources of the nation’s coastal zone” and is administered by NOAA.¹⁹

The Hawai’i CZM Program employs a wide range of strategies to manage coastal issues, mitigate detrimental environmental impacts resulting from development, and uphold environmental laws. Through statewide planning and community initiatives, such as the *Ocean Resources Management Plan* (ORMP) and Marine and Coastal Zone Advocacy Council (MACZAC), the CZM Program sponsors State and County efforts related to coastal stewardship, planning, permitting, education, and outreach.²⁰

The Special Management Area (SMA) was established in 1975 as part of the Hawai’i CZM Program. Pursuant to HRS 205A, counties are authorized to determine SMA boundaries and administer SMA permits and shoreline setback provisions. The SMA covers coastal areas including roads, natural areas, and resort development. Proposed development within the SMA is subject to an assessment to determine whether an SMA Major Use Permit or an SMA Minor Permit is required. SMA permits do not prohibit development in coastal areas, but ensure development, uses, and activities comply with the CZM program and SMA Guidelines. The construction of a single-family residence as well as interior alterations, agriculture, and underground utilities are land uses and activities within the SMA that are generally excluded from the definition of “development” pursuant to HRS 205A-22.

The County also regulates coastal development through a Shoreline Setback Ordinance (2008) that prohibits development within a shoreline setback area. The setback line is based on average lot depth and long-term coastal erosion rates from the *Kaua’i Coastal Erosion Study* (2012).²¹

19 <https://coast.noaa.gov/czm/act/>
 20 <http://planning.hawaii.gov/czm/about-czm/>
 21 Fletcher, et al., 2012

3.3 Planning for Climate Change Impacts to Coastal Areas

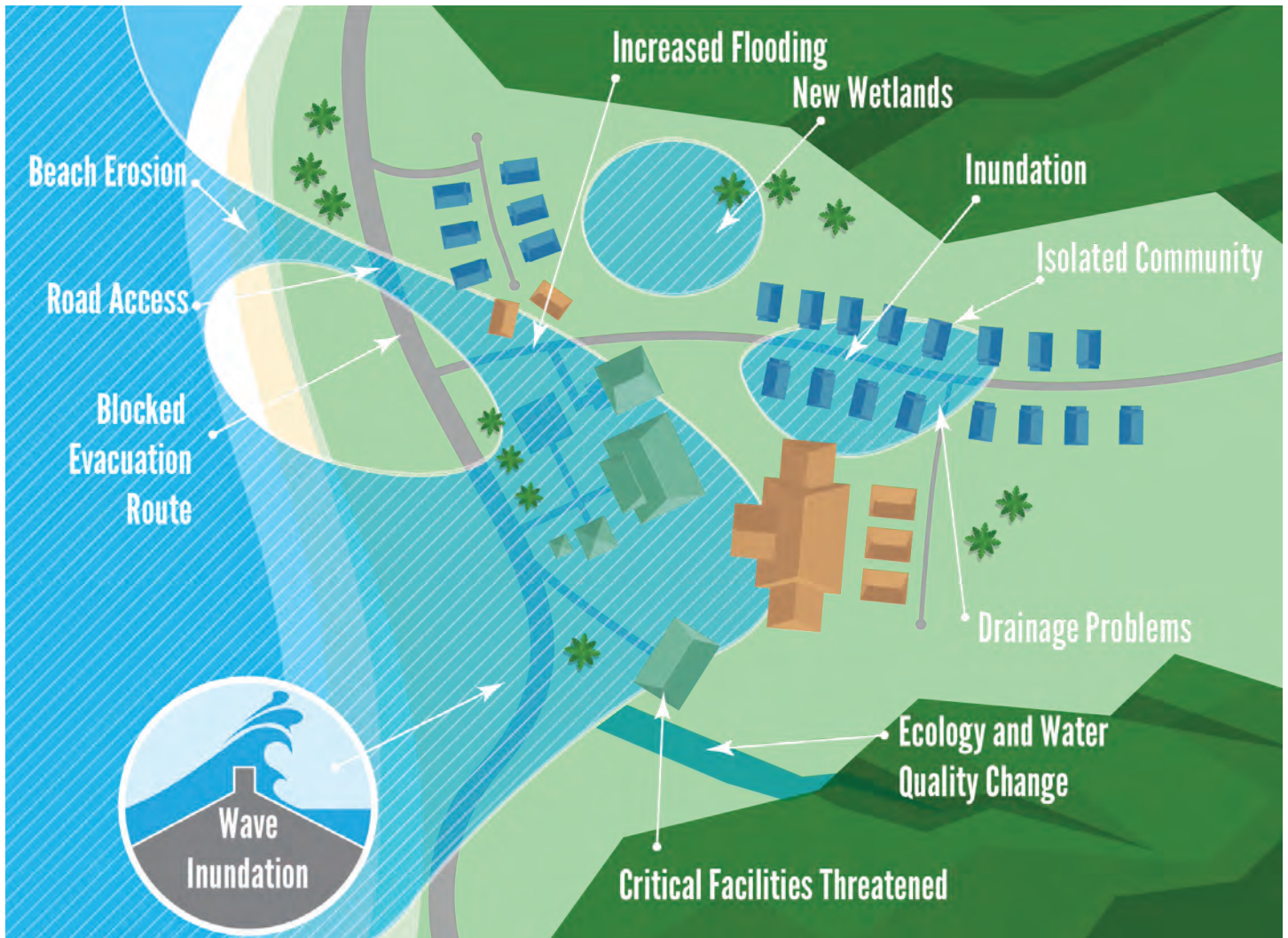
Climate change is altering and aggravating natural forces such as sea level rise, rainfall patterns, high wave events, hurricanes, extreme tidal events, and beach erosion (see Figure 3-4). Ocean warming and acidification will continue to progressively impact Kaua'i's coastal waters and shorelines. Based on the best available science, we should plan for three feet of sea level rise by the latter half of the century. It is important to note that this estimate may be conservative, as some studies project upwards of six feet of sea level rise by 2100. The greatest uncertainty surrounding the projections concern the rate and magnitude of ice sheet loss primarily from Greenland and West Antarctica. This is also dependent on worldwide efforts to reduce greenhouse gas emissions. Infrastructure and private development built today can be expected to still be in place in the second half of this century when several

feet of sea level rise becomes possible. Therefore, it is important to utilize planning approaches that are adaptive in nature, such as scenario-based planning.

Future sea level rise and ocean warming will greatly impact different types of coastal habitats, including intertidal areas, wetlands, estuaries, lagoons, tidal marshes and flats, and tidally influenced streams and rivers. Shorelines may 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. Increased coastal inundation from high wave events could also transport pollutants from agricultural, industrial, and wastewater treatment operations.

Fish populations in shallow water and inter-tidal and sub-tidal aquatic habitats could be affected by changes to pollutant levels and water salinity. Coral reefs may

Figure 3-4 Sea Level Rise Impacts to Coastal Areas



be able to grow higher to adapt to rising sea levels, provided they are not impaired by impacts from bleaching, excessive sedimentation, and other factors.

3.4 Supporting Traditional and Community Based Coastal Resource Management

Kaua'i's coastal areas 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 range of management practices and policies to minimize threats, reduce harm from human activities, and respond to future impacts due to climate change.

In 2015, the establishment of Hawai'i's first Community Based Subsistence Fishing Area in Hā'ena demonstrated how traditional resource management can function collaboratively with modern practices. The area protects the sustainability of near-shore ocean resources through rules based on cultural practices. Management programs that reaffirm traditional and customary native Hawaiian subsistence practices and promote understanding of the ahupua'a management system should be encouraged. The State also runs a Makai Watch program of which there are two locations on Kaua'i in Hanalei and Hā'ena. This program allows citizens to assist in the management of marine resources by promoting education, monitoring, and compliance to State rules. These programs further demonstrate how ahupua'a management concepts can be integrated into today's community life and strengthen community participation in resource management.

A. PERMITTING AND CODE CHANGES

1. Minimize coastal hazard risks through planning and development standards that:
 - a. Ensure the safety of individuals, families, and communities within coastal hazard areas and communicate the dangers to residents and tourists.
 - b. Discourage development or redevelopment (including tourist uses) within hazardous areas, while preserving adequate space for expected future growth in areas located outside these areas.
 - c. If hazard risks are unavoidable, minimize hazard risks to new development over the life of authorized structures.
 - d. Ensure property owners assume the risks associated with new development in hazardous areas.
 - e. Limit development near vulnerable water supplies.
 - f. Manage water supply issues resulting from saltwater intrusion, such as limits on groundwater withdrawal or diversification of water supplies.
2. Avoid or minimize coastal resource impacts through development standards that:
 - a. Protect public beach, rocky coasts, dune, wetland, river, and stream resources in all coastal planning and regulatory decisions.
 - b. Protect the quality of coral reefs through standards that address, prevent, and minimize impacts from development.
 - c. Minimize impacts to view corridors from roads or public places to the ocean and from mauka to makai.
 - d. Preserve and protect Kaua'i's sandy beaches and shorelines from erosion and degradation while ensuring continued public access to them.
 - e. Ensure adequate parking and convenient public access to coastal lands in all zoning and subdivision permits.
3. Promote strategic beach nourishment in public use areas.
4. Seek to preserve natural beach processes and avoid the construction of shoreline protection structures.
5. Do not allow permanent armoring of the shoreline.

6. Include the following guidelines for coastal development in the CZO:
 - a. For resorts and other multi building complexes, transition from low building heights along the shoreline to taller buildings on the interior of the property.
 - b. Provide an open, vegetated visual buffer between the shoreline and buildings.
 - c. Protect community accessways laterally along the coast in the buffer zone mauka of the shoreline.
 - d. 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.
7. Update the Shore District in relation to the SMA regulations.
8. Continually incorporate new information on climate change into shoreline policies and regulations.

B. PLANS AND STUDIES

1. Restore lost and unrecorded beach accesses by identifying, recording, and demarcating accessways for public use.
2. 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 and inform stakeholders including tourists of these dangers.
3. Recognize scientific uncertainty by using scenario planning and adaptive management techniques that adjust policies and rules based on monitoring efforts.
4. Analyze options and criteria for relocation of development outside of hazardous areas along the coast and incorporate findings into a long- term relocation plan.

5. Support studies to assess impacts to coastal and cultural resources at Salt Pond Beach and Pū'olo Point in collaboration with community members, including but not limited to the salt making practitioners.

C. PROJECTS AND PROGRAMS

1. 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.
2. Acknowledge, support, and participate in government, university, and private efforts to better understand and predict climate change impacts on coastal areas.

D. PARTNERSHIP NEEDS

1. Manage local marine resources through community-based strategies, such as the Hā'ena Community-Based Subsistence Fishing Area.
2. Address loss of beach areas due to sea level rise through a comprehensive beach management strategy, including local financing plans for beach and dune restoration.
3. Encourage citizen groups to take responsibility for water resource monitoring and protection, such as through the expansion of the Makai Watch Program.
4. Adopt tax policies favorable to public shoreline access.
5. Dissuade beach driving through enforcement and by educating drivers about the laws, safety, and environmental and cultural impacts of driving on beaches.
6. Provide preferred tax status and other incentives to help community groups, non-governmental organizations, and government agencies restore native lowland forests.

4. 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 that has earned Hawai'i the dubious honor of "Endangered Species Capital of the World."

Objective: To protect the flora and fauna unique to Kaua'i and Hawai'i and to mitigate the impact of invasive species.



4.1 Saving 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 endangered species list. Among these 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 their arrival on Kaua'i, people have depended on the natural world to survive and thrive. However, with an increasing population and modern technology, the relative balance that people had with their environment has deteriorated. Currently, many species are threatened by habitat reduction, disturbance, predation, overexploitation, and other human-introduced dangers. Without educated decision-making about how we expand and grow, wildlife will suffer. Already, human presence has caused over half of the 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 percent. Preservation and protection of the growing number of endangered species requires a comprehensive approach through direct and indirect measures to ensure Kaua'i's natural legacy endures.

4.2 Countering the Threat of Invasive Species and Diseases

Invasive species threaten our environment, agriculture, human health, and quality of life. They represent a constant and evolving threat to Kaua'i's environment – particularly to the island's already vulnerable endangered species. If left unchecked, invasive species can easily thrive and multiply in Kaua'i's hospitable environment, out-competing native life, and jeopardizing our watersheds.

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 as well as cooperation from businesses and the community. Port of entry controls are a critical method for preventing the introduction 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 fauna 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 the rose-winged parakeet and feral cats are established on the island and require effective management and containment strategies to minimize their impacts. The parakeets pose a significant economic and food safety issue on Kaua'i, since the birds are naturally drawn to fruit trees on local commercial farms. 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. Invasive flora have a wide range of detrimental effects on the island's ecology and economy. Species such as banana poka (*Passiflora tarminiana*), miconia (*Miconia calvescens*), and strawberry guava (*Psidium cattleianum*) spread aggressively in forests and contribute to the hearty diet and proliferation of rodents and feral pigs, which subsequently cause both ongoing conservation issues and food safety concerns for local agriculture

producers. Furthermore, invasive herbaceous and woody plant pests such as bush beardgrass (*Schizachyrium condensatum*), aramina (*Urena lobata*), wedelia (*Sphagneticola trilobata*), and fireweed (*Senecio madagascariensis*) spread rapidly and can cause serious damage from an economic standpoint, as these types of invasive weeds can easily overtake pastures and grazing lands for livestock and are exceptionally difficult to eradicate.

Viral, bacterial, and fungal diseases such as Rapid 'Ōhi'a Death (ROD) and Banana Bunchy Top Virus (BBTV) cause flora-based infections that pose serious threats to indigenous flora and local food sources, respectively.

Knowledge of these diseases and best management practices for preventing the spread of these diseases via contact with humans, automobiles, pets, and equipment/tools must be taught to the general public, and consciously adopted into all of our daily lives.

Active measures to minimize the impact of diseases and invasive pests must continue to be implemented and improved. Through concerted efforts and partnerships between the County, State, and Federal agencies (i.e., USDA, USFWS, NRCS, East & West Kaua'i Soil and Water Conservation Districts, HDOA, and DLNR), conservation groups (i.e., Kaua'i Conservation Alliance, KISC, Plant Pono, NTBG, the Nature Conservancy, and the Kōke'e Resource Conservation Program) and academic institutions (i.e., University of Hawai'i - CTAHR and local schools), prevention, monitoring, and eradication efforts will continue to combat the introduction and establishment of invasive species and diseases on Kaua'i.

4.3 Protecting Coastal and Near-Shore Habitats

Kaua'i's shorelines and near-shore waters support a wide range of terrestrial and marine species. These include several threatened and endangered seabird species, marine mammals such as Hawaiian monk seals, sea turtles, and whales. The north and east coasts have shallow fringing coral reefs, while the reefs on the west and south sides are less continuous. These marine habitats require good water quality and healthy coral reefs. Both are susceptible to sediment runoff from erosion and flooding as well as the discharge of pollutants generated from agriculture, businesses, households, and wastewater.

A. PERMITTING AND CODE CHANGES

1. 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.
2. Require the use of noninvasive plant species for landscaping of newly developed areas, public lands, and roadways.
3. Require future development to address potential impacts on threatened or endangered flora and fauna:
 - a. Evaluate potential loss of habitat.
 - b. Identify all endangered and threatened species present.
 - c. List minimization efforts.
 - d. If mitigation is needed, join an established Habitat Conservation Plan or develop one.
4. Encourage new development to implement voluntary actions to encourage a net gain in protection efforts of our threatened and endangered species.
5. Minimize risks to threatened and endangered species in construction and development activity.

B. PROJECTS AND PROGRAMS

1. Increase wildlife and habitat protection knowledge and expertise within the County government.
2. Develop a protocol that will help minimize the current feral cat population, to lessen the impact of direct endangered species fatalities, as well as the spread of diseases, such as toxoplasmosis.
3. Adopt a comprehensive animal control ordinance to reduce or eliminate populations of feral, abandoned, and stray cats.
4. Develop a list of native plant species suitable for landscaping.

C. PARTNERSHIP NEEDS

1. Provide enforcement and education regarding endangered species regulations.
2. Provide interpretive signage within protected areas to educate people about native flora and fauna.
3. Design and install signage informing motorists and pedestrians about the presence of threatened or endangered species in wildlife hazard zones and during yearly times of increased danger.
4. Utilize predator-proof fencing and new technology to protect endangered species, such as seabirds, from lights and powerlines.
5. Complete and implement native species Habitat Conservation Plans, such as the 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 economic development.
6. Protect and restore forest bird corridors, seabird flyways, waterbird habitat, and areas of monk seal loafing.
7. Promote greater protection of Kaua’i’s native flora and fauna biodiversity by reducing the threats of invasive species:
 - a. Rapidly identify and address invasive species on County lands and coordinate with other public and private landowners to control sources of invasive species.
 - b. 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.
 - c. Collaborate with State and local partners, such as the Kaua’i Invasive Species Committee, on comprehensive biosecurity strategies at ports of entry to prevent invasive species, such as the mongoose, from spreading to Kaua’i.
 - d. Support State, County, and non-profit organization efforts to control invasive species, 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.

e. 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 is at stake and whom to contact for invasive species detection.

8. Acquire 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.
9. Utilize conservation easements and partnerships with land trusts to acquire natural areas and promote mitigation banking.
10. Promote protection, restoration, and identification of critical habitats for our native, threatened, and endangered flora and fauna through the following actions:
 - a. Regularly evaluate and update a database listing environmental resource sites.
 - b. Identify specific areas of habitat across the island that are in need of more heightened protection and/or restoration.
 - c. Protect and restore existing wetlands that serve as critical habitats for existing species.
 - d. Require developers and land-users to provide a protection buffer around existing habitats and wetlands.
 - e. Encourage more reforestation and native flora outplantings across the island to help increase and enhance habitats.
 - f. Preserve and establish connectivity between existing habitats and critical areas of interest.

11. Ensure adequate inspection and review of shipments that may contain invasive species.
12. In schools, develop programs that improve education and awareness of:
 - a. The role of native species and the importance of biodiversity in Hawai'i.
 - b. Projects that support the prevention and eradication of invasive species, and the protection and conservation of threatened and endangered species and habitats.
13. Protect endangered species through programs, including but not limited to the Mānā Plain Wetland Restoration Project, Kīlauea Point National Wildlife Refuge, Kaua'i Endangered Seabird Recovery Project, and Kaua'i Forest Bird Recovery Project.



Blossoms from a native 'Ōhi'a Lehua tree, Upper Wailua River, East Kaua'i District.



Kalepa Village Apartments, Hanamā'ulu, Līhu'e District

SECTOR: II. HOUSING

Declining housing affordability for locals has reached a crisis level with far-ranging social impacts. Home prices exceed 300 percent of the national average while affordable market rentals are few and far between. The lack of housing supply has been due in part to the effects of the Great Recession of 2007-2009. For almost 10 years, large-scale private development of housing has been nonexistent. Only high-end individual homes and several County-sponsored affordable housing projects were built (due to reduced land prices or prior inclusionary zoning requirements). At the household level, high 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 integrated into all communities and located close to work and services.

Understanding the High Cost of Housing

Many complex factors drive housing costs. These include slow inventory growth, limited developable land, a lengthy entitlement process, and high infrastructure and construction costs. The off-island market, willing to pay a premium for Kaua'i property, is another factor driving high costs. 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.²² 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

22 *Measuring Housing Demand in Hawai'i 2015-2025, 2015*

are largely funded by the development itself, which necessitates high sales prices.

Spurred by internal and external population growth, the growing number of households continues to outpace housing development. 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 3-5).

Changing the Residential Development Paradigm

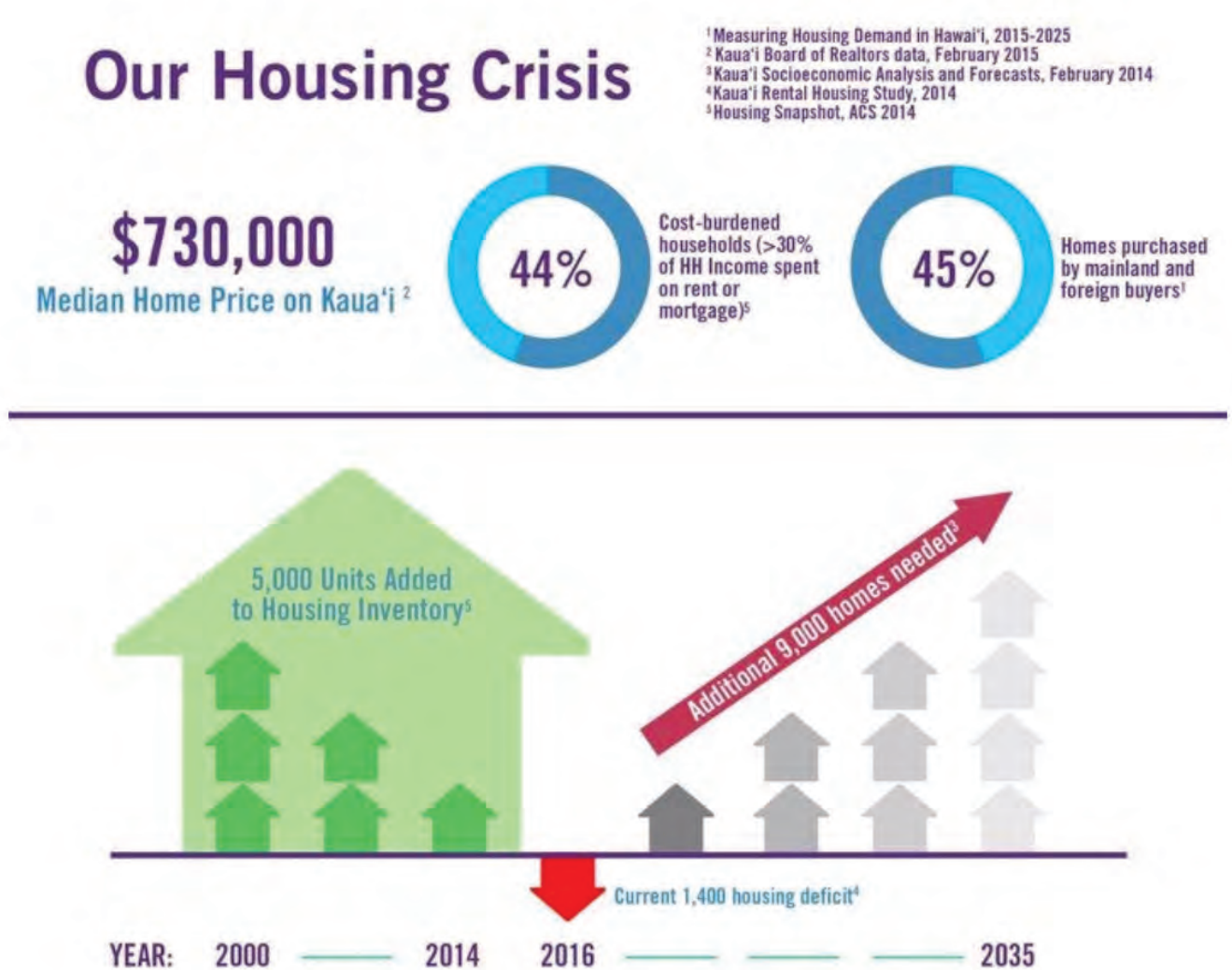
New market construction may have increased housing inventory, but it has not produced the range of housing needed to serve Kaua'i's workforce. According to the *Land Use Buildout Analysis* (2015), over 80 percent of residential development is single family construction that occurs on Agriculture, Open, and R-1 through R-4 zoned land. This has exacerbated Kaua'i's low-

density development paradigm. In order to confront the housing crisis, public and private partners must work together to ensure that increases to the housing inventory will be affordable to residents.

Reducing the Cost of Living by Connecting Housing, Jobs, and Transportation

When housing is built in automobile-centric subdivisions far from schools, shopping, and jobs, residents must largely rely on personal vehicles for all their trips. Such reliance not only contributes to traffic congestion, but is detrimental to the environment and overall health of the community. Additionally, it has heavy financial impacts to the average household. It is estimated that combined housing and transportation costs consume more than 60 percent of Kaua'i's

Figure 3-5 Kaua'i's Housing Crisis



average household income.²³ In fact, transportation costs outweigh housing costs. The high cost of transportation includes automobile ownership, insurance, repair, and fuel costs. The Future Land Use Map prioritizes residential growth in towns and near the major jobs centers of Līhu'e and Po'ipū. This Map locates new communities near existing towns and requires a compact, walkable form. This land use pattern will encourage increased transit, bicycling, and walking trips, thus reducing average household transportation costs.

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, DHHL development, elderly housing needs, and houselessness.

1. 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.

Objective: To increase housing opportunities for low to moderate income households.



1.1 Producing Affordable Housing through Mandates

In 2008, Kaua'i passed its first affordable housing ordinance, also known as inclusionary zoning. It requires developers to construct approximately 30 percent 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, as of 2016, the affordable housing ordinance has not produced any affordable units. Many developers express concern that such mandates delay development and housing inventory 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.

1.2 Supporting County Sponsored or Required Affordable Housing Programs and Projects

The Kaua'i County Housing Agency implements a variety of programs designed to promote

23 Center for Neighborhood Technology (2016)

homeownership, expedite the permitting of affordable housing, and support housing rehabilitation. Sources of funds that are potentially available to address housing needs include: Low-Income Housing Tax Credits, HUD (Department of Housing and Urban Development) Housing Choice Vouchers, HOME (Home Investment Partnerships Program) and CDBG (Community Development Block Grants) programs, USDA 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.

The Agency also plays a key role in developing affordable rental projects. A major source of capital for these projects is the Federal Low-Income Housing Tax Credit, which incentivizes the use of private equity through public-private partnerships. The tax credit provides a dollar-for-dollar reduction in the developer's federal income tax. However, use of these credits are limited to housing for families with incomes equal to or less than 60% of the median income and are limited in availability through a very competitive Statewide process.

Development subsidies also come from development grants and loans. The County's Housing and Community Development Revolving Fund reinvests income from federal grant programs in housing projects and first-time homebuyer mortgages. These capital investments will be repaid to the revolving fund which provides long-term support for County housing programs.

Federal HOME and CDBG funds also support affordable housing development. To receive federal CDBG grants, HOME program funds and other federal funding, the County is required to prepare and update a Five-Year Consolidated Plan that addresses housing and community development needs and establishes funding priorities. Other sources of funds include USDA Rural Development programs, private foundations, State CIP funds, and County Bond funds.

While the construction of new affordable housing is needed, the preservation and rehabilitation of existing affordable housing is equally important. The County should ensure that the affordability of subsidized housing is preserved for the longest term possible. Also, it is generally less expensive to rehabilitate existing affordable housing than to construct new

housing. Rehabilitation of existing housing supports and improves existing neighborhoods, and can also provide energy efficient upgrades to units.

Through active partnerships with landowners and affordable housing developers, the Housing Agency has helped move forward several 100% affordable housing projects in Līhu'e, Hanamā'ulu, Princeville, and Kōloa – constructing over 300 affordable rental units since 2000. Since the year 2000, the County has also supported self-help housing at Puhi and Kapa'a, assisted Habitat for Humanity in developing its 119 units in 'Ele'ele, and helped to rehabilitate 173 units at Līhu'e Court. The County has also acquired 22 properties and converted them to leaseholds, making them far more affordable to qualifying families than fee purchase while perpetuating their affordability indefinitely. A new initiative underway is the Lima Ola affordable housing project. This is a master-planned community that will provide over 400 affordable units in 'Ele'ele. 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.

A. PERMITTING AND CODE CHANGES

1. Update the County's Housing Ordinance into a workable law requiring all developers to contribute a fair share of resources to build affordable housing in a "win-win" manner.
2. Design and locate affordable housing projects in or near job centers to minimize household transportation costs, community and household fossil fuel usage, and traffic congestion.
3. Support economically integrated communities by requiring affordable housing mandates to be met on site.
4. Amend Ordinance 860, Workforce Housing, to incentivize the creation of affordable housing development.
5. Preserve the affordable housing stock by adopting a policy that any units built with taxpayer moneys or required under the Housing Ordinance for the general welfare shall be perpetually affordable to allow the inventory of affordable homes to grow rather than contract (which happens when such units are allowed to be sold on the open market).

6. When possible, encourage the design of affordable, energy-efficient residential projects with civic spaces, shade trees, and pedestrian/bicycle amenities to enhance livability, equity, and safe transit options, especially for children.
7. For county-sponsored housing subsidized with public money, the County shall require the units to be affordable for the life of the building and the land to remain in county ownership in perpetuity.
6. Support a flexible planning process and robust monitoring system to allow timely changes in strategy and resource allocation for the housing program.
7. Develop a quasi-public housing development or redevelopment agency to support affordable housing projects, particularly infill housing development projects within town centers.
8. Pursue and establish a source of capital for the development and maintenance of affordable housing. Possible sources include: earmarking a percentage of real property taxes for affordable housing development; a conveyance tax surcharge on high-priced real estate transactions and earmarked for affordable housing development; an expanded Low Income Housing Tax Credit (LIHTC) that increases availability of the tax credit; and setting eligibility higher than the current 60 percent of median income.

B. PLANS AND STUDIES

1. Find ways to insulate affordable housing units from the market, whether rentals or for ownership, to preserve the affordability of units.
2. Review existing affordable housing requirements in plans and zoning amendments to assess impediments to affordable housing creation.
3. Assess the County's affordable housing needs and priorities through the five-year Consolidated Plan and one-year Action Plans.
4. Establish a ratio for the housing needs for workforce, elderly, and disabled households, and amend existing laws and plans as needed.
9. Continue and expand the County's efforts to provide and require homeownership classes, including financial literacy, for families potentially eligible for county affordable housing projects.
10. Review best practices from elsewhere and test in pilot programs the methods that significantly reduce the cost of building a home, including infrastructure and system costs. The Mayor and the County Council should work with community to use Hawai'i Revised Statutes Section 46-15 to "designate areas of land for experimental and demonstration projects, the purposes of which are to research and develop ideas that would reduce the cost of housing in the State."

C. PROJECTS AND PROGRAMS

1. Complete the Lima Ola affordable housing project.
2. Seek and acquire land in or near town centers with access to transit, domestic water, and sewers for future affordable housing development.
3. Create dedicated sources of funding and continue to use the Housing Revolving Fund to finance affordable housing projects.
4. Develop and rehabilitate affordable housing low-interest loan programs and awards, such as the Rental Housing Revolving Fund through the Hawai'i Housing Financing and Development Corporation.
5. Support the housing needs of low income households through the Federal Housing Assistance Payments Program (Section 8).

D. PARTNERSHIP NEEDS

1. Provide the highest level of housing and community development assistance through partnerships and non-profit organizations such as a Community Land Trust.

2. INFILL HOUSING

Infill development, or housing located within existing communities, can expand our housing inventory without consuming precious open space. It may be less expensive than “greenfield” development because it utilizes 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 higher density communities. It should also be appropriately scaled to the character of individual towns.

Objective: To support mixed use, higher density, and walkable development in existing towns.



2.1 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.

2.2 Supporting Infill Development and “Missing Middle” Housing

The alternative to sprawl focuses new development in existing towns in order to leverage existing physical and social infrastructure while preserving vital open space. This 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 the major employment centers of Lihū’e and Kōloa. However, with the exception of hazard areas,

additional infill growth should be encouraged in all towns.

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 are smaller and less expensive to construct, offering a County-sanctioned private sector option towards increasing housing in existing communities. ADUs are allowed on residentially zoned lots where one home is permitted. Although previously permitted, new ADUs are not allowed on agricultural or open lands unless approvals were secured before 2007.

The County is also exploring whether to allow Additional Rental Units (ARU) in residential zoned areas. An ARU is a long term rental unit that includes a kitchen, bedroom(s), and bathroom facilities, attached or detached from a dwelling unit. Unlike ADUs, ARUs are restricted in size and allowed only in residentially zoned areas. ADUs are not restricted in size and were previously allowed within the Agriculture Zoning District and the Open Zoning District.

Infill development can further diversify Kaua’i’s housing stock through “missing middle” housing in walkable communities. “missing middle” housing is characterized by small-scale, multi-unit housing types such as duplexes, fourplexes, bungalow courts, and mansion apartments, and can be integrated into communities with single-family homes.

A. PERMITTING AND CODE CHANGES

1. Allow for multi-family 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.
2. Facilitate the development of small-footprint homes or “tiny homes” on small lots.
3. Update zoning in and around town centers to facilitate mixed use and infill development, such as units above commercial space.
4. Streamline permit approvals for infill development and housing rehabilitation by removing barriers, such as administrative delays.
5. Incentivize infill development by reducing or eliminating tipping fees, wastewater and water

facility charges, permit review fees, and park and environmental assessment fees.

6. Update the building code to reduce construction costs and facilitate cost-saving materials and technology while maintaining health and safety.
7. Reevaluate the definition of “kitchen” to provide flexibility for multi generational housing.
8. Increase lot coverage allowances to provide for more ADUs within the residential district.

B. PLANS AND STUDIES

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

C. PROJECTS AND PROGRAMS

1. Improve infrastructure and facility improvements in town centers to support a mixed use environment and increased density.
2. Hold educational sessions for landowners in Special Planning Areas to inform them of new development standards and potential infill development opportunities.

D. PARTNERSHIP NEEDS

1. Support programs that facilitate infill development and economic revitalization of town cores.
2. Collaborate with the State to review and streamline infill development projects.

3. NEW COMMUNITIES

New communities are needed to accommodate future growth. Even though infill development is prioritized, there is not enough residential zoning capacity to accommodate projected housing demand.²⁴ The General Plan’s policies and actions guide where and how these new communities will develop.

Objective: To develop compact, walkable communities consistent with the Future Land Use Map.



3.1 Designing Communities for Equity and Health

Communities that cater to a high-end market, resulting 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 support multiple transportation options and provide shared space for a range of household types. 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.

²⁴ *Kaua’i 2035 General Plan Technical Study: Land Use Buildout Analysis, 2015*

A. PERMITTING AND CODE CHANGES

1. Locate new communities only in areas designated for growth in the Land Use Map.
2. Avoid sprawl development patterns and inefficient infrastructure and service delivery by maximizing density in new communities.
3. 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.
4. Increase opportunities for moderate- and low-income households to become homeowners by providing a range of housing types.
5. Build housing in proximity to jobs, parks, community resources, and services.
6. Ensure subdivisions are designed to support housing type diversity, maximize density, provide safe pedestrian/bicycle connections, and slow speed on roads.
7. Take a proactive role in supporting County zoning amendments and State Land Use redistricting consistent with the General Plan and updated Community Plans.
8. Allow higher density to increase profitability for developers, resulting in a cheaper housing per unit cost.
9. New communities should incorporate green infrastructure into their design and be water and energy efficient.
10. Require non-entitled new communities in this General Plan to attain full State and County district and zoning approvals by 2027. Require short-duration expiration dates should development not be constructed as permitted, unless stated otherwise.
11. Prohibit future subdivision and development from restricting construction of ADUs in their deed and covenants.

B. PARTNERSHIP NEEDS

1. Work with the State Office of Planning to explore large-scale State land use redistricting consistent with the General Plan and updated Community Plans.

2. Enter into public/private partnerships to move forward development in new communities, especially in Līhu‘e, South Kaua’i, and Kīlauea.
3. Leverage market-rate development to support long-term affordable housing through inclusionary zoning and other tools.

4. 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 reduce commuting time and deter vandalism and theft through increased surveillance.

Objective: To expand housing opportunities for workers on farms.



The Farm Worker Housing Bill²⁵ allows farm operators to build small housing units on their agricultural properties. This useful zoning change could be more widely utilized through modest improvements to the ordinance and permit application process.

A. PERMITTING AND CODE CHANGES

1. Support the development of a limited amount of housing on agricultural land for farm workers and their families by:
 - a. Improving the existing process to obtain Farm Worker Housing Permits and remove barriers to participation.
 - b. Providing outreach on the Farm Worker Housing Law to increase participation.

²⁵ Ordinance 903, passed in 2010

5. HAWAIIAN HOME LANDS

The State Department of Hawaiian Home Lands (DHHL) owns 20,565 acres on Kauaʻi, primarily in the East Kauaʻi, Hanapēpē, ʻEleʻele, and Līhuʻe Planning Districts (see landowner maps in Appendix E). DHHL works to ensure that native Hawaiian families have homes and land to call their own.

Objective: To support the Department of Hawaiian Home Lands in their mission to provide housing to their beneficiaries.



5.1 Implementing the Kauaʻi Island Plan

DHHL defines beneficiaries as all Native Hawaiians (50 percent or more Hawaiian) and their successors, including existing lessees, 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 ʻāina hoʻopulapula, protecting the Native Hawaiian population. ʻĀina hoʻopulapula involves creating self-sufficiency and planning for the future through investing in resources, such as education and housing.

The DHHL *Kauaʻi Island Plan* (2004) designates three priority tracts for residential development: Wailua, Hanapēpē, and Anahola/Kamalomalō. 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, but buildout has been slower than expected. Wailua 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.

As of 2014, there were a total of 1,621 applicants on

DHHL's Kauaʻi waitlist.²⁶ 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.

A. PERMITTING AND CODE CHANGES

1. Prior to the issuance of development and subdivision approvals, building permits, and other discretionary approvals for actions that may impact water sources that could also serve or impact the water needs of DHHL, consult with DHHL regarding their projected water needs and other rights to water under the public trust, such as those described or referenced under Hawaiʻi State Constitution Art. XII § 1; Hawaiʻi Revised Statutes §§ 168-4, 171-58, and 174C-49; Hawaiian Homes Commission Act §§ 220 and 221; and interpretive case law.

B. PLANS AND STUDIES

1. Integrate the recommendations of DHHL plans into community planning.

C. PROJECTS AND PROGRAMS

1. Partner with DHHL on infrastructure projects that will support development of both County and DHHL priority growth areas.
2. Partner with DHHL to relocate the Wailua Wastewater Treatment Plant out of the tsunami zone and to support future residential development on DHHL land.

D. PARTNERSHIP NEEDS

1. Respect and support the mission of DHHL to prioritize planning for their beneficiaries.

²⁶ DHHL Applicant Waiting List, 2014. The 2008 DHHL Lessee Survey (prepared by SMS Research)

6. 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.

Objective: To accommodate the needs of an aging population through age-friendly community design and assisted living facilities.



6.1 Ready 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.²⁷ 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.

6.2 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.”²⁸ 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.

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

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

A. PERMITTING AND CODE CHANGES

1. Provide additional housing and assisted living facilities for Kaua’i’s increasing elderly population by:
 - a. Increasing the supply of housing that is affordable, accessible to services, and promotes aging in place.
 - b. Allow multigenerational housing that accommodates family home care situations.
 - c. Revising development standards to facilitate approval of assisted living units and continuing care communities.
2. Integrate universal design standards into Kaua’i’s building code.

B. PROJECTS AND PROGRAMS

1. Regularly convene a Kaua’i Houseless Solutions Summit to develop collaborative short-term homeless solutions involving Kaua’i’s faith-based community with support from health and human service organizations and County and State agencies.

C. PARTNERSHIP NEEDS

1. Provide and anticipate increasing services to the elderly and their caregivers, including access to transit, nutrition services, fitness programs, and personal care.

27 Hawai’i State Plan on Aging, 2011
28 Hawai’i State Plan on Aging, 2011

7. THE HOUSELESS POPULATION

By providing a range of housing types, including affordable rentals, Kaua'i can help families and individuals reduce the time spent being houseless.

Objective: To reduce Kaua'i's population of those houseless and at risk for homelessness.



7.1 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.

7.2 Providing Homes for the Houseless

The housing needs of disadvantaged groups are documented in the *State of Hawai'i 2015-2020 Consolidated Plan*. This plan includes data from the 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.

A. PERMITTING AND CODE CHANGES

1. Allow managed micro-housing developments or camp sites for the houseless.
2. Allow development of Single Resident Occupancy unit projects.

B. PLANS AND STUDIES

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

C. PROJECTS AND PROGRAMS

1. In addressing homelessness, adopt and implement the Housing First approach to reduce and ultimately eliminate homelessness.

D. PARTNERSHIP NEEDS

1. Support the development and expansion of shelters to increase temporary housing for the houseless and other at-risk populations.
2. The Mayor and the County Housing Agency shall work with the State of Hawai'i Department of Human Services and nonprofit community to implement a robust Housing First program that provides 24/7 wrap-around services and makes available transitional and permanent housing for all houseless persons who desire such housing.
3. Identify partnership opportunities with landowners and community organizations to accommodate sheltering and transitional housing needs for houseless populations and people with disabilities.
4. Develop a coordinated, integrated system of services that facilitates entry, offers wraparound services, and supports system exit when appropriate.
5. Provide transportation to enable the houseless to access services (offer rides, bus vouchers, pay as you go card, or other options).
6. Support rehabilitation programs for the houseless.
7. Prioritize resources for houseless families with children, youth, women, veterans, and people with disabilities.

8. 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.

Objective: To reduce the impact of resort uses on communities outside the Visitor Destination Area.



8.1 Improving Enforcement of Non-Conforming Resort Uses

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 TVR.

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.

8.2 Ensuring Tax Equity for 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.

A. PERMITTING AND CODE CHANGES

1. Reduce the impact and number of transient vacation rentals and similar uses, such as Bed & Breakfasts, in the communities outside the VDA by:
 - a. Continuing aggressive enforcement against illegal TVRs.
 - b. Supporting attrition and amortization of non-conforming TVRs, especially in high hazard areas.
 - c. Monitoring and enforcing laws against new types of transient rentals facilitated by sharing economy websites, such as Airbnb and VRBO.
 - d. Creatively exploring ways to use the tax code for enhanced compliance of non-conforming TVRs.
2. Set fines and taxes on illegal and legal vacation rentals respectively that remove homes from the local residential market supply. The penalties should be high enough to deter illegal use.





Hardy Street, Līhu'e District

SECTOR: III. LAND TRANSPORTATION

Kaua'i 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 Kaua'i. 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 Kaua'i's existing transportation system and to spend Kaua'i's limited transportation funds wisely, and seek additional funding from Federal, State, and private partners.

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 Kaua'i 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 3-6). 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.
- 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.

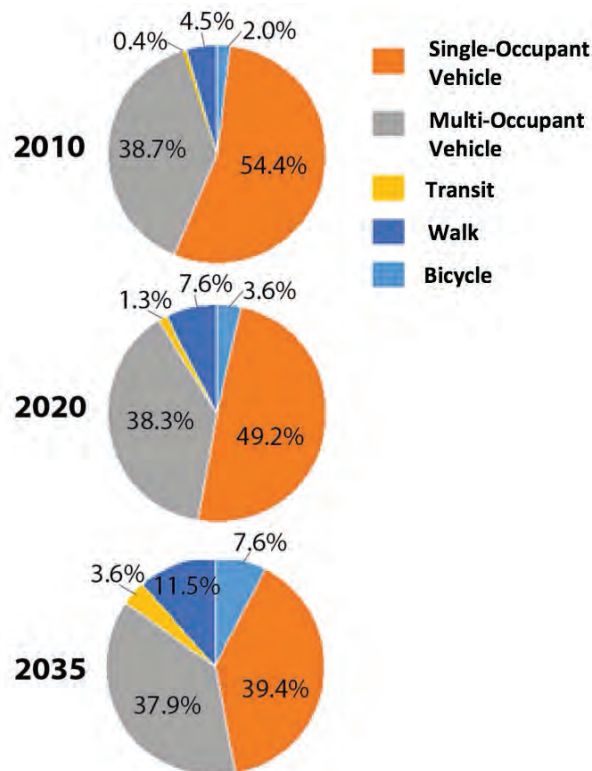
While not all national trends may be currently prevalent on Kaua’i, it is anticipated that both public and private transportation services linked to technological advances will affect Kaua’i’s transportation system over the General Plan’s timeframe.

As the jurisdiction responsible for Kaua’i’s belt highways and major roads leading to the airport and Nāwiliwili Harbor, the HDOT is a key partner in Kaua’i’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**

Figure 3-6 Multimodal Land Transportation Plan 2035 Goals



1. GENERAL

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

Objective: To safely and efficiently move people and goods about Kaua’i by creating a more multimodal land transportation system. As a percentage of total trips, increase transit trips to 3.6%, walking trips to 11.5%, and bicycle trips to 7.6% by 2035 using 2010 data as a baseline.



1.1 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 Kaua’i 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 SOVs 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 (HDOT for our belt highways, and the County of Kaua’i Department of Public Works for our County roads), close collaboration is needed to assure we are all working toward the same end goal. In addition to coordination between these two agencies, venues are needed for public dialogue, education, enhancing partnerships, and brainstorming of creative ideas for funding and implementation of our transportation system.

The Built Environment Task Force of Get Fit Kaua’i is an ideal venue for this continued discussion.

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.

A. PERMITTING AND CODE CHANGES

1. Coordinate land use planning with transportation 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.
2. Require that transportation impact analysis reports and other traffic studies analyze a project’s potential to encourage mode shift.

B. PLANS AND STUDIES

1. In all Community Plans, incorporate planning of roadway, transit, bike and pedestrian facilities, and transportation needs to support economic revitalization.
2. 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. In all Community Plans, develop a regional traffic circulation plan that includes all modes of transportation.

C. PROJECTS AND PROGRAMS

1. Establish transportation priorities using a performance-based evaluation process, which considers the following criteria:
 - a. Safety;
 - b. System preservation;
 - c. Economic development/community access;
 - d. Support of growth areas as designated in the General Plan and Community Plans;
 - e. Congestion management; and
 - f. Environmental and cultural impacts.

2. Support completion of the priority projects in the *Kapa’a Transportation Solutions Report* to include the following:
 - a. Add one lane on the Kūhiō Highway from the southern end of the Kapa’a Bypass Road to Kuamo’o Road.
 - b. Widen the northern segment of the Kapa’a Bypass Road to two-lane and two-way from the northern end of the Bypass to the roundabout at Olohena Road.
 - c. Operational improvements, such as signalization and left turn restrictions on Kūhiō Highway.
 - d. Extension of right turn lane on Haleilio Road at Kūhiō Highway.
 - e. Congestion management on Kūhiō Highway, from Kuamo’o Road to Kapule Highway.
3. Incorporate and integrate transit strategies in the *Kapa’a Transportation Solutions* framework.
4. Following a priority evaluation process, complete priority circulation and multimodal capacity projects identified in the General Plan Transportation Maps.
5. Consider implementing Transportation Demand Management strategies with County of Kaua’i employees who work in Līhu’e as a pilot program that can be replicated by other employers. Strategies may include the following:
 - a. Staggered work hours;
 - b. Bulk rate bus passes; and
 - c. Incentives to encourage commuting by other than single-occupancy vehicles.

D. PARTNERSHIP NEEDS

1. Improve the process of collaboration with HDOT to involve both the County and State in planning, scoping, design, and funding of transportation plans and projects.
2. 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.

3. 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.
4. Identify and actively seek non-County revenue sources (Federal, State, and private) to supplement County funding of the transportation network.
5. Enhance community partnerships for roadway maintenance (including landscaping) and education of all roadway users.
6. Continue to support the Built Environment Task Force of Get Fit Kaua'i as a primary venue for public discussion of funding and implementing our land transportation system.
7. Regularly evaluate and update Council-determined land transportation user fees, such as bus fares, registration, and fuel and vehicle weight tax rates.

2. 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 of transportation is essential to a future with less time spent in traffic and fewer vehicle trips. County roads are under the jurisdiction of the County of Kaua'i. They do not include roads and highways that are under the jurisdiction of the Hawai'i Department of Transportation. This section applies only to roads under the jurisdiction of the County.

Objective: To provide a safe and accessible County road network that supports the Future Land Use Map.



2.1 Preserving our Island's Character and Advancing Opportunity

Along with addressing congestion, other concerns of our community include preserving Kaua'i'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.

On many local roads, residents express concerns about motorists speeding. This can be dangerous for all road users, and can discourage people from walking and biking. Sometimes streets are designed to accommodate a much higher speed than the posted speed limit, which encourages speeding. Designing streets to the desired speed limit can slow traffic, reduce the need for costly enforcement, and can improve safety for all users. “Traffic calming” is an important strategy to slow down traffic to the desired speed on selected streets. A variety of traffic calming treatments can be used to reduce speeds, and selecting appropriate treatments will vary by location. A traffic calming toolkit can help engineers, public safety officials, and community members consider and evaluate treatments that are suitable for each location. With limited funding, priorities need to be established for road retrofit and construction to best accommodate the needs of all users.

A. PERMITTING AND CODE CHANGES

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

B. PROJECTS AND PROGRAMS

1. Complete priority resurfacing, reconstruction, retrofit, and repair of existing roads and bridges based on available funding.
2. 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.
3. Implement maintenance of roadside vegetation and roadway surfaces to increase safety.

C. PARTNERSHIP NEEDS

1. Improve systems, communications, and resources so that County projects funded by the State Transportation Improvement Program (STIP) are completed on schedule.
2. Secure resources and partnerships for maintenance of County roadways.

3. 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.

Objective: To enhance the viability of transit as a transportation choice for residents and visitors.



3.1 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 percent 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.

These and other recommendations are found in the *Kaua'i Short-Range Transit Plan* (approved by the County Council October 2017). 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.

3.2 Encouraging Transit-Ready Development

New development that is "transit ready" has sufficient density and walkability to encourage use of the bus system. Such projects, especially when constructed near transit hubs, can help increase bus ridership and improve the efficacy of the bus system. In recent years, the State has placed an emphasis on transit-oriented development. As a result, there is an opportunity to explore workforce and affordable housing development on state- owned parcels adjacent to bus stops.

A. PERMITTING AND CODE CHANGES

1. Provide density bonuses for workforce housing near transit.

B. PLANS AND STUDIES

1. Implement the *Short-Range Transit Plan*.
2. Complete a Mid-Range (4-7 year) Transit Plan for longer-term transit planning.
3. Address the feasibility and practicality of accommodating luggage, surfboards, and other large objects on County and private buses.

C. PROJECTS AND PROGRAMS

1. Increase mainline service frequency to every 30 minutes, with 15 minute frequency at peak times on peak routes.
2. Identify and implement service modernization features, including GPS location of buses and integration with transit apps; electronic fare recovery; on-board wi-fi; and other amenities to streamline service and attract riders.
3. Focus initial phases of service expansion in areas of highest ridership potential.
4. Improve bus route and schedule information.
5. Complete bus shelters and amenities at 50 priority bus stops.
6. Identify priorities for ADA-compliant pedestrian access to bus stops. Develop a construction schedule and funding plan for priority projects.
7. Provide adequate and efficient bus storage and maintenance facilities.
8. Identify locations for park and rides, especially in coordination with a North Shore shuttle.
9. Convert bus fleet to sustainable fuels.

D. PARTNERSHIP NEEDS

1. Expand the bulk bus pass program to generate transit revenue and encourage ridership.
2. Coordinate with HDOT to incorporate transit stops and pullouts on State Highway projects where needed.
3. Work with State and Federal agencies and local employers to establish a dedicated funding source for transit.
4. Partner with HDOT to design bus stops on rural highways.
5. Develop a transit-ready development pilot project on State lands pursuant to the *State Transit Oriented Development Strategic Plan*.
6. Provide housing adjacent to transit stops, with a special focus on transit hubs.

4. 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.

Objective: To provide connected and convenient pedestrian facilities in communities.



4.1 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. Kaua’i’s Safe Routes to School program, a partnership between the County, the Department of Education, and Get Fit Kaua’i, 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.



Pedestrians in Kilauea, North Shore District

A. PLANS AND STUDIES

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

B. PARTNERSHIP NEEDS

1. Continue a robust Safe Routes to School Program with Engineering, Encouragement, Education, Enforcement, and Evaluation.
2. Complete priority pedestrian projects as identified in Community Plans and other studies.
3. Work with HDOT to identify and implement appropriate pedestrian crossings on State Highways.
4. Develop a Safe Routes to Parks program to identify priority pedestrian improvements within neighborhoods to parks.

5. 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.

Objective: To create connected and safe bicycle networks that accommodate all riders.



5.1 A Complete Bicycle Network

The likelihood of people bicycling for transportation can be divided into four categories:²⁹

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.

29 City of Portland, *Four Types of Transportation Cyclists*

A. PERMITTING AND CODE CHANGES

1. Incorporate bicycle parking requirements into the Comprehensive Zoning Ordinance.

B. PLANS AND STUDIES

1. Establish an islandwide bikeways plan with priorities for implementation through the community planning process.

C. PROJECTS AND PROGRAMS

1. Complete planning, engineering, and construction for the West Side Path from Waimea to Kekaha and from Hanapēpē to Salt Pond.
2. Complete the Ke Ala Hele Makalae path from Anahola to Līhu‘e.
3. Complete planning and first phase construction of a North Shore Path in areas supported by the community.
4. Complete at least one segment of a shared use path identified in the *South Kaua‘i Community Plan and the Līhu‘e Community Plan*.
5. Complete priority bikeway projects as identified in Community Plans.

D. PARTNERSHIP NEEDS

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



Cyclist on Kūhi‘ō Highway

6. 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.

Objective: To implement parking strategies that support community needs.



6.1 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.

A. PLANS AND STUDIES

1. 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.
2. In partnership with the State, develop and implement a parking management plan for the Līhu‘e Civic Center.

B. PARTNERSHIP NEEDS

1. Establish staff resources and funding for Countywide parking enforcement.
2. Work with State agencies to address the parking impact at beaches and other State-owned parks and scenic areas such as Kē‘ē Beach.
3. Work with employers and resort areas to establish parking management strategies that incentivize mode shift.
4. Consider the establishment of parking districts in town centers.



Lihue Airport, Lihue District (Credit: Andrew Baerst, <https://www.flickr.com/photos/baerst/>)

SECTOR: IV. CRITICAL INFRASTRUCTURE

Infrastructure to provide water and dispose of wastewater and solid waste is critical to supporting growth on Kaua'i, yet current systems are stressed and not keeping pace with demand. If Kaua'i 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.

Meeting Current Infrastructure 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. Yet, Kaua'i's landfill is near capacity, and the island is heavily reliant on individual septic systems and cesspools. 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. Strategic infrastructure investments must support

these systems in ways that are environmentally and economically responsible and equitable in their outcomes.

Two General Plan studies document existing infrastructure conditions and estimate future need:

- The *General Plan Update Kaua'i Infrastructure Analysis* (2015) describes existing infrastructure systems on Kaua'i.
- *Assessment of the Adequacy of Kaua'i 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 3-7). 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 Kaua'i.

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.

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 or 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. However, the update of these specific plans should be guided by the General Plan and align with policies 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. Given 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.

1. DOMESTIC WATER

Kaua'i 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.

Objective: To ensure water for Kaua'i's water needs under the Public Trust Doctrine and integrate traditional ahupua'a methods of preserving water for future generations—not taking more than is needed and leaving enough for everyone.



1.1 Reconciling Water Supply and Infrastructure

Kaua'i'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 Kaua'i, which would be required if there were dangers of exceeding sustainable yields in any of our aquifers. The CWRM is expected to issue an updated Water Resource Protection Plan that will have new sustainable yield estimates based on a more cautious approach than previous estimates.

1.2 Improving System Reliability and Addressing Growth

Kaua'i'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 Lihu'e, which supplemented its water needs with Grove Farm's 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 Kaua'i. These range from large systems owned by the Pacific Missile Range Facility and Princeville Utilities Company, Inc. to smaller private systems in Keālia, Kōke'e State Park, Polihale State Park, Pākalā Village, and the Department of Hawaiian Home Lands water system in Anahola. See Figure 3-8 for the locations of public and private water service areas on Kaua'i.

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 replacing an estimated 237 miles of pipeline (out of 400 total pipeline miles) due to deterioration, age, and capacity issues.

The *Water Plan 2020*, updated in 2001, 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 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. 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.

The DOW *Water Plan 2020* incorporated housing unit and population forecasts from the 2000 *Kaua'i General Plan*. The DOW will update its *Water Plan 2020* to a 2040 planning horizon after this General Plan is complete, incorporating updated housing unit and population forecasts. Additionally, DOW prepares a *Water Use and Development Plan*.

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.

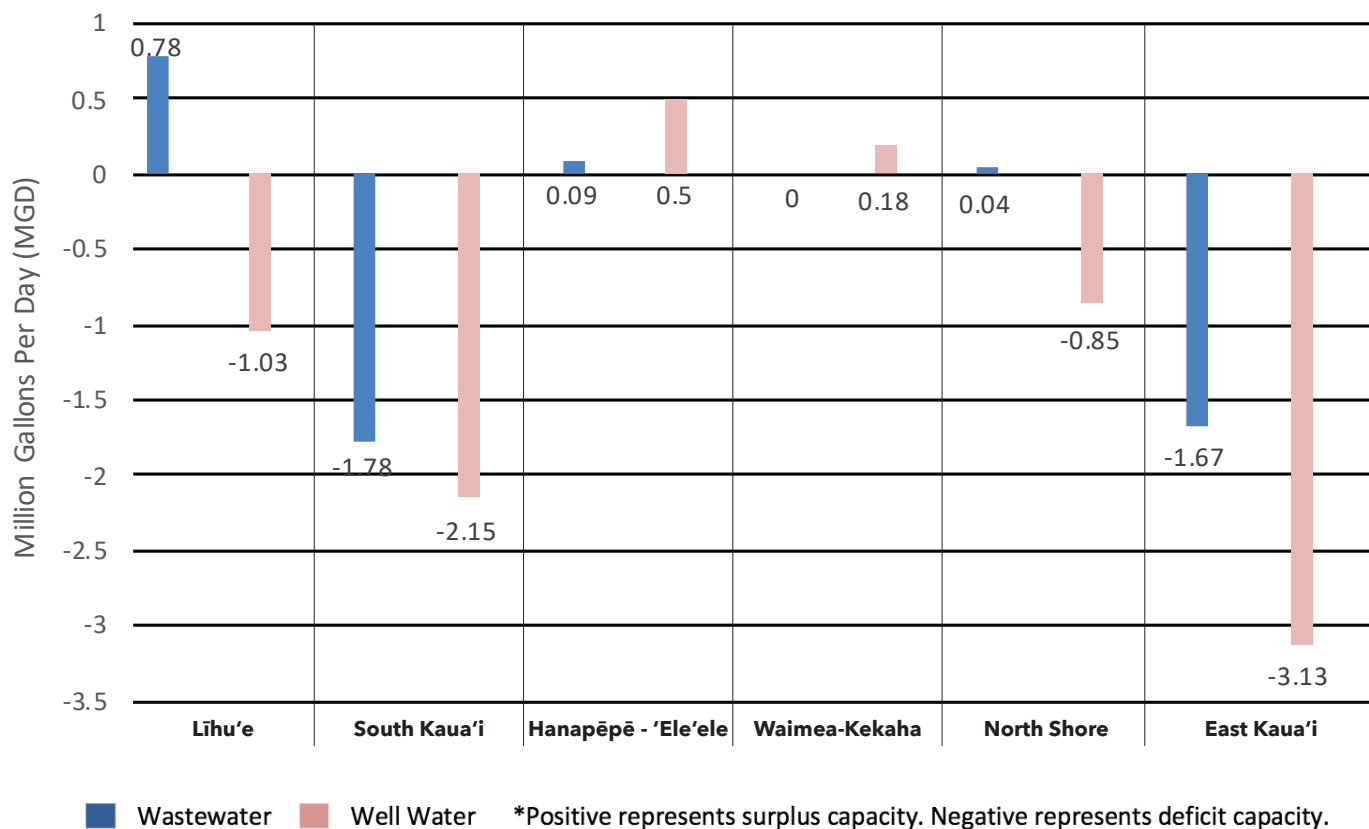
1.3 Enhancing Water Conservation

While there is little concern that we will exhaust the water supply in our aquifers, minimizing water demands will conserve existing system capacity and reduce or forestall the need to expand 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 supply. 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 percent customer metering, leak detection, plumbing code regulations, and public outreach and education programs. The *Water Plan 2020* goals include reducing average daily demand by 2.2 million gallons per day and reducing maximum daily demand by 3.2 million gallons. DOW reports that revenues have been dropping annually, most likely due to rate increases that incentivize customers to use less water.

A. PERMITTING AND CODE CHANGES

1. Prioritize increasing domestic water supply, storage, and distribution systems to meet projected needs while encouraging conservation.
2. Prioritize water infrastructure improvements in infill development areas.
3. Encourage alternatives for non-potable water usage, such as rainwater catchment and greywater recycling.
4. 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.

Figure 3-7 Projected Wastewater and Domestic Water Capacity by District in 2035



5. Conduct an audit of the County’s dependency on surface water regarding future development, based on legal availability and water regulations.

rights, appurtenant rights, domestic water uses, and the needs of the Department of Hawaiian Home Lands.

B. PLANS AND STUDIES

1. Implement and update the County Water Plan to guide system expansion, improvement, rehabilitation, and rate structures to support growth consistent with the General Plan and Community Plans.
2. Reduce potable water usage through recycled water and alternative individual water systems such as rainwater catchment and greywater recycling, and incorporate these into the County Water Plan Update.
3. Update sustainable yield of aquifers, incorporating most recent United States Geological Survey (USGS) low-flow studies and surface water data into the County Department of Water budget, with appropriate reservations for public trust purposes including environmental protection, traditional and customary Native Hawaiian

4. Reconcile water service areas with County planning districts to integrate facilities with Community Plans.

C. PARTNERSHIP NEEDS

1. Encourage water conservation at the individual, business, and municipal levels.
2. Collaborate with community groups on cooperative approaches to water management.

2. WASTEWATER, SEPTIC SYSTEMS, AND CESSPOOLS

Sustainable growth means providing safe and sanitary wastewater disposal solutions for growing areas and converting communities off of cesspools that create environmental pollution and potential health hazards.

Objective: To preserve and protect our fresh and ocean waters and other water resources from wastewater and other pollutants.



2.1 Maintaining and Expanding Regional Wastewater Treatment

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, State Department of Education (DOE) property, and golf courses.

In addition to County systems, there are over 35 privately owned wastewater treatment plants serving various developments on Kaua'i. The largest private systems are in Puhī, 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 other private systems 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.

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 islandwide generation in 2035. The greatest projected needs are on the South and East sides of the island. Only the Lihu'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.

Water recycling is a sustainable approach to wastewater management. It decreases the diversion of water from sensitive systems such as the aquifer or streams and also decreases discharge into the ocean. When adequately treated, recycled water can be used for a variety of water needs such as agriculture and landscaping.

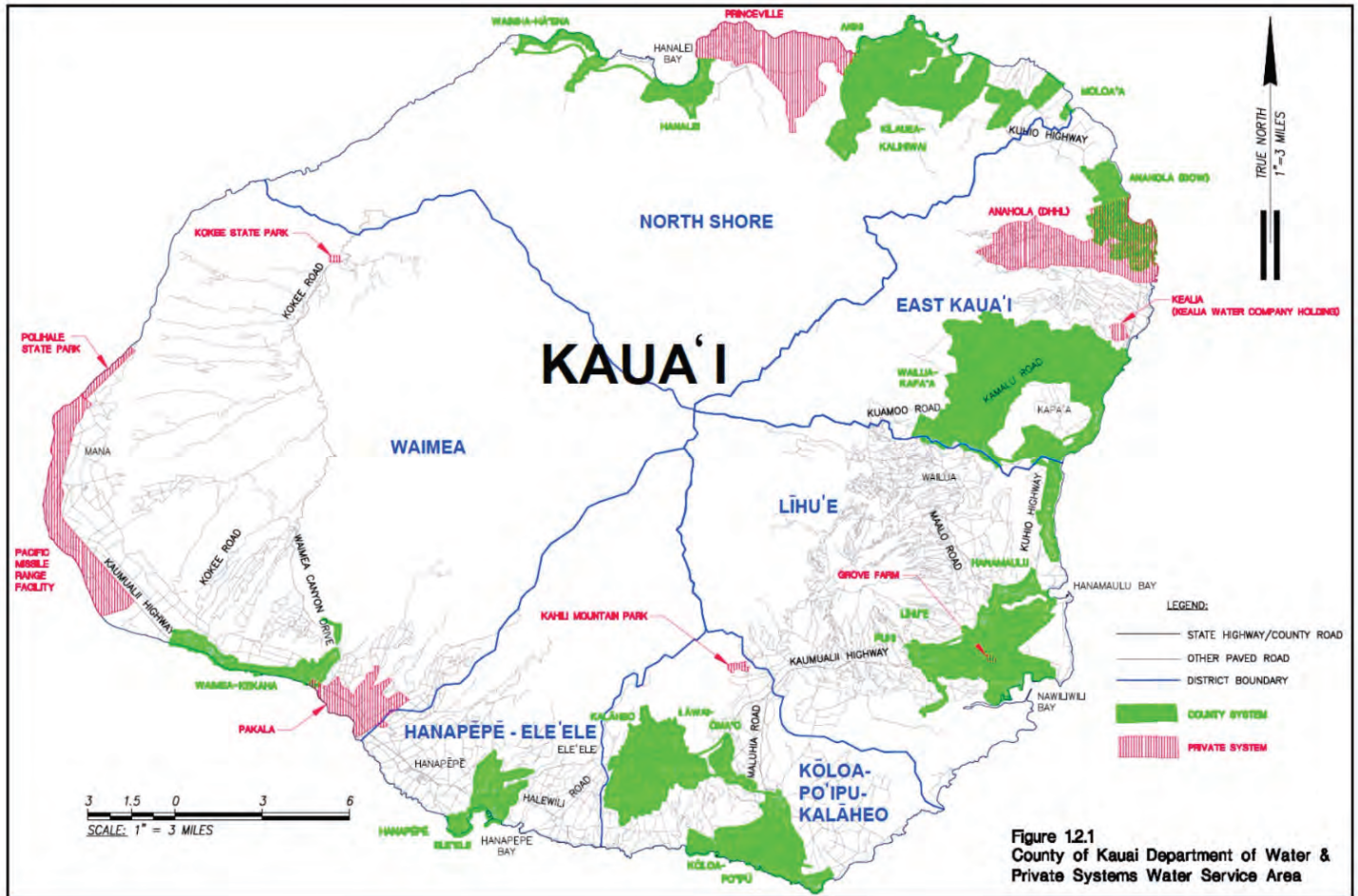
2.2 Addressing Cesspool Conversion

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.

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

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.

Figure 3-8 Public and Private Water Service Areas



■ County System
 ■ Private System
 Source: R.M.Towill (2015)

2.3 Anticipating Emerging Water Quality Concerns

The Wailua 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 Kauai's large number of cesspools and injection wells, with a special focus on South Kauai, Nāwiliwili, and Wailua.

A. PERMITTING AND CODE CHANGES

1. Require large-scale developers to contribute funds toward improved recycled water production and distribution, or to construct their own wastewater reclamation facility.
2. Manage wastewater treatment and disposal in a manner that safeguards human health while accommodating current needs of local residents before any consideration of future growth. These systems are to be efficient and cost-effective, and use recycled water from treatment where possible.
3. Improve the quality of effluent discharged into injection wells, especially those in the Special Management Areas.
4. Support innovative treatment systems that produce effluent at appropriate water quality levels to encourage reuse such as irrigation, industrial uses, and other non-potable use.

B. PLANS AND STUDIES

1. Develop and update wastewater facility plans to guide decisions regarding the allocation of treatment capacity, the expansion of wastewater systems, and system improvement priorities.
2. Coordinate public and private planning, development, operation, and management of wastewater treatment and disposal systems.

C. PROJECTS AND PROGRAMS

1. Locate and relocate wastewater facilities in appropriate geographic areas, based on traditional, cultural, and biological natural filtration systems for the optimization and expansion of wastewater systems and system improvement, considering alternative reclamation technology or tertiary treatment.
2. Provide adequate trunk sewer and collection main capacities to serve existing and future urban development.
3. Plan for and implement regional wastewater treatment solutions for South Kaua'i and Kīlauea.
4. Monitor the disposition and potential effect of cesspool seepage and injection wells on the groundwater and nearshore water quality.
5. Support water reuse projects and increase the use

of recycled water.

6. Explore opportunities to utilize the Clean Water State Revolving Fund Program for financing water quality infrastructure projects, including energy savings at plants, capacity increases including new pump stations, and drainage improvements.
7. Improve wastewater infrastructure through grant and loan programs, such as the USDA Rural Development Program.

D. PARTNERSHIP NEEDS

1. Reduce the number of cesspools through septic conversion or through connection to a new or existing regional wastewater system.
2. Institute best practices for diverting and reusing wastewater.

3. SOLID WASTE DISPOSAL AND RECYCLING

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

Objective: To provide environmentally-sound waste disposal and collection services with a goal to reduce the solid waste stream by 70 percent.



3.1 Managing the Solid Waste Stream through Increased Diversion

There are significant challenges to managing solid waste disposal on a small island with a growing residential and visitor population. The Department of Public Works (DPW) provides islandwide service for collecting and disposing of solid waste generated by residents. This includes a limited number of commercial customers, including Transient Vacation Rentals. The majority of businesses requiring dumpster service are collected by private refuse hauling companies. The DPW currently does not have curbside recycling or curbside green waste collection programs. All residential recycling is voluntary, and residents must transport material to various centers located throughout the island.

In 2015, total islandwide waste generation was approximately 150,000 tons (roughly estimated at 11.6 pounds per person a day). An estimated 44 percent of total waste is diverted from the landfill through recycling and other diversion efforts. The diversion rate has increased steadily over the past ten years; however, it cannot be assumed the diversion rate will continue to climb. Reaching the County's goal of 70 percent diversion by 2023 will require a new materials recycling facility (MRF), curbside recycling,

recycling mandates for businesses, and curbside collection of green waste.

THE COUNTY HAS A GOAL OF 70% DIVERSION BY 2023

In July 2016, Kaua'i 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 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 Kaua'i. In FY 2015, 31,450 tons of green waste was diverted at County transfer stations, Kekaha landfill, and through commercial efforts.

This undiverted amount of green waste 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, green waste 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 below.

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 from appliances

to household hazardous waste. 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 and outreach efforts.

Disposal of commercially generated cardboard, metal, and green waste is restricted at the landfill. This has been very effective to ensure that large generators do not dispose of recyclable items. The County is looking to reinforce this existing legislation by mandating that local businesses have recycling programs in place for materials that are easily recyclable.

The Hawai'i Deposit Beverage Container (DBC) law was implemented in 2005 and covers water and other beverages packaged in aluminum, bi-metal, glass, and certain plastics. This provides an economic incentive to recycle and has significantly increased the diversion of these containers. The current recycling rate is 68 percent.

Food waste is another opportunity to divert waste from landfills, especially since food waste emits high levels of greenhouse gas in landfills. The County's "Food: Too Good to Waste" public awareness campaign provides tools and tips for residents and businesses to save money by reducing food waste. The County will explore other remedies to solid waste disposal through new technologies and new methods.

3.2 Developing a New Landfill

DPW manages the County's only landfill at Kekaha, where all municipal solid waste from residents and businesses is disposed. The landfill has a limited lifespan with less than 700,000 cubic yards of capacity remaining³⁰. The estimated remaining lifespan of the landfill is approximately 4.9 years.

This requires increasing waste diversion and capacity at the Kekaha Landfill, while expediting the development of a new landfill site. Decisive action is needed, as the required environmental studies, land acquisition, and program implementation for a new landfill site will be a lengthy process.

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 Kaua'i.

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

Long-term management of Kaua'i'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.



Automated truck and cart

30 The Waste Management of Hawai'i (WMH) Annual Report released in February 2015

A. PERMITTING AND CODE CHANGES

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

B. PLANS AND STUDIES

1. Update and implement the *Solid Waste Integrated Management Plan* to set policies for solid waste programs, facility planning, capital improvements, operations, user fees, and financing facilities and operations.
2. Plan and prepare for emergency debris management and disposal due to future major storms and tsunamis.

C. PROJECTS AND PROGRAMS

1. Site and construct a new landfill.
2. Establish an automated weekly, curbside collection system for residentially generated green waste and recyclables.
3. Reduce solid waste volume through source-reduction through new technology and programs that reuse building materials, minimize packing materials, and other measures. Focus attention on large volume purchasers and developers.
4. Divert at least 70 percent of solid waste through increased source reduction, recycling, biodiversion, and landfill diversion methods.
5. Maximize effective life of existing and future landfill capacity.
6. Increase the convenience of recycling centers for users.
7. Provide commercial volume-based collection with enhanced recycling programs, including incentives for businesses to adopt zero-waste collection programs.

4. AIRPORTS AND HARBORS

Ocean and air travel are what keep Kaua'i 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 Kaua'i's economy.

Objective: To support the modernization and user-friendliness of Kaua'i's airports and harbors.



4.1 Modernizing Airports to Serve Current and Future Needs

Kaua'i's main airport in Līhu'e is managed by the HDOT Airports Division. In addition, the HDOT operates the Port Allen airport, a general aviation airport. HDOT is undertaking a statewide Airports Modernization Program. In Līhu'e, 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.³¹ The State of Hawai'i Office of Planning recently completed a Technical Assistance Memorandum (TAM) to guide planning of land uses within five miles of airports to ensure land uses that are compatible with airport operations, including aircraft landing and takeoff.³² While improvements to airports are justified to serve existing and projected demand, there is concern that increasing the capacity of Līhu'e 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.

4.2 Accommodating Demand for Commercial Harbor Facilities

Kaua'i's two commercial harbors at Nāwiliwili Harbor and Port Allen are also owned and operated by the State through the HDOT's Harbors Division. Nāwiliwili Harbor serves as the primary commercial harbor for Kaua'i with facilities for handling both overseas

³¹ *Hawai'i Airports Modernization Program, 2008*

³² TAM-2016-1, August 1, 2016

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 *Kaua'i Commercial Harbors 2025 Master Plan* (CHMP) was updated in 2001 and contains recommendations for both harbors through the year 2025. Kaua'i 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 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 inter-island 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. Inter-island terminal needs may also be met by harbor reconfiguration or additional land acquisition.

In addition to handling overseas and interisland containerized cargo, Nāwiliwili Harbor can accommodate the domestic and international cruise ships that come to Kaua'i. At Nāwiliwili Harbor, Pier 2 is primarily used as the cruise ship terminal with a berth length of 531 feet and a depth of 35 feet at pier side.³³ In 2017, 21 cruise ship companies anchored at Nāwiliwili Harbor with Pride of America accounting for the majority of the trips to Kaua'i.³⁴ With the exception of Pride of America, a Hawai'i Cruise line, most cruise ships that come to Kaua'i are part of a longer route that comes from either Los Angeles or Mexico.

In the *Commercial Harbors 2025 Master Plan* (2001), there were several recommendations for Nāwiliwili Harbor that included providing sufficient berthing facilities for the growing industry and ensuring the safety of passengers from commercial cargo operations. To implement the *Commercial Harbors 2025 Master Plan*, the Hawai'i Department of Transportation – Harbors Division has recently included in their draft environmental assessment a

proposal for Nāwiliwili Harbor drainage and pedestrian improvements. The paving and construction of the roadway connecting Pier 2 and Pier 3 will improve safety by designating a pedestrian walkway for cruise ship passengers separate from the commercial cargo activities.

4.3 Valuing Small Boat Harbors as Important Recreational Resources

Small boat harbors are a valued recreational amenity on Kaua'i. 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.

A. PERMITTING AND CODE CHANGES

1. At airports, accommodate shuttles that transport visitors to resort destinations.
2. Do not expand the Princeville Airport, except for use as a parking hub and gateway for visitors to the North Shore.

B. PARTNERSHIP NEEDS

1. Support DOBOR with master planning and acquiring funding for expansion and maintenance of all small boat harbors.
2. Update the Līhu'e Airport Master Plan and address capacity issues.
3. Collaborate with HDOT Airports Division in the implementation of the TAM.
4. 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.
5. Support HDOT – Harbors Division to implement and update the *Kaua'i Commercial Harbors 2025 Master Plan*.

³³ HDOT – Harbors Division, *Port of Call Handbook*: <http://hidot.hawaii.gov/harbors/files/2012/10/Nawiliwili-Harbor-Kauai.pdf>

³⁴ HDOT – Harbors Division, *Passenger and Cruise Schedules*: <https://hidot.hawaii.gov/harbors/files/2013/01/DOC001.pdf>



Hanalei Pier at Black Pot Beach, North Shore District

SECTOR: 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. Kaua'i'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 Kaua'i 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, public art, park design, and landscaping, there are a multitude of ways that Kaua'i'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.

1. TOWN CENTERS

Kaua’i’s small towns are the pride of the island, with historic charm and unique character. Town centers are hubs for activity, commerce, and interaction. In spite of the technological progress made in the digital and automobile age, some of our town centers have declined and independent businesses have closed. Presently, we have the opportunity to revitalize these town centers by encouraging a mix of businesses and housing, along with attractive design and safe sidewalks.

Objective: To develop town centers as attractive places to work, live, and play.



1.1 Helping Town Centers be Vibrant Shared Spaces

Kaua’i’s town centers are the primary milieus for daily civic, business, and commercial activities. Both existing and future town centers are designated “Neighborhood Center” on the Future Land Use Map. In Līhu’e, some town center areas are designated “Urban Center.” Residents place a high value on their historic towns and efforts to revitalize business and generate economic activity are ongoing in Waimea, Hanapēpē, Kōloa, Līhu’e, and Kapa’a.

The General Plan supports focused development within towns, also known as infill development. More intense and efficient use of existing urban space will protect open space and rural character. Infill development requires improvements to the infrastructure capacity and physical environment of town centers. 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. At the same time, redevelopment must be balanced with protection of a town’s historic character. The preservation of historic plantation architecture creates sense of place,

allowing residents and visitors to feel connected to the town’s past.

1.2 Supporting Public Art

Public art is art that is placed and integrated into the public realm for everyone to enjoy. It includes a variety of forms such as murals, sculptures, and statues. Art can also be reflected in the design of bus shelters, park facilities, and crosswalks. Public art enhances sense of place and can educate people about Kaua’i’s history and heritage. Some examples of public art includes the whale mural by Wyland in Waipouli and the installation at the roundabout at Umi and Hardy Streets. Since 1967, the State has had an “Art in State Buildings” law where one percent of the construction costs of new public buildings is designated for art work.

A. PERMITTING AND CODE CHANGES

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

B. PLANS AND STUDIES

1. Acknowledge the important role of town squares and other civic space in town centers and seek to improve usability of such venues.
2. Establish or update urban design standards through Community Plans.
3. Identify public art opportunities and funding in community and facility planning.

C. PROJECTS AND PROGRAMS

1. Implement economic revitalization projects in town centers, such as the Lihu'e Town Core TIGER grant project.
2. Construct centralized parking lots in towns that experience parking management issues.
3. Improve criteria for species selection and maintenance of street trees and landscaping.
4. Identify opportunities for public art installation in projects, such as roundabouts, parks, and streetscape improvements.

D. PARTNERSHIP NEEDS

1. Foster civic engagement in town centers through placemaking activities.
2. Conduct community events that bring people together.
3. Activate and revitalize public spaces with artwork, programs, and performances.
4. Use underutilized public space as venues for creative expression.

2. 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 coastlines, and also strengthen community fabric through shared space and amenities for play, exercise, socializing, and enjoying nature.

Objective: To provide a variety of quality and accessible parks and recreational facilities.



2.1 Maintaining Our Existing Park System

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 Wailua Golf Course, and cultural preserves at Ka Ulu o Paoa, Ka Ulu o Laka, and Kāneiolouma. 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 Kāneiolouma. 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).

Given the extensive use of Kaua'i's parks by residents and visitors, park maintenance is a 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.

While the regional and district parks attract the greatest numbers of users and are easier to maintain from a resource allocation perspective, the County should maintain all of its parks to serve the diversity of users on the island. Budgeting the available resources proves to be an ongoing challenge and illustrates the need to diversify sources of financial and in-kind support. Currently, the Public Access, Open Space, Natural Resources Preservation Fund (commonly known as the the Open Space Fund) receives 0.5 percent of real property taxes and can be used to acquire park land.³⁵ Other sources of funding, including facility use fees and State and Federal grant programs for land acquisition, are utilized for 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.

2.2 Supporting Communities through a Range of Parks

Most parks provide landscaped refuges with space for keiki to play or for adults to sit and enjoy the outdoors. However, substantial park acreage is underutilized and could support a variety of park types and recreational uses. An active neighborhood park strengthens and connects communities by providing civic space. This type of shared space supports infill development and new growth. Although Kaua'i has many neighborhood and passive parks, most do not provide the full range of facilities desired by residents.

A range of park sizes and types in proximity to neighborhoods supports healthy activities and builds community cohesion. Park land can be used for broad or specialized uses, from community gardens, dog parks, skate parks, and larger multi-use park complexes. The usability of neighborhood parks can be improved by adding playgrounds, walking paths, seating, and pavilions. Facilities for children and the aging population must be considered in park design. Community Plans can identify areas appropriate for park uses in each district. A 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



Bynum Bridge Playground at Lydgate Park, Lihu'e District

35 County of Kaua'i Parks and Recreation Master Plan, 2013

tailored to the unique needs and identities of each neighborhood.

2.3 Improving Park Accessibility for Greater Equity

Park accessibility is important from an equity perspective. Parks and their facilities should be safe and accessible for people of all ages and abilities. 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 park system must 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.

2.4 Facing the Challenges of Beach Park Management

Beach parks are among Kauaʻi's most treasured scenic and recreational assets. They accommodate a 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. Security and maintenance of Kauaʻi'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.

The most popular beach parks in South Kauaʻi, East Kauaʻi, and the North Shore are getting more crowded, and public uses occasionally conflict. It is difficult for residents to enjoy traditional recreational beach activities in an overcrowded setting. In order to preserve the local lifestyle, many residents desire for some areas to be reserved primarily for local use and not heavily promoted to visitors. Furthermore, visitor safety in these areas, which often lack water safety officers, is another valid concern.

Access and parking at beach parks can limit the enjoyment of residents and visitors. Many parking areas are too small to accommodate demand. In some cases, development near popular beaches provides 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 noting that Kauaʻi'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.

A. PERMITTING AND CODE CHANGES

1. 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.
2. Provide a range of civic space and functional parks in large residential projects and in new communities.
3. Streamline permitting of public facilities to efficiently coordinate the development and expansion of parks.
4. Allow in-lieu funding expenditure on facility capital improvements through the Park Dedication Ordinance.

B. PLANS AND STUDIES

1. Plan for safe routes to parks, especially in areas with high concentration of youth.
2. Utilize vacant or underused County-owned land for community purposes.
3. Update and implement the *Kauaʻi Parks & Recreation Master Plan (2013)*.

C. PROJECTS AND PROGRAMS

1. Support priority projects in the *Kauaʻi Parks & Recreation Master Plan*.
2. Prioritize park improvements and provide safe routes to parks, especially in low-income neighborhoods with high concentrations of youth.
3. Implement a playground development and rehabilitation program to provide high quality play environments, especially in underserved communities.
4. Enhance parks by making them more conducive to physical activity through shared use paths, play equipment for more than one age group, skate parks, disc golf, tennis facilities, and other improvements.

5. Promote social interaction through facility improvements, such as pavilions, shade trees, and seating.
6. Expand indoor recreation spaces at selected parks.
7. Ensure safety and cleanliness at Kaua'i's beach parks. Use Crime Prevention Through Environmental Design (CPTED) when planning improvements.
8. Address illegal camping in parks.
9. Provide accessibility features at popular facilities such as beach parks.
10. Develop and install uniform signage, including interpretive signage that promotes a sense of place and educates the public at County beach parks regarding sensitive coastal and marine ecosystems and wildlife.
11. 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.

D. PARTNERSHIP NEEDS

1. Expand the County's park stewardship agreement program.
2. Explore alternative sources of funding for priority park improvements, such as crowdfunding and community initiatives or collaborations.
3. Implement programs for beach and dune restoration, especially at beach parks experiencing erosion such as Po'ipū Beach Park.
4. Encourage expansion of programs and legislation supporting septic systems in place of cesspools located within 200 feet of a shoreline, perennial stream, or wetland.

3. LINEAR PARKS AND TRAILS

Pedestrian and biking paths and trails are special public recreational assets. They offer a scenic and safe refuge from traffic and development, allowing residents and visitors to experience Kaua'i's natural environment. Trails are identified in the Heritage Resource Maps in Chapter 5.

Objective: To expand and improve access to Kaua'i's shared use paths and trails.



3.1 Extending Kaua'i's Shared Use Path Network

Shared use paths, often located within a linear park, are separated from roads and provide a safe environment for pedestrians and cyclists of all ages. Benefits of shared use paths include lessening dependence on fossil fuels, improving community health, increasing public access, and providing economic development opportunities. Since the last General Plan, the County has constructed over eight miles of shared use path along the Kapa'a-Wailua Coast, also known as Ka Ala Hele Makalae. In addition to allowing residents and visitors to enjoy an uninterrupted traverse of the coastline or open space, shared use paths increase travel choice by providing important non-vehicular connections between towns or nodes of activity. Based on the success of Ka Ala Hele Makalae, other paths have been planned for the North Shore, South Kaua'i, and Waimea-Kekaha.

3.2 Increasing Recreational Opportunities through Trails

Kaua'i's people have a long tradition of using trails for subsistence activities in the mountains and along the coast. Today, trails are an invaluable resource providing access not only to recreation, but to experience cultural history, hunting game animals, managing natural resources, and suppressing wildfires. The majority of Kaua'i's public and signed trails are maintained through the State – either State Parks or the Nā Ala Hele Program. The Nā Ala Hele Program also regulates activities, plans future trails,

and conducts maintenance activities. The Kauaʻi Nā Ala Hele Advisory Council provides a venue for public input on program implementation.

A. PERMITTING AND CODE CHANGES

1. Provide safe and convenient access to beaches and inland resources through the park system.
2. Identify and design new shared use paths to provide safe corridors for pedestrians and cyclists.
3. Encourage the development of accessways to the path, when development is adjacent to or near a shared use path.
4. Increase opportunities for public access to mountainous and forested areas in a way that is ecologically sustainable.

B. PROJECTS AND PROGRAMS

1. Complete Ka Ala Hele Makalae from Anahola to Līhuʻe.
2. Construct the Waimea-Kekaha Shared Use Path.
3. Construct the North Shore Shared Use Path.
4. Construct a South Kauaʻi Shared Use Path.

C. PARTNERSHIP NEEDS

1. Explore expansion of the Nā Ala Hele trail system, especially in Planning Districts without formal trails.



Ka Ala Hele Makalae in Wailua, East Kauaʻi District

4. STATE PARKS

Kauaʻi’s more than 14,000 acres of State parks include the world-renowned 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, the lack of upkeep and maintenance of State parks is a persistent issue, reducing the quality of the park experience for resident and visitor alike.

Objective: To improve the resident and visitor experience at Kauaʻi’s State Parks.



4.1 Improving the Experience of Visitors and Residents at State Parks

The State manages nine parks on Kauaʻi, including larger parks at Kōkeʻe and Waimea Canyon, and the world-famous Nā Pali Coast Wilderness Park (see Table 3-2). The County is an important partner in helping to ensure the best possible management and improvement of State Parks for the residents and visitors who use them. The degree of park-related problems is illustrated by a recent visitor survey.³⁶ Approximately 85 percent of visitors were very satisfied with Kauaʻi’s beaches, whereas only 61 – 69 percent of them were very satisfied with the island’s parks.

4.2 Adequately Funding State Park Improvements

In addition to traffic and parking issues, Hāena State Park, Kōkeʻe State Park, and Waimea Canyon State Park are underfunded relative to the demands placed on them. For example, limited parking at Hāena State Park has led to illegal parking and frustration

36 Kauaʻi Visitor Survey, 2015

Table 3-2 State Parks on Kaua’i

Park Name	Planning District	Master Plan Status
Kōke’e State Park	Waimea-Kekaha	Approved in 2013.
Polihale State Park	Waimea-Kekaha	Master plan not updated.
Waimea Canyon State Park	Waimea-Kekaha	Approved in 2013.
Waimea State Recreational Pier	Waimea-Kekaha	Master plan not updated.
Russian Fort Elizabeth Historical State Park	Waimea-Kekaha	Master plan not updated.
Ahukini State Recreational Pier	Līhu’e/East Kaua’i	Master plan not updated.
Wailua River State Park	East Kaua’i	Master plan not updated.
Hā’ena State Park	North Shore	Draft plan released in 2015.
Nā Pali Coast State Park	North Shore/Waimea-Kekaha	Master plan not updated.

for visitors and residents seeking to visit the many attractions nearby. An unmanaged parking situation has contributed to high rates of theft and vandalism at the parking lot.

State Parks has completed or is in the process of developing master plans for major parks, such as Hā’ena, Waimea, and Kōke’e. In order to implement solutions and improve park facilities per the master plans, funds will have to be provided.

A. PARTNERSHIP NEEDS

1. Implement the Waimea Canyon, Kōke’e, and Hā’ena State Park Master Plans.
2. Complete master planning for Russian Fort, Polihale, and Wailua River State Parks.
3. Support adequate funding and staffing for capital improvements, including maintenance and enforcement for public parks, trails, and recreation areas.
4. Improve and coordinate infrastructure and transportation to reduce visitor impacts.



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



Hanapēpē Art Night, Hanapēpē-'Ele'ele District

SECTOR: VI. ECONOMY

Kaua'i strives to be a place where the economy is resilient, small businesses thrive, and all people have opportunities to access the education and training that lead to gainful employment. We must collaborate and find creative ways to leverage our assets so existing and new industries can grow.

Increasing Economic Opportunity for All

Over the long term, average annual job growth is projected at 1.12 percent, equating to 34,900 civilian wage and salary jobs by 2035. The number of self-employed persons is also projected to increase at a rate higher than the rest of the State. In terms of industrial growth, tourism comprises 30 percent of all employment and will likely remain Kaua'i's leading industry.³⁷ Kaua'i's other anchor industries include healthcare (11 percent), education (8 percent), construction (6 percent), and government (6 percent).

Despite the projected job growth, economic opportunity on Kaua'i is offset by the high cost of living. The average family of four must earn ten percent more than the rest of the State, and more than 160 percent of the State minimum wage to meet their basic needs.³⁸ On top of this, Kaua'i's median household income is typically far less than the State average.³⁹ As a result, many residents 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.

37 Kaua'i Economic Summary Report, Collaborative Economics 2015

38 Self-Sufficiency Standard: Estimates for Hawai'i 2014, DBEDT 2015

39 State of Hawai'i Databook 2014, DBEDT 2015

Supporting Regional and Community Based Economic Development

Growing economic opportunity requires cooperation and collaboration. The Chamber of Commerce, Kaua'i Economic Development Board (KEDB), and other associations lead initiatives and often partner with the County's Office of Economic Development. Kaua'i Community College plays an essential role in developing education and workforce training opportunities. The County relies on these partnerships in its efforts to attract new industries and stimulate existing businesses. *The Kaua'i Comprehensive Economic Development Strategy*, or CEDS, engages the County and stakeholders to craft strategies for economic growth over the short term. Strategy updates occur every five years and in concert with the development of a regional statewide CEDS.

Cultivating Economic Diversification and Resiliency

Kaua'i's visitor industry provides livelihoods to many, but the heavy reliance on tourism is a major concern. Disruptions in global and national tourism are out of our control, yet they have large repercussions on Kaua'i. For Kaua'i's economy to be more resilient and less dependent on a single industry, there will need to be a diversity of living-wage jobs in different sectors. These jobs must be supported by a skilled and educated workforce. The 2016-2021 CEDS seeks to foster a diversified economy. The six target industry clusters identified as promising areas for growth are:

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

In 2014, these sectors comprised approximately 30 percent of Kaua'i's private sector jobs, 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. Additionally, to realize the goal of becoming more resilient, businesses must be prepared and protected so they can recover from natural disasters and adapt to impacts from climate change.

O kau aku, o ka ia la mai, pelā ka nohona o ka 'ohana

From you and from him, so lived the family. The farmer gave to the fisherman, the fisherman gave to the farmer.

Providing the Physical Capacity for Economic Growth

For economic growth to occur, an adequate amount of space must be available for Kaua'i's business needs including commercial, industrial, resort, and agricultural uses. Other important strategies include redeveloping our town centers as attractive places to work and promoting mixed use and adaptive reuse to more efficiently use non-residential urban space. Workforce housing must also be provided near major jobs centers, such as resort areas and Līhu'e. These needs and strategies are cross-cutting in nature and are included in the Shared Spaces and Housing Sectors. The following strategies are reflected in the Future Land Use Map and summarized below:

Strengthening Existing Town Centers and Mixed Use Environments

Directing growth and infrastructure investment within or adjacent to town centers will generate economic activity for small businesses. Through a directed growth policy, our town centers can support a mix of housing, commerce, and recreational uses that appeals to our millennial and baby boomer population. Mixed use zoning will better accommodate Kaua'i's self-employed and cottage businesses.

Relevant Land Use Map Changes:

- Application of Neighborhood Center and Neighborhood General around existing town cores (Kekaha, Waimea, Hanapēpē-‘Ele‘ele, Port Allen, Līhu‘e, Kapa‘a, Kapahi, Anahola, Kīlauea, Hanalei)
- Application of Special Planning Areas in Līhu‘e and South Kaua‘i (Kōloa, Kalāheo, Kukui‘ula roundabout area) to encourage infill housing and mixed use within existing town cores

Providing Adequate Space for Industrial Uses and Manufacturing

In order to accommodate industrial and manufacturing needs, the supply of existing industrial zoned land must be carefully considered. There is a deficit of industrial lands outside of the Līhu‘e Planning District, and many small businesses such as welding shops, auto repair, and woodshops are left to operate in residential areas via a use permit or illegally. The potential of former plantation mill sites for redevelopment or adaptive reuse must also be tapped.

Relevant Land Use Map Changes:

- Industrial Designation at Kōloa Mill, Port Allen, Olokele Mill, and Anahola

Revitalizing Existing Visitor Destination Areas

Over the last two decades, a substantial number of jobs have been generated within the visitor industry (arts, entertainment, recreation, accommodations, and food services). However, visitor growth also strains public facilities, infrastructure, and public services. Therefore, new resort growth and infrastructure should be focused in the VDA.

Relevant Land Use Map Changes:

- No resort designation expansion

Protecting Agricultural Lands for Agricultural Production and Food Self-Sufficiency

The County and State can protect the capacity for agricultural production through the designation of Important Agricultural Lands, density controls, and changes to development standards.

Relevant Land Use Map Changes:

- IAL designations
- Urban Edge Boundary in the Līhu‘e Planning District

Fostering a University District

Access to quality education and training is needed to expand Kaua‘i’s workforce and to facilitate growth in the emerging industries. The University Zone designation reflects the community’s desire to recognize Kaua‘i Community College and the surrounding area as an education center with supportive residential and commercial mixed uses.

Relevant Land Use Map Changes:

- University Zone designation in the Līhu‘e Planning Area

The following sections discuss objectives and actions for Tourism, Agriculture, and Small Businesses and Promising Economic Sectors.

Kaua‘i 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.

1. TOURISM

The visitor industry is the mainstay of Kaua'i'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 Kaua'i as a unique visitor destination by focusing on revitalization and limiting new resort designations. This shifts the focus from expansion of the visitor industry to implementing a model of high value, low impact tourism that puts protection of the qualities and values that visitors come to experience as a high priority.

**Table 3-3
2016 Average Daily
Visitor Census by Month**

Month	Average Daily Census
January	27,603
February	24,744
March	24,772
April	22,495
May	22,140
June	29,104
July	29,258
August	24,082
September	20,979
October	22,244
November	22,055
December	28,055
Average	24,797

Source: Hawai'i Tourism Authority, 2017

Objective: To focus new resort development in areas designated for visitor use.



1.1 Managing Average Daily Visitor Count and Visitor Impacts

Every year, over 1.1 million visitors are drawn to Kaua'i'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 Kaua'i's natural beauty and small town character.

In 2016, Kaua'i's Average Daily Visitor Count (ADVC) was 24,797, which is more than one-third of the 2016 resident population. As much as visitors support Kaua'i's economy, they also stress infrastructure and increase the demand for public services. For this reason, recent growth in visitor arrivals has been a concern for many residents. Over the long term, growth in Kaua'i's ADVC has averaged 2.0% per year. However, since 2010, the ADVC has grown at an annual growth rate of 4.0% per year. (2010 ADVC: 19,548 (Figure 3-9); 2016 ADVC: 24,797 (Table 3-3)). If growth were to continue at that rate by 2035, the ADVC would increase by 112% to 52,600. However, that Kaua'i's ADVC is highly variable year-to-year and is sensitive to global economic conditions, political

conflict, and growth in other tourism markets. Recent projections by the State and industry experts estimate that ADVC will be more than 32,700 by 2030. Hawai'i's visitor arrivals growth is also constrained by airport infrastructure and the availability and utilization of gates at Daniel K. Inouye International Airport (HNL) and the Līhu'e Airport (LIH). The Hawai'i Airports Modernization Program shows the creation of the new mauka concourse in Honolulu to accommodate gate demand during peak hours and the new larger capacity planes. However, the concourse would mainly address the future growth expected from the Asia markets such as Japan, which have not been Kaua'i's target markets. The Modernization Program does not include increasing gates at the Līhu'e Airport.

Without these supply constraints the Kaua'i visitor arrivals and daily census forecast would follow the U.S. GDP growth rate since Kaua'i's source has been the United States and the key variables of U.S. visitors arrivals has been personal income and GDP. The Organization for Economic Co-operation and Development (OECD) GDP forecast for U.S. GDP

ranges from +2.8% growth in 2018 to +2.0% growth in 2035. Following along that measure for a high limit boundary the average daily visitor census would reach 39,480 visitors per day in 2035.

As mentioned earlier, the 2010-2016 average daily visitor census growth rate reflects the current strong West Coast economies. Furthermore, recent damage to tourism infrastructure in competitive destinations may spur a short-lived boost in visitors. However, the visitor industry in Hawai'i is historically very cyclical and supply side effects will soon correct the market demands.

Many feel that the current level of tourism growth on Kaua'i is excessive and as a result creates negative social and environmental impacts. For example, the *Kaua'i Tourism Strategic Plan (2015)* explained that when ADVC exceeds 25,000 there is a notable decline in both the visitor experience and residential quality of life. The traffic congestion along the highway in Wailua-Kapa'a is an oft-cited example. Many feel Kaua'i has hit its "carrying capacity" with regard to certain infrastructure systems, particularly the most heavily utilized parks and road networks. 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. Popular destinations such as Hā'ena State Park are actively looking for ways to

address overcrowding and other impacts.

In order to deal with tourism impacts, government and the resort industry will need to collaborate and engage in tourism management. One important step is to actively monitor and assess visitor impacts on infrastructure and facilities. By quantifying impacts, the County and State can better plan to control the impacts of excessive tourism. Tourism management includes a range of methods, from increasing the supply of recreational opportunities and facilities, reducing public use of certain resources, and changing visitor behavior through education and signage.

1.2 Managing Visitor Unit Inventory Expansion

Resort and hotel properties account for 20 percent of the total revenue from Real Property, and vacation rentals account for an additional 21 percent.⁴⁰ Over 40 percent of the County's Real Property tax revenue comes from visitor accommodations.

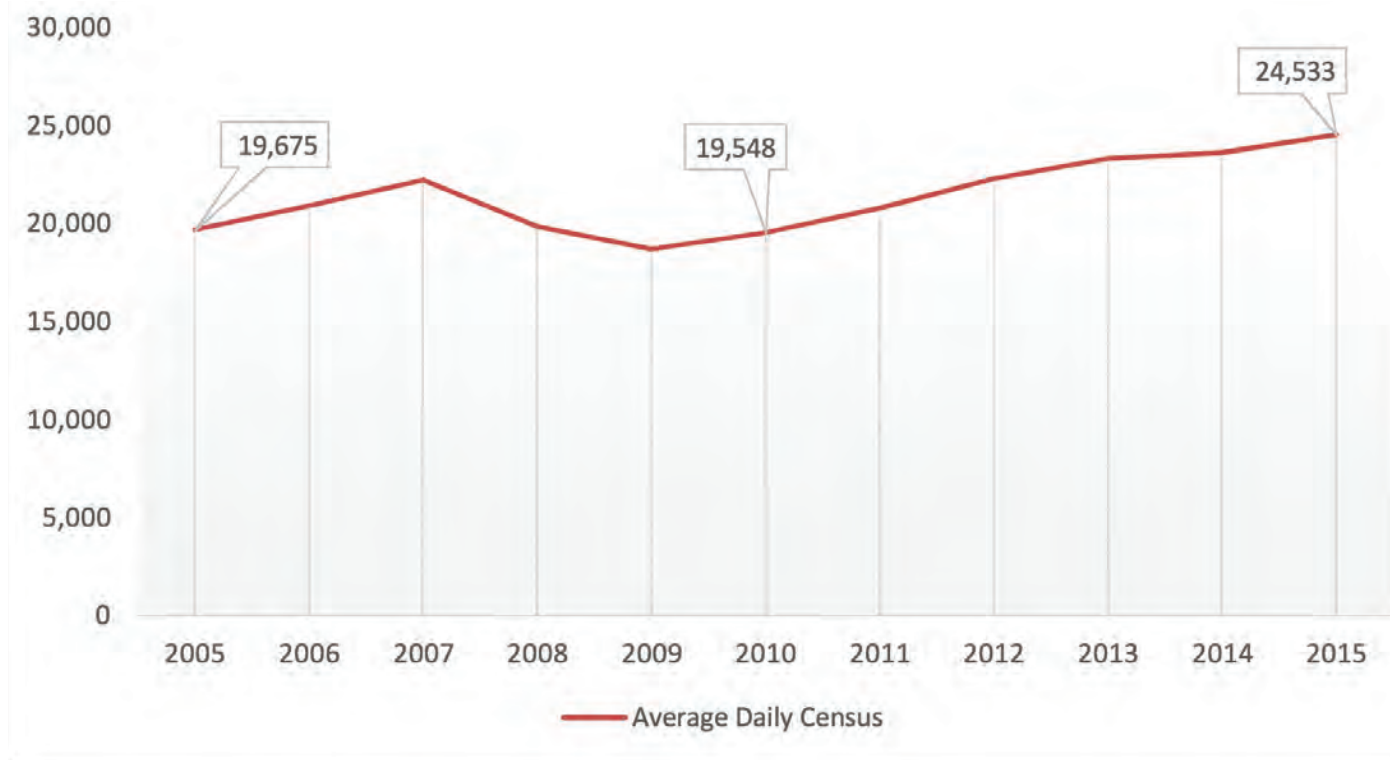
However, dealing with excessive tourism also means managing the supply of visitor units. According to the *2016 Visitor Plant Inventory*, Kaua'i has 8,444 visitor units, which includes hotel units, timeshares, apartment-hotels, and individual vacation units (see Figure 3-10). This is an increase of 1,285 units from

40 County of Kaua'i Real Property Data, 2016



People enjoying the blue waters of Kē'e Beach, North Shore District

Figure 3-9 Average Daily Visitor Census (2005-2015)



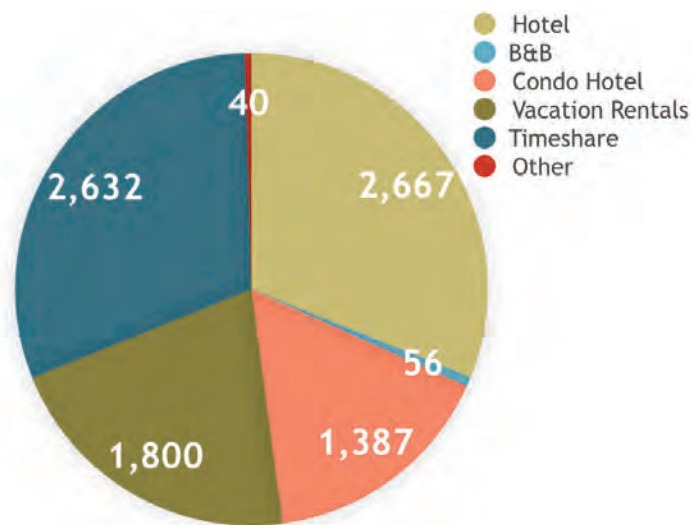
the 2000 Visitor Plant Inventory of 7,159. The majority of Kaua'i's visitor accommodation fall in the deluxe to luxury price range. Less than three percent of Kaua'i's accommodation are considered budget (campsites are not considered to be units).

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 (TVRs or TVUs) outside of designated Visitor Destination Areas (VDA). The ordinances established a non-conforming use grandfathering process for the operation of TVRs outside of the VDA. Under the current law, TVRs are not allowed outside of the VDA unless they have an active Non-Conforming Use Certificate.

Kaua'i's visitor inventory could expand by 3,000 units, considering the amount of "pipeline" projects that 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 Kaua'i's already burdened infrastructure.

Possibly compounding the potential problem are

Figure 3-10 2015 Visitor Plant Inventory (# of Units)



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.

There is a need to manage tourism growth and the associated impacts through legally available means, including regulating resort uses outside the

VDA and imposing entitlement deadlines on resort designations. The resulting policy is to limit expansion of VDAs beyond what is recognized as Resort in the Future Land Use Map. Figure 3-11 shows existing VDAs on Kaua'i. Resort designations are described in Chapter 2, and Land Use Maps in Chapter 5.

1.3 Improving the Visitor Experience and Impacts on Communities

Improving the visitor experience and reducing impacts will depend on adopting new ways of doing things. Taking shuttles to popular destinations instead of driving private cars is one example. Fortunately, Kaua'i has a high percentage of repeat visitors – as much as 70 percent, according to the KTSP. Learning about and accepting different ways of accessing Kaua'i'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 Kaua'i 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. The Kaua'i Tourism Strategic Plan seeks to reinforce authentic Native Hawaiian culture and local Kaua'i culture. These are the qualities that make Kaua'i 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 Kaua'i'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 Kaua'i'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 Kaua'i 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.

A. PERMITTING AND CODE CHANGES

1. Revitalize—rather than expand—the existing Visitor Destination Areas in Po'ipū, Līhu'e, Wailua, and Princeville.
2. Focus visitor uses, services, facilities, and accommodations in the Visitor Destination Area.
3. Do not expand existing Visitor Destination Area boundaries beyond resort-designated areas.
4. 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 2027, or within ten years of Community Plan approval if an area is conditionally designated.
5. Require short-duration expiration dates should development not be constructed as permitted.
6. Where appropriate, negotiate with entitled resort projects to reduce unit count if discretionary permits are sought again.
7. Create a regulatory system that ensures resort developers pay their own way by paying their fair share of system expansion for all public systems, including but not limited to land transportation improvements, housing, water, sewer, cables, and parks.

B. PLANS AND STUDIES

1. Implement and update the *Kaua'i Tourism Strategic Plan*.
2. Explore the development of the carrying capacity for various sites around the island and a monitoring system that tracks visitor impacts within the context of "limits of acceptable change" or other metric.
3. Create a comprehensive incentive and disincentive plan to address visitor numbers and impacts in specific areas.

C. PROJECTS AND PROGRAMS

1. Improve route and destination signage to alleviate congestion associated with difficulties in finding desired locations.
2. Improve waste disposal, collection, and management at popular destinations and provide more recycling options.

Figure 3-11 Kaua'i Visitor Destination Areas

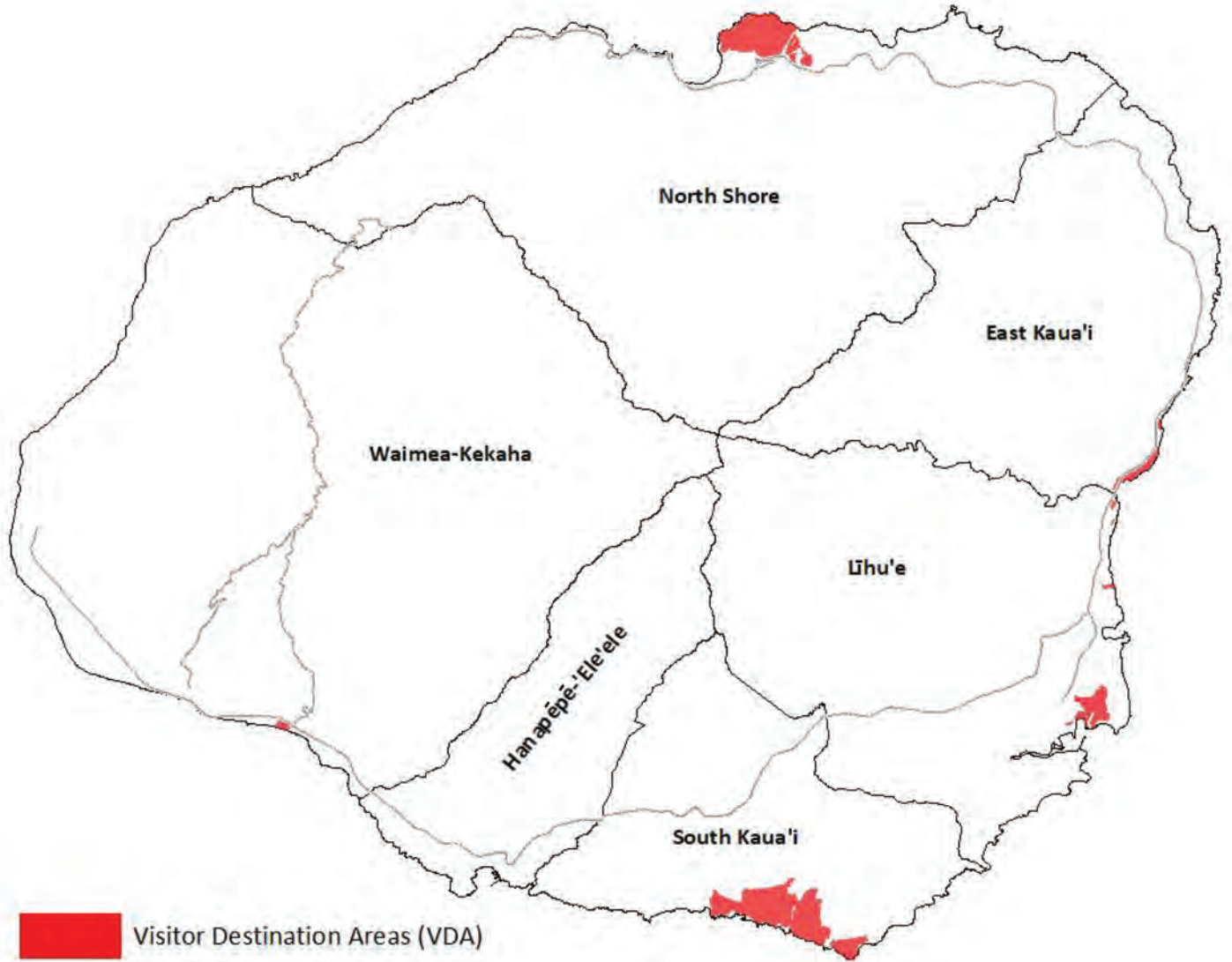


Figure 3-12 Waimea-Kekaha Visitor Destination Areas



Figure 3-13 South Kaua'i Visitor Destination Areas

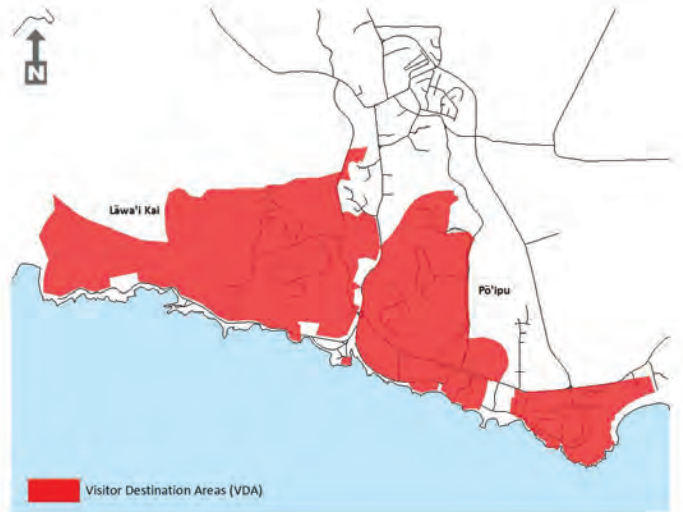


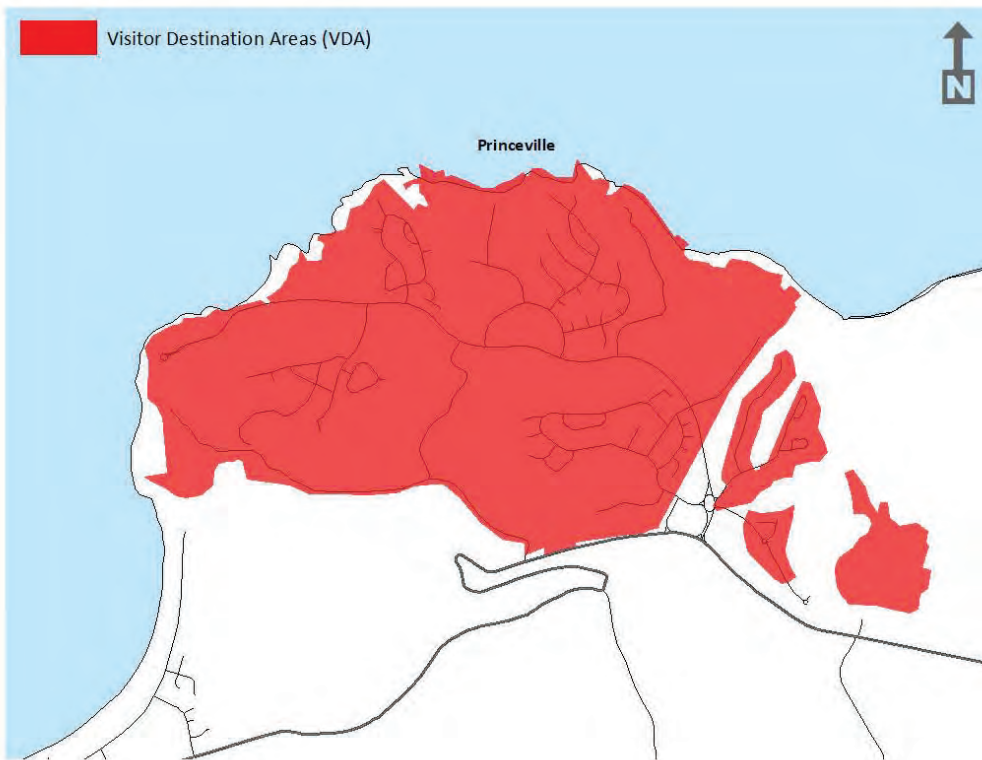
Figure 3-14 Līhu'e Visitor Destination Areas



Figure 3-15 East Kaua'i Visitor Destination Areas



Figure 3-16 North Shore Visitor Destination Areas



3. Support projects to encourage visitor transportation mode shift from single occupancy vehicles to other modes.

D. PARTNERSHIP NEEDS

1. Provide visitors with a unique, positive, culturally-rich, and safe experience on Kauaʻi. Encourage cultural sensitivity and cultural exchange.
2. Develop alternative transportation options for visitors, including shuttles and car sharing, to reduce visitor impact on our roads, highways, and scenic places.
3. Establish a County tax on rental cars to fund alternative transportation options for visitors.
4. Lift 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.
5. Develop and promote community programs that reinforce the unique sense of place of communities, such as those with historical and cultural significance.
6. Encourage more use of Native Hawaiian place names and increase understanding of the meanings.
7. Encourage tourism that provides eco-friendly and educational experiences, products, and services; leverages and supports local business and agriculture; relies less on cars; and embraces the rich historic and cultural foundation upon which Kauaʻi's communities were built.
8. Attract new employees, especially local residents, to the visitor industry to ensure an available, well-qualified workforce.
9. Train the visitor workforce in understanding Kauaʻi's local culture.
10. Encourage the visitor industry, airlines, and the growing cruise line industry, to buy and promote Kauaʻi products and support businesses on Kauaʻi.
11. Increase use of renewable fuel sources and support carbon offset programs and incentives for passengers traveling to and from Kauaʻi.

2. AGRICULTURE

Agriculture is an important element in Kauaʻi'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 strengthening 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.

Objective: To ensure the long-term viability and productivity of agricultural lands.



2.1 Perpetuating Kauaʻi's Long Tradition of Agriculture

Agriculture is the history and lifeline of the Hawaiian Islands. Mālama ʻāina, caring for the land, is ingrained in the fabric and language of the Native Hawaiian culture. Makaʻainānā means “the common people” and is translated as “those who watch that which feeds” (“that which feeds” being the land). To be occupied with the growing of food and materials for one’s ʻohana is to be occupied with ensuring the health of the land, water, and natural systems. In i ka wā kahiko (meaning “in old times/long ago/in the age of antiquity”), a variety of loʻi terraces, dry-land agriculture, fish ponds, and salt pans supported a large population. Some of Kauaʻi's modern agricultural infrastructure is inherited from the ancient Hawaiians, such as taro fields and ditch systems. Traditional agricultural products such as taro, coconut, and breadfruit are still in demand and are synonymous with both healthy living and regional identity.

In 1835, the Old Kōloa Sugar Mill became Hawaiʻi's first commercially-viable sugar mill. This heralded the era of plantation agriculture where sugar and pineapple cultivation dominated the landscape. Land

was managed and owned by large companies such as the Kōloa Sugar Company, McBryde Sugar Company, and Grove Farm. Supporting the sugar and pineapple industry was an extensive network of ditches, flumes, and reservoirs created and maintained by the landowners. The era of plantation agriculture has come to an end, but the remaining infrastructure and still-undeveloped swaths of agricultural land provide for today's agricultural activity and opportunities for new enterprise to thrive.

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 percent to \$30,511 average annual earnings per employee.⁴¹ 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.⁴² 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 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 3-17). Like the rest of the Hawaiian Islands, Kaua'i has shifted out of sugar cultivation within the last few decades, leaving

41 *Draft Kaua'i Comprehensive Economic Development Strategy Update, 2016*

42 *Statewide Agricultural Land Use Baseline Study, 2015*

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.

The seed production industry has a much larger presence on Kaua'i than on any other island, with nearly twice the amount of acreage as O'ahu. 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 Kaua'i, 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 Bill No. 2491 (Ordinance No. 960), 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.

2.2 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."⁴³ 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

43 *Important Agricultural Lands Study, 2015*



Produce at Kōloa Sunshine Market, South Kauaʻi District

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.⁴⁴ Some major landowners have voluntarily designated their lands, a total of 16,263 acres.⁴⁵

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 agricultural land and open space quality, while reducing costs of infrastructure and service provision.

44 *Important Agricultural Lands Study, 2015*

45 *Important Agricultural Lands Study, 2015*

2.3 Improving 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 Kauaʻi 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

development and commercialization of marine aquaculture. The State's Aquaculture and Livestock Support Services Branch provides support for this industry through business planning and development, as well through loans for start-ups.

2.6 Partnering to Support Existing and New Agricultural Enterprise

A productive agricultural system not only involves having lands available for farming, but creating and supporting the mechanisms necessary for growing and processing food and materials. This includes providing agricultural and business education, increasing marketing, understanding transport and export opportunities, and promoting best management practices that mitigate environmental and health impacts.

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 Kua'i, 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.

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.

A. PERMITTING AND CODE CHANGES

1. Ensure agriculture-designated lands are used for agriculture and related activities, including aquaculture, commercial forestry, and animal husbandry.
2. Use urban growth boundaries or other land preservation easements to limit conversion of agriculture-designated lands to non-agricultural uses.
3. Control the subdivision and alteration of agriculturally-zoned land to prevent the dissipation of agricultural potential, the loss of rural character, and the conversion of land use to urban land use designations.
4. Provide criteria to allow clustering of allowable density for landowners of Important Agricultural Land (IAL).
5. To the extent that public trust purposes would not be impacted or continue to be impacted, or where serviced agricultural operations constitute a reasonable and beneficial use that furthers the interests of the public, require preservation of viable irrigation systems – both government-owned and privately owned – to support the supply of irrigation water to farms, provided that mitigation measures are taken to minimize any impacts to public trust purposes.
6. Support landowner and farmer-initiated designations of important agricultural lands that at least meet criterion number five of Act 183 (SLH 2005), "land with sufficient quantities of water to support viable agricultural production."
7. 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.
8. Revise the agricultural property tax regime, including but not limited to the Agricultural Dedication program, to increase incentives to lease land for productive farms.
9. Clarify rules and authority related to permitting of agricultural structures and uses on IAL.

10. Include community gardens as a permitted use in residential areas.
11. 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 205-4.5.

B. PLANS AND STUDIES

1. Consider the relationship and proximity of other land uses to agricultural land in planning efforts. Define “rural” and include its relationship to agriculture.
2. Update and implement the *Agricultural Water Use and Development Plan*.
3. Improve upon or develop a system for local and export marketing of food and primary resources.
4. Create an agriculture database of key information and indicators that would enable the monitoring of agricultural progress and growth.
5. Increase access to healthy food in underserved neighborhoods and build more equitable food systems, from cultivation to disposal.
6. Update and implement the *Kaua’i Agriculture Strategic Plan*.

C. PROJECTS AND PROGRAMS

1. Provide economic development programs to promote and support agriculture.
2. Reestablish an Agricultural Specialist position with the Office of Economic Development.
3. Support the Sunshine Markets and other means of marketing Kaua’i agricultural and food products to residents, businesses, and visitors.
4. Establish a minimum goal for designation of IAL. Improve the IAL program to effectively preserve high-quality agricultural land. Develop related County-level incentives, specifically to encourage food production to increase self-reliance.
5. Increase incentives to lease land to small farmers through revisions to the agricultural property tax regime.
6. Improve water infrastructure for irrigation in priority areas, such as IAL.
7. Develop community food hubs, commercial kitchens, and other initiatives that provide places for community members to grow and prepare their own food.
8. Allow the use of SNAP benefits at farmers markets.
9. Reduce water rates for landowners of agricultural lands in active production.
10. Establish a County-wide composting program.



Hanalei taro fields, North Shore District

D. PARTNERSHIP NEEDS

1. Expand commercial agriculture, attract new agricultural support and value-added industries, and promote locally-grown commodity sales.
2. Increase small-scale diversified farming, including, but not limited to, fruits and vegetables, building materials, medicinal plants, aquaculture, apiaries, flowers, and livestock.
3. Expand aquaculture and livestock farming.
4. Improve water access and infrastructure for agricultural purposes.
5. Support regional agricultural parks and centers.
6. Support commercial agricultural producers with agricultural cooperative extension services, marketing, and business development. Market agriculture and food products within Kaua'i and to out-of-state markets.
7. Prepare youth for future careers in diversified agriculture and aquaculture, with additional emphasis on business skills.
8. Provide incentives and opportunities for agricultural housing, jobs, training, processing/transport of goods, and other needs. Expand direct financial and tax assistance to agricultural enterprises.
9. Review legislation impacting agriculture on Kaua'i. Coordinate position statements with the Kaua'i Community College, the Farm Bureau, and other agricultural interest groups.
10. Clarify the reclassification incentive provided through designation of Important Agricultural Lands (IAL).⁴⁶
11. Support education and cooperation relating to protection of native birds and protecting the right to farm.

3. SMALL BUSINESSES AND PROMISING ECONOMIC SECTORS

Kaua'i 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, we can encourage economic growth that is in keeping with the General Plan's vision, goals, and policies.

Objective: To promote opportunities for small business and emerging economic sectors to thrive.



3.1 Nurturing Entrepreneurs and Small Business

Kaua'i's entrepreneurial talent 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. 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.

Small businesses are the basis of Kaua'i's economy. Over half of Kaua'i's businesses have four or fewer employees, and 70 percent 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.

⁴⁶ HRS 205 Part III Important Agricultural Lands

3.2 Supporting Cottage Industries and Rural Economic Development

Kaua'i 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 Kaua'i by reducing traffic on the roads and creating more demand for local services and amenities.

From a permitting perspective, the County can examine its development standards 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.

In addition to development code changes, more industrial land is needed to accommodate manufacturing and industrial uses outside of residential areas. The deficit of industrial lands outside of Lihu'e causes many small businesses, such as welding shops, auto repair operations, and woodshops, to operate via a special use permit or illegally. One opportunity is to redevelop former plantation mill sites for manufacturing and industrial needs.

3.3 Fostering High Tech and Clean Tech Jobs

The Pacific Missile Range Facility (PMRF), located on the West Side, is one of the foremost aerospace test sites in the United States. PMRF leverages Kaua'i'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, PMRF has been the driving force behind the establishment of technology-based business on Kaua'i. PMRF's continued vitality contributes significantly to Kaua'i's high technology industry and provides opportunities for supportive businesses and entrepreneurs.

The momentum of KIUC in pursuing ambitious renewable energy targets, coupled with Kaua'i's goals for emissions reductions in transportation and energy, also provides opportunities for clean technology businesses and green jobs. Clean tech tends to be low- or non-polluting, provide higher wage jobs, and supports sustainability goals.

3.4 Growing the Arts, Culture, and Creative Industry

Kaua'i 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 Kapa'a. The *Kaua'i Arts & Culture Feasibility Study Final Report* (September 2015) found robust pockets of arts such as painting, woodworking, jewelry-making, and performing arts. Arts connected to Hawaiian, Japanese, and Filipino culture and traditions were also strong.

E kanu I ka hui 'oi hā'ule ka ua

Plant the taro stalks while there is rain. (Do your work when the opportunity affords.)

A. PERMITTING AND CODE CHANGES

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

B. PLANS AND STUDIES

1. Implement and update the Comprehensive Economic Development Strategy (CEDs).
2. Develop business improvement districts and Main Street programs to fund revitalization efforts.

C. PROJECTS AND PROGRAMS

1. Invest in shared facilities and resources that can be utilized by multiple opportunity clusters, such as creative industries and technical services.
2. Provide infrastructure that increases the competitiveness of businesses on Kaua'i and allows them to thrive in all parts of the island.
3. Utilize County facilities and funds to support shared workspaces, makerspaces, and equipment for small businesses to utilize.
4. Support programs and infrastructure that enables employees to telecommute or work in satellite locations.
5. Attract technology and energy businesses that complement Kaua'i's economic and sustainability goals.
6. Build capacity for economic development in the target industry clusters identified by CEDS.
8. Strengthen market linkages between the tourism industry and Kaua'i made products such as fashion, food, and music.
9. Expand opportunities for innovation and tech-based businesses.
10. Increase access to capital for small businesses and start-ups.
11. Educate businesses on financial planning and funding sources for hazard preparedness and recovery, including insurance options for business interruption, natural disasters, and other unexpected occurrences.

D. PARTNERSHIP NEEDS

1. Build the capacity of all businesses and increase the skills and readiness of Kaua'i's students and workforce.
2. Invest in opportunity industries that can diversify Kaua'i's economy and provide living wages.
3. Promote cross-sector linkages between Kaua'i's anchor and opportunity industries to grow the market for local products and services.
4. Support initiatives and programs to revitalize town centers and increase demand for local-serving businesses.
5. Provide business planning assistance, career planning, entrepreneurial training, incubation, and assistance with permitting, licensing, and regulatory issues.
6. Expand offerings for mentorship, networking, and affordable workspaces.
7. Support programs and initiatives that encourage manufacturing and support Kaua'i's small-scale independent manufacturers.



Ke Kahua O Kaneioloama in Po'ipū, South Kaua'i District

SECTOR: VII. HERITAGE RESOURCES

From ancient heiau to Buddhist missions, heritage resources symbolize Kaua'i's history, showcase our diversity, and perpetuate a unique sense of place. By protecting these resources, Kaua'i will continue to honor its history, value its Native Hawaiian heritage, and celebrate its diverse languages and cultural traditions.

Throughout Kaua'i there is an abundance of archaeological, cultural, historic, and scenic resources. Together these resources document Kaua'i's storied past, cultivate a unique sense of place, and educate new generations about their history. The Heritage Resources map highlights important historic sites, including those listed on the National Register and the Hawai'i Register of Historic Places. In addition, the map shows historic cultivation areas, priority public access points, and ahupua'a and moku boundaries. In recognition that environmentally significant places are

part of our heritage, the map also includes streams, waterbodies, coral reefs, and critical habitat.

As time goes on, our heritage resources will require more consistent and comprehensive attention to ensure their survival. Innovative ways to both protect and reuse historic resources should be utilized all while identifying new resources worthy of preservation.

This section addresses Historic Buildings and Structures and Places; Wahi Pana, Cultural Sites, and Cultural Resources; and Landmarks and Scenic Resources.

1. HISTORIC BUILDINGS, STRUCTURES, AND PLACES

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

Objective: To preserve and enhance historic buildings, structures, and places.



1.1 Recognizing and Designating Historic Buildings and Structures

Kauaʻi has approximately 60 buildings and complexes listed on the National Register of Historic Places and/or the Hawaiʻi Register of Historic Places. From the U.S. Post Office on Rice Street to Russian Fort in Waimea, these structures are visual reminders of Kauaʻi's past. Some roads and bridges, including pedestrian bridges and overpasses, also have unique features that are historically significant and contribute to a sense of place. Famous examples include the one-lane steel truss bridge at Hanalei River and Route 560 – a narrow ten mile road between Princeville and Hāʻena.

Designation requires review prior to demolition or renovation, and makes properties eligible for financial assistance such as grants and tax incentives. The lead agency for all aspects of historic preservation is DLNR's Historic Preservation Division (SHPD). SHPD maintains an inventory of known historic sites and conducts surveys to identify and document new sites. Significant sites are placed on the Hawaiʻi Register of Historic Places where they may then be nominated to the National Register of Historic Places.

On the local level, the Kauaʻi Historic Preservation Review Commission (KHPRC) works with landowners to recommend properties for designation. The Commission was established in 1987 to protect and

promote the County's historic resources, and maintain a County-wide inventory of historic resources. The Commission also administers the Local Certified Government program, which provides Federal assistance for historic preservation. Reviews of County permits and projects involving historic sites, structures, and districts are typically coordinated with KHPRC and SHPD.

1.2 Supporting Preservation through Standards and Incentives

In addition to the KHPRC, the County supports preservation through development standards, as well as partnerships and targeted financial assistance. Property tax assessments and the Open Space Fund are existing County mechanisms that can also incentivize preservation.

Compliance with modern building and zoning codes is often a challenge when renovating historic properties. Sensible alternatives to strict code requirements can make the difference between leaving a historic property to further deteriorate or be demolished, and allowing it to be restored and thrive with a new purpose. The historic nature of town cores can also be protected and promulgated through district-wide architectural and design standards. These ensure new development is in keeping with a town's historic character and that redevelopment occurs in a historically sensitive manner.

A. PERMITTING AND CODE CHANGES

1. Broaden the types of uses allowed in historic structures.
2. Support the reuse and renovation of historic structures through building code amendments.
3. Update and create Special Planning Areas in towns to ensure new development and redevelopment of existing sites or structures is done in a "historically sensitive" manner.

B. PLANS AND STUDIES

1. Update and maintain the inventory and management plan for historic resources.

C. PROJECTS AND PROGRAMS

1. Maintain the character of historic structures and bridges by implementing best management practices that adhere to the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* when rehabilitating and/or renovating historically significant buildings and structures.
2. Educate and encourage property owners to nominate structures and sites to the State and National Register of Historic Places.
3. Provide a real property tax exemption for historic properties, including commercial properties.
4. Explore utilizing the Open Space Fund for historic preservation purposes.

D. PARTNERSHIP NEEDS

1. Support partnerships between the County of Kaua'i, KHPRC, the public, and various historical and archaeological organizations to preserve important historic buildings and structures that illuminate Kaua'i's history.
2. Establish a low-interest revolving loan fund for rehabilitation of historic properties.
3. Develop a County of Kaua'i standard operating procedure (SOP) for engaging with SHPD and the "Section 106" and/or "HRS 6E" processes. Implement the SOP to improve interagency coordination and communication between SHPD and the applicable County, State, and Federal agencies.

2. WAHI PANANA, CULTURAL SITES, AND RESOURCES

Wahi Pana and the resources that support cultural practices are the foundation of Kaua'i's identity. Culturally significant places and sites, once destroyed, cannot be replaced. These places and the stories behind them provide vital insight to how the ancient Hawaiians lived in harmony with the land and managed the use of natural resources in a sustainable manner.

Objective: To recognize and protect the resources and places important to Kaua'i's history and people.



2.1 Identifying and Preserving Wahi Pana and Archeological Resources

Throughout Kaua'i there are numerous archaeological sites that document ancient Hawaiian habitation and culture. A traditional cultural property is defined as an area or place associated with the practices and beliefs of a living community. On Kaua'i these include heiau, burial sites, fishponds, taro fields, and places where multiple archaeological and historic features are located. Kaua'i has 30 archaeological sites listed on the National Register of Historic Places or the Hawai'i Register of Historic Places. Large scale archeological



Pū'olo Point Salt Pans, Hanapēpē-'Ele'ele District (Photo courtesy of Malia Nobrega-Olivera)

districts, such as the Nā Pali Coast, are listed in their entirety. All registered archaeological sites are included in the Heritage Resources Map in Chapter 5.

Kaua'i has several areas eligible to be listed as Historic Districts through the National Register of Historic Places, including the Wailuanuiahoano ahupua'a and portions of the southern Olohena and Hanamā'ulu ahupua'as. Continued research and inquiry is needed to establish if other historic assets might merit designation. In addition to formally listed sites, there are hundreds of other sites that have not been documented or inventoried by SHPD. Discoveries of new cultural sites are generally triggered through the archaeological site surveys required for certain development activities.

Burial sites are also important resources. In Native Hawaiian culture, burial sites are sacred since within the iwi (skeletal remains) resides a person's mana. Therefore, the proper treatment of Native Hawaiian skeletal remains and burial goods must be ensured. SHPD has jurisdiction over the management of burial sites over 50 years old, whether they are previously identified or inadvertently discovered. When new development uncovers burials, recommendations to relocate or preserve in place any iwi are made by the Kaua'i Island Burial Council, with preference given to the wishes of the lineal descendants of the remains.

2.2 Perpetuating Cultural Practices through Restoration, Stewardship, and Education

There is a strong and growing commitment to perpetuating and spreading awareness of Native Hawaiian culture, stories, and practices. Attention and stewardship is needed to educate the community, restore structures, and preserve the legacy of wahi pana. Unfortunately, the significance of certain cultural sites is not always widely known. As a result, some sites sit unrestored and vulnerable to further damage through neglect, vandalism, and land-altering activities such as unpermitted grading. One model that could be replicated is that of Kāneiolouma – an ancient cultural complex which was restored through a stewardship agreement with the County and a community organization.

Other cultural sites still function as they did in historic times such as the salt making pans at Pū'olo Point. Important lo'i kalo, dry land field systems, and fishponds are examples of Hawaiian engineering tailored to particular ecological conditions. Protecting and restoring them is vital to the restoration of culture, Hawaiian way of life, flourishing ecosystems, and local food production.

For example, the community-stewarded lo'i of Waipā and Kē'ē connect residents to the places where many no longer can afford to reside. Other culturally significant sites, such as known burial locations, are stewarded by Native Hawaiian families without a formal agreement.

Residents also celebrate the ethnic diversity and cultural practices associated with Kaua'i's modern history. Kaua'i's plantation era and the legacy of migrant workers is recognized through events such as the Kōloa Plantation Days Celebration.

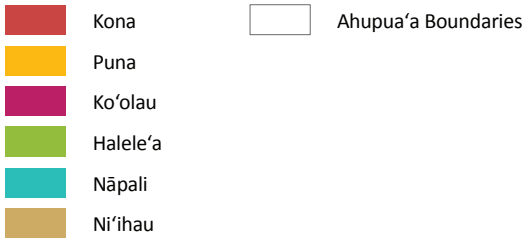
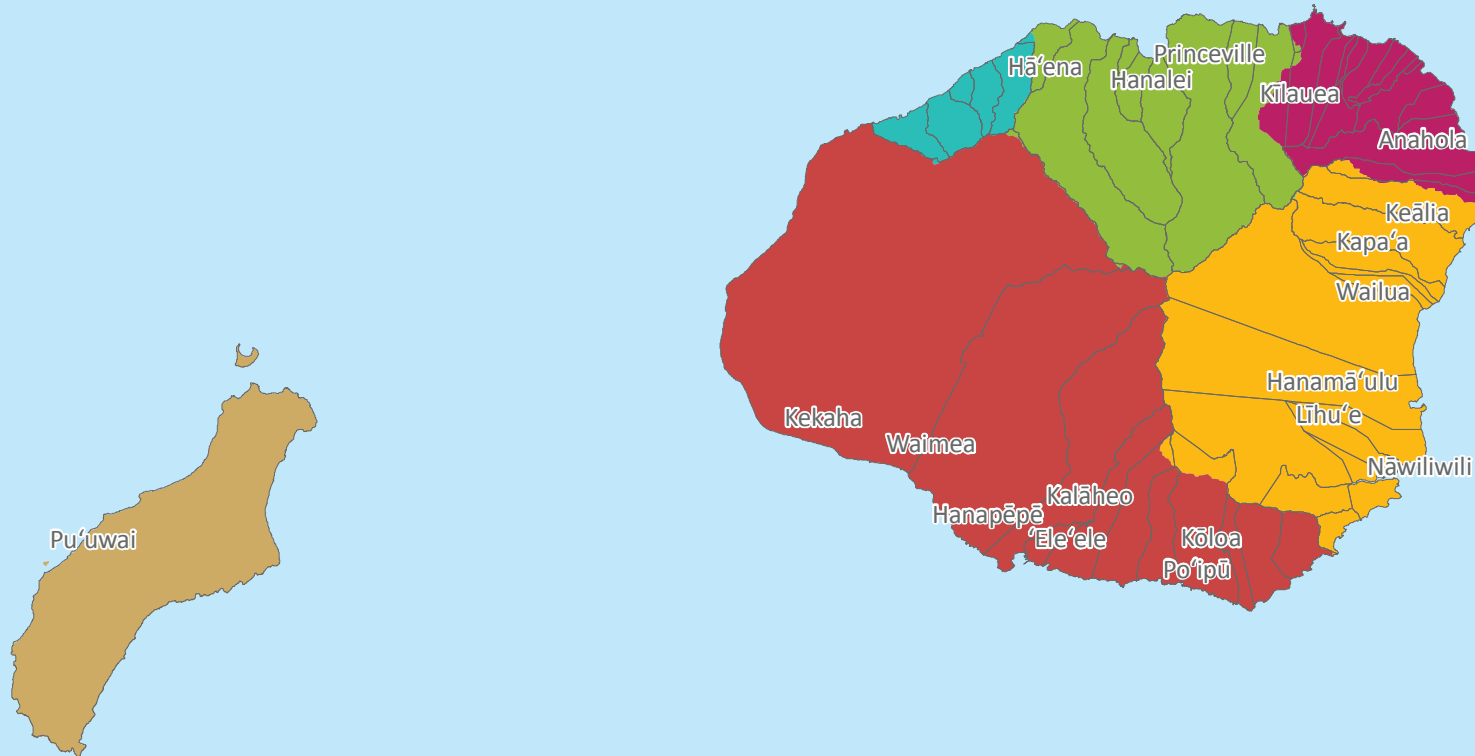
2.3 Raising Awareness of Place Names and Land Divisions

The ability of people to recognize the significance of wahi pana helps instill a sense of pride and curiosity about Native Hawaiian culture and history. Awareness of the original names and the stories behind them connect people to the island's history and culture. The Kaua'i Nui Kuapapa program is a joint effort between the County and community to raise public awareness of significant place names and historic land divisions. The names, history, and unique features of Kaua'i's six moku and 54 ahupua'a are conveyed through signage and online information. The boundaries are shown in Figure 3-18.

2.4 Protecting Kuleana Lands

Prior to 1850, kuleana were "plots of land given, by the governing ali'i of an area, to an 'ohana or an individual as their responsibility without right of ownership."⁴⁷ When land was privatized in 1850, less than one percent of all lands in Hawai'i were awarded to Hawaiian maka'āinana families who lived on and tended the land. Extensive information was recorded about these parcels including family and place names, and information on surroundings, hydrology, and cultivation. These lands are house sites, taro patches, and some fishponds or salt pans, and often contain 'iwi. Lands where Hawaiian families continue to care for and live on lands in the same areas as their ancestors are increasingly rare. Tax and land use regimes impeding families from keeping their ancestral lands should be revisited and revised accordingly.

47 Pūku'i & Elbert 1975



A. PERMITTING AND CODE CHANGES

1. Preserve, restore, and maintain customary access to important archaeological and cultural sites.
2. Create natural, landscaped buffers between archaeological sites and adjacent uses.
3. In the case of development where burials are known to exist, ensure an Archaeological Inventory Study (AIS) is prepared and Kaua'i Island Burial Council recommendations are adhered to before final approvals are given.
4. Require developers to provide archaeological and cultural assessments prior to clearing or development of land in areas of historical significance.
5. Promote, encourage, and require the correct use of traditional place names.
6. Establish archaeological districts where high concentrations of sites exist.
7. Encourage restoration, management, and practitioner access for significant cultural sites on private land, as allowed by law.
8. Encourage the restoration, management, and use of Kaua'i's fishponds and lo'i kalo.
9. Preserve Māhā'ulepū, a wahi pana, where scenic landmarks, natural resources, archaeological sites (including Waiopili Heiau), and burials

are found along with subsistence fishing and gathering, agriculture, research and education, and recreation.

10. Movement of kuleana lands through the subdivision process is inconsistent with their intrinsic cultural and historic value and negatively impacts traditional and customary Native Hawaiian rights and practices, which are protected by the Hawai'i State Constitution. Prior to any decision, any movement requires proper due diligence to ensure any historic value relating to the kuleana's past land use is identified and protected to the fullest extent possible consistent with Article XII, Section 7 of the Hawai'i State Constitution, the Ka Pa'akai test, and HRS Chapter 6E. In addition, proper notice must be afforded to the State Office of Hawaiian Affairs and beneficiaries and heirs of the kuleana at issue before any movement is approved.

B. PLANS AND STUDIES

1. Inventory and acknowledge the importance of archaeological sites and wahi pana during community planning processes.
2. Create an inventory of kuleana lands and describe their vulnerability to sale and development.
3. Create a county-level tax break for ancestral family lands that do not qualify for kuleana tax breaks



Historic Hanapēpē Swinging Bridge, Hanapēpē-'Ele'ele District

for situations such as hanai (adoption), families without birth and death certificates, and other circumstances.

C. PROJECTS AND PROGRAMS

1. Promote the diversity of stories and sites on Kauaʻi, including those related to Native Hawaiian history and mythology, migrant worker history, and modern history.
2. Establish historical trails, markers, and events that draw attention to the history of Kauaʻi.
3. Through stewardship agreements, ensure proper management and interpretation of significant cultural resources and sites.
4. Achieve permanent preservation of highly significant cultural landscapes where multiple heritage and ecological values are located.

D. PARTNERSHIP NEEDS

1. Work with the State Historic Preservation Division and KHPRC to educate landowners about the historic preservation review process.
 2. Promote County and community partnerships to preserve and raise awareness about traditional cultural places.
 3. Increase community awareness and stewardship of Kauaʻi's historic and cultural resources.
4. Enhance the Hawaiian sense of place by promoting understanding of moku and ahupuaʻa land divisions. Recognize and preserve the unique natural and cultural characteristics of each moku and ahupuaʻa.
 5. Seek to create community managed subsistence areas, also known as kīpuka, in every ahupuaʻa, in the tradition of kīpuka at Kēʻē and Waipā.
 6. Commence a collaborative planning effort to explore options that would make it possible to preserve the irreplaceable natural and cultural resources of Māhāʻulepū and to sustain the special experiences of this place.
 7. During the “Section 106” and “HRS 6E” review processes, utilize cultural practitioners and community authorities on historic preservation to serve an advisory function and provide guidance on heritage and cultural issues.
 8. Implement tax breaks and support programs to prevent foreclosures on kuleana lands caused by failure to pay taxes.



Scenic view in Anahola, East Kauaʻi District

3. LANDMARKS AND SCENIC RESOURCES

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

Objective: To preserve important landmarks and protect scenic resources.

3.1 Preserving Scenic Views and Landforms

Landforms and ocean views define our sense of space, particularly for the communities near them. For example, Nihokū (Crater Hill) is an important coastal landform near Kīlauea Town, while Hāʻupu Ridge frames the Līhuʻe District and divides it from the South Kauaʻi District. Landforms such as Kālepa Ridge and Kilohana Crater have similar framing qualities and help define and characterize nearby communities as distinct settlement areas.

Many landforms serve as landmarks and are prominent in Native Hawaiian history and ʻōlelo. Awareness of them is fundamental to understanding and appreciating Kauaʻi’s history. Preserving mountain and ocean 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, scenic resources, and heritage places is perhaps the most important aspect of maintaining the historic essence of Kauaʻi 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, scenic resources, and heritage places must rely first and foremost on zoning and permitting regulations.

3.2 Maintaining the Integrity of Scenic Routes

Scenic views along roadways are abundant on Kauaʻi. Kauaʻi already has one Federally recognized scenic byway, which runs through Kōloa in South Kauaʻi. Scenic byways do not just have scenic qualities, but are also recognized for their intrinsic archeological, cultural, historic, natural, and recreational features. Community Plans for each District provide an opportunity to identify specific roadways and features worthy of recognition and protection.

3.3 Protecting Exceptional Trees

Exceptional trees and groves of trees are another resource important to preserving Kauaʻi’s rural character, intrinsic beauty, history, and culture. The County’s Arborist Committee has designated 23 trees as “exceptional trees” on Kauaʻi. The State’s Exceptional Tree Act (Act 105) protects designated trees from improper trimming and unnecessary removal. Private property owners are provided a tax credit to offset the costs associated with tree maintenance.

A. PERMITTING AND CODE CHANGES

1. 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, view planes, and landmarks in the siting of new development.
2. 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.

B. PLANS AND STUDIES

1. Identify key landmarks, exceptional trees, and scenic resources through Community Plans.
2. Develop an inventory of scenic resources/views, view planes, visual resources, and key landmarks through joint collaboration of the Kauaʻi Historic Preservation Review Commission and the Open Space Commission.

3. Support creation and implementation of corridor plans for historic and scenic roadways.

C. PROJECTS AND PROGRAMS

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

D. PARTNERSHIP NEEDS

1. Support the Hawai'i Scenic Byways Program.
2. Support the Kaua'i Open Space Commission in identifying and acquiring priority open space areas.



Solar farm at Port Allen, Hanapēpē-'Ele'ele District

SECTOR: VIII. ENERGY SUSTAINABILITY & CLIMATE CHANGE MITIGATION

Energy is a critical part of progressing the 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 remain vulnerable to global fluctuations in price and supply. Kaua'i must continue to set an example of energy sustainability and global citizenship through emissions reduction and renewable energy targets.

Progressing Toward Energy Independence and a Carbon-Neutral Future

Kaua'i has become a leader in energy conservation and renewable energy projects. In 2016, our ratepayer-owned electric utility, the Kaua'i Island Utility Cooperative (KIUC), generated approximately 40 percent of its energy from renewable sources. KIUC aims to increase this percentage to 70 percent by 2030 through a mix of new biomass, solar, and hydroelectric projects. In 2017, Tesla partnered with KIUC to construct a solar farm on Kaua'i; outfitted with

Tesla Powerpacks, this facility will reduce fossil fuel consumption by approximately 1.6 million gallons per year. This will bring Kaua'i closer to the ambitious target of 100 percent local energy sustainability set by both the State and the Kaua'i Energy Sustainability Plan (2010). The General Plan also sets a target for reduction of all greenhouse gas emissions so Kaua'i can do its part to mitigate climate change.

The objectives and actions for Energy Sustainability 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. Climate change mitigation efforts to increase energy conservation and reduce greenhouse gas emissions are also supported.

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 percent more efficient with implementation of supportive codes and standards between now and 2050.⁴⁸ This applies to existing and new buildings. The County can lead by example by investing in Leadership in Energy and Environmental Design (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. 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 percent 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.

1. ENERGY SUSTAINABILITY

Objective: To increase energy sustainability and maintain a reliable, resilient, and cost-efficient energy system.



1.1 Conserving Energy and Becoming Sustainable

Kaua'i's energy profile has evolved significantly in recent years. A combination of solar, hydro, and biomass generation projects accounted for only 13 percent of KIUC's energy sales in 2014, but rose to over 36 percent in 2015. Renewable resources can meet an average of 77 percent of Kaua'i's energy demand during peak solar hours, spiking to as much as 90 percent.⁴⁹

KIUC has adopted an ambitious goal for renewable resources to generate at least 70 percent of Kaua'i's energy by 2030, surpassing the State's goal of 40 percent.⁵⁰ Future progress on renewables will allow Kaua'i to become more energy self-reliant in a manner that is more environmentally sound and economically sustainable than reliance upon fossil fuels.

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 Kaua'i.

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

While much of renewable energy production depends on KIUC and private sector initiatives, the County can assist with the transition to renewable energy through

48 Roadmap to Zero Emissions, Architecture 2030

49 Kaua'i Utility Reaches 90% Renewable Energy Utilization, 2016
50 KIUC Strategic Plan 2017

various means including land use planning, economic development, transportation planning, and County government operations.

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 Kaua’i residents reduce their electricity consumption by an average of ten percent from 2007 levels. Kaua’i’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 online 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.

1.2 Green Buildings and Structures

The energy efficiency of buildings has a great impact on total emissions. Green buildings are sited, designed, constructed, and operated to be environmentally responsible and resource efficient. The U.S. Green Building Council estimates that green buildings reduce per person emissions by over 50 percent, especially if that building is located in a walkable environment. The most widely used benchmark for sustainable buildings is the LEED rating system. Currently, LEED certification is voluntary and often encouraged for major projects through conditions imposed by the Planning Commission. There is an opportunity to encourage increasing the number of LEED buildings through requirements and/or incentives.

A. PERMITTING AND CODE CHANGES

1. Promote increased energy conservation and renewable energy production.
2. Optimize the mix of energy crops that can provide fuel for power production on Kaua’i.
3. Streamline and expedite planning and permitting processes involving renewable energy facilities.
4. Require new buildings to incorporate economically feasible design and equipment for energy sustainability, including but not limited to: solar hot water capacity and proper insulation.

5. Conduct an audit of the County’s development standards to identify regulations that are obstacles to, or could be altered to better encourage or require, green building practices.

B. PLANS AND STUDIES

1. Work with the University of Hawai’i to conduct an islandwide study of energy crop production, and determine how much energy production comes from locally grown crops.

C. PROJECTS AND PROGRAMS

1. Install more solar energy systems on County facilities.
2. Pursue green energy conservation, including but not limited to: groundskeeping and farming equipment/machinery, and ground transportation, by:
 - a. Installing more, and regularly maintaining and repairing, electric vehicle charging stations.
 - b. Introducing residential and commercial incentives to transition to electric groundskeeping and farming equipment/machinery.
 - c. County transition from fuel-powered to electric vehicles, machinery, and equipment, where feasible.
3. Conduct regular reviews of County operations to identify ways to conserve energy, particularly during nighttime hours.

D. PARTNERSHIP NEEDS

1. Support the Kaua’i Island Utility Cooperative (KIUC) and private initiatives for solar, biomass, hydro, and other clean energy production types.
2. Identify sites where new renewable energy facilities might be co-located with other land uses.
3. Continue regular monitoring of the amount of Kaua’i’s energy production that is from fuel produced on the island.
4. Support State and Federal efforts to price carbon, such as a carbon tax or fee and dividend programs.

2. REDUCTION OF GREENHOUSE GAS EMISSIONS

As a leader in renewable energy, Kaua'i is transitioning 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.

Objective: To expand strategies and mechanisms to reduce greenhouse gas emissions on Kaua'i.



2.1 Acknowledging the Paramount Challenge of Climate Change

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 more than four 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 prevent average temperatures from increasing more than two 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 Kaua'i'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.

2.2 Setting an Example and Goal for Emissions Reductions

Policy makers at local and State levels have identified the need to reduce our dependence on fossil fuels for numerous reasons. In 1998, the State of Hawai'i completed a climate change action plan, which states: "*Hawai'i 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 Hawai'i 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*.

In 2015, 195 countries signed on to the Paris Climate Agreement, which set a goal of limiting global temperature rise to within two degrees Celsius. To achieve this, the Agreement calls for rapid emissions reductions and full decarbonization by the second half of the century. Though the United States has signaled that they will pull out of the agreement, Hawai'i is a member of the United States Climate Alliance which is a coalition of states committed to upholding the Paris Climate Agreement by "achieving the U.S. goal of reducing emissions 26-28 percent from 2005 levels" by 2025. In support of achieving these goals, SB 559 was signed into law in 2017 which "requires the State to expand strategies and mechanisms to reduce greenhouse gas emissions statewide in alignment with the principles and goals adopted in the Paris Agreement."

As discussed in previous sections, Kaua'i is already making progress in the renewable energy sector. In the ground transportation sector, Kaua'i 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 U.S. residents,

people on Kaua’i 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 Kaua’i Kākou.

In alignment with SB 559 and Hawai’i’s pledge to the United States Climate Alliance, the General Plan’s policy is to reduce islandwide greenhouse gas emissions by at least 26-28 percent from 2005 levels by 2025, and 80 percent by 2050. Because those targets are lower than those deemed necessary by the Intergovernmental Panel on Climate Change and the Paris Climate Agreement to keep temperature change below 2 degrees Celsius, the County should aim for the higher benchmark of 40 percent reductions by 2030. Statewide emissions for the year 2007 are shown in Figure 3-19.

Achieving an 80 percent 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, we will do our part to prevent global average temperatures from increasing.

2.3 Addressing Air Travel and Transportation

While we have progressed with renewable energy production for electricity, we must address and find ways to reduce or offset the fossil fuel consumption of the transportation sector. Due to the rapid adoption of renewable energy by KIUC, 2015 marked the first year on Kaua’i where greenhouse gas emissions from ground transportation were higher than from electricity production. In order to support the General Plan’s greenhouse gas reduction policy, Kaua’i must reduce ground transportation emissions by 100% by 2045, with county vehicles reaching that goal by 2035. Using 2045 as a goal aligns the transportation sector with the electricity sector, which is currently mandated by HRS Section 269-92 to reach 100% renewable energy by 2045. Technological breakthroughs in electric vehicles and alternative fuels support emissions reductions, but until those technologies take hold and become affordable, reductions to

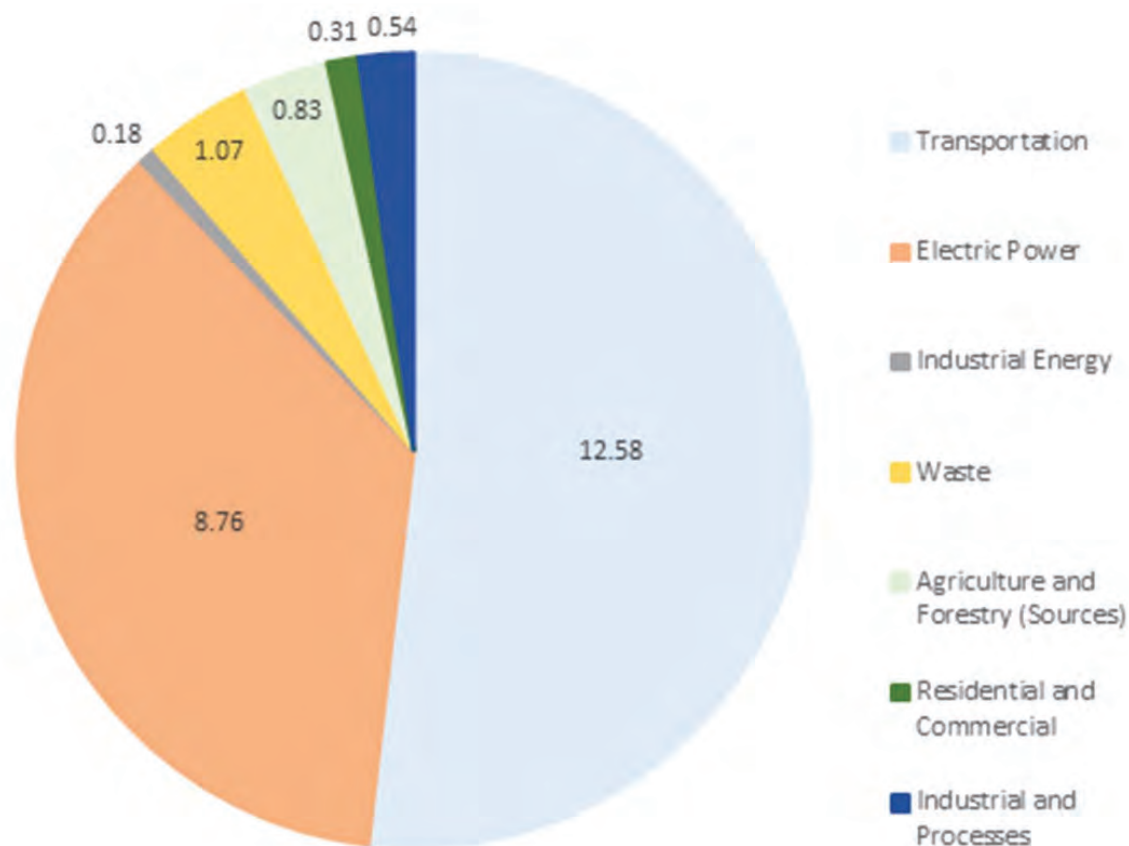


Figure 3-19 Composition of Hawai’i GHG Emissions

(Excluding Sinks, Including Aviation), 2007 (MMTCO₂Eq)

fossil fuel consumption for transportation will largely depend on individuals changing personal travel patterns and behaviors. The airlines and visitor industry can also promote alternative fuels and carbon offset programs. Emissions from air travel to support both resident and visitor 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.

2.4 Inventorying Greenhouse Gases

According to the *State of Hawai'i Greenhouse Gas Inventory* of 1990 and 2007, Kaua'i 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 Department of Health is completing its third sector-based statewide greenhouse gas inventory. Future efforts should include building an inventory tool that automatically updates from various data sources, 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 Kaua'i 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 produced 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.

2.5 Planning for Climate Action

A community-led climate action planning process is needed to maintain progress toward the long-term emissions reduction goal. Such a process will need to be maintained with an ongoing commitment both by the County and by community partners. Focus on key sectors and their interrelationships will be necessary to continue progress in emissions reductions. Key sectors include infrastructure, ground transportation, tourism, consumption and materials management, food and agriculture, and natural resource 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 Kaua'i's greenhouse gas emissions are the result of individual choices over the short and long term by Kaua'i 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.

2.6 Transformation as Opportunity

Kaua'i's extensive fossil fuel dependence means that there is a large task ahead to transform, and ultimately decarbonize, Kaua'i'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 analyze our island energy facilities and infrastructure to identify practices and system upgrades that work toward reducing fossil fuel consumption. 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 traveled 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.

A. PERMITTING AND CODE CHANGES

1. 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.
2. Reduce the carbon footprint of both new and existing buildings and infrastructure by maximizing energy efficiency and minimizing the use of fossil fuel resources on the grid.
3. 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, and support electric groundskeeping and farming equipment/machinery.
4. 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.
5. Support continued reductions in emissions from local energy production.

B. PLANS AND STUDIES

1. Develop a climate plan that focuses on key sectors and their interrelationships with respect to emissions reductions, to be updated every

five years. Include intermediate year emissions reductions for all major sectors.

2. 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.
3. Conduct a greenhouse gas emissions inventory for the County.

C. PROJECTS AND PROGRAMS

1. Establish capture and containment of methane at all landfills and County waste facilities.
2. Adopt a county-wide zero-waste strategy, including but not limited to: recycling pick-up at households and public locations and events, and building and maintaining a materials recovery facility with staff assigned to locate markets for recycled material.
3. Support the expansion of electric vehicle charging station infrastructure at County facilities.

D. PARTNERSHIP NEEDS

1. Share best practices regarding climate planning, including support for system-wide carbon fees or taxes at the state or national level.
2. Meet emissions reductions goals through partnerships within the electricity, transportation, tourism, agriculture, waste, and small business sectors. Collaborate to establish short term, intermediate, and long term (2050) emissions reduction targets in ground transportation, electricity, air transportation/tourism, and consumption and materials management.
3. Increase the availability of information about buildings that are energy-efficient (e.g., with solar hot water, green building designs and materials, and KIUC’s household energy audit) around the island for both the residential and commercial sectors.
4. Support the expansion of electric vehicle charging station infrastructure at strategically accessible locations along the main highway and other major thoroughfares.



Hazard zone signage

SECTOR: 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 Kaua'i. The better prepared each of us are to do our part, the safer and more resilient we will be as a whole.

Planning for Hazards and Resilience

As an island susceptible to a host of natural hazards, Kaua'i is committed to becoming a disaster-resilient community. In June of 2015, Mayor Bernard Carvalho signed an executive order "To Sustain Kaua'i as a Disaster Resilient Community." The General Plan broadens "resilience" to include economic resilience, community health, and the many other factors that influence how well a community can withstand and recover from disasters. This sector focuses on public safety and hazards resiliency. Maps showing hazard areas around the island and critical public facilities are included in Chapter 5.

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.

1. 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.

Objective: To ensure adequate coverage of public safety and emergency services as Kauaʻi grows.



1.1 Ensuring the Safety of the Resident and Visitor Population

Kauaʻi’s police, fire, and emergency services departments provide a wide range of security and emergency response duties for residents and visitors.

Kauaʻi’s three police stations are located in Hanalei, Waimea, and Lihu’e, with a force of 161 police positions. Kauaʻi had a ratio of 1.79 officers for every 1,000 persons in 2015 (including residents and visitors), but the size of the police force has not expanded in over 25 years. In order to achieve the national average for police presence, Kauaʻi would need to add 109 officers by 2035 to service the projected residential and visitor population.⁵¹

Kauaʻi’s Fire Department responds to multiple types of hazards, including structural and outdoor fires,

ocean and backcountry 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. Kauaʻi 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. This level of expansion would require adding two or three new fire stations, most likely in Kīlauea, Kōloa, and Līhuʻe. A related infrastructure issue is that certain bridges are undersized to handle larger emergency response vehicles.

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. The needed skills sets and testing equipment to address these responsibilities have required significant additional training.

1.2 Promoting Ocean Safety

As a community with substantial marine recreational activity, the Fire Department’s role in ocean safety is extremely important for residents and visitors. Kauaʻi’s shorelines are popular and attractive for swimming, surfing, and other water sports. They are also notoriously dangerous, particularly for weaker and inexperienced swimmers. The Fire Department is responsible for the Ocean Safety Bureau, which includes ten lifeguard towers, three jet-ski operations around the island, and 45 Water Safety Officers. Education and community awareness programs also support improved water safety.

A. PERMITTING AND CODE CHANGES

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

51 Adequacy of Future Infrastructure Analysis, 2016

B. PROJECTS AND PROGRAMS

1. Upgrade bridges in key areas to ensure emergency vehicles can service all residents and visitors.
2. Construct new fire stations to accommodate anticipated growth in the firefighting force.
3. Strive to attain a police force, firefighting force, and water safety officer force whose coverage meets or exceeds national standards.
4. Support continuous training for all emergency response officers.
5. Encrypt County radio communications systems.

C. PARTNERSHIP NEEDS

1. Support the State and County's coordinated response system to wildfires.
2. Implement and update the *Kaua'i Community Wildfire Protection Plan*.
3. Strengthen hazard monitoring systems, such as stream flow and river gauges.
4. Participate in quarterly disaster response training and exercises.



Beach Rules Sign, East Kaua'i. Photo by Travis Okimoto

2. HAZARDS RESILIENCY

There is probably no greater challenge to a community's resilience than a natural disaster, like Hurricane 'Iniki which struck Kaua'i in 1992. Hurricane 'Iniki affected all community members, regardless of their age or economic status. Strengthening resilience to these types of events will require the community and County government to function as one 'ohana. Hazards resiliency is built on coordination amongst the community, all levels of government, and the private sector to mitigate against, prepare for, respond to, and recover from natural disasters, acts of terrorism, and other threats and hazards.

Objective: To ensure that Kaua'i is resilient to natural disasters and other emergencies.



2.1 Responding to Natural Disasters and Emergencies

Kaua'i's most common natural hazards include flooding, wildfires, storm surges, tsunamis, and hurricanes. The Hazard Map identifies vulnerable areas including extreme tsunami and tsunami evacuation zones, wildfire risk areas, and flood zones. Dams, critical facilities, and emergency shelters are also shown.

The Kaua'i Emergency Management Agency (KEMA), Police Department, Fire Department, State DLNR, and Army National Guard have extensive responsibilities in the event of natural disasters. It is important that first responders have effective communications systems, high levels of training, and emergency supplies that are well protected.

KEMA coordinates the County response to all hazardous weather events and operates a network of evacuation shelters in partnership with the Department of Education and the American Red Cross. KEMA works with Federal agencies such as

the National Weather Service and the Pacific Tsunami Warning Center to ensure Kaua'i residents and visitors receive life-saving information on potential hazards in a timely manner.

In the event of a major disaster, KEMA directs Federal disaster relief efforts, as well as recovery dollars, to ensure disaster relief funds reach communities in need and restore essential services as quickly as possible. Currently, KEMA is staffed with only six employees. To keep pace with the projected growth of the resident and visitor population, KEMA will need to increase the number of permanent positions in the organization, and the equipment and software packages it uses to fulfill its coordination functions will require improvement, expansion, and modernization.

2.2 Creating Resilient Communities and Prepared Citizens

Kaua'i understands the importance of planning and preparation at the individual and neighborhood levels. Depending on the scale and duration of the event, it could be days or weeks before recovery efforts begin in isolated neighborhoods. Consequently, some communities have developed their own plans and procedures for emergency response. The *Hanalei to Hā'ena Community Disaster Resilience Plan* (2014) provides a model that other communities can follow. The County provides information, programs, and resources to support community based preparedness efforts, such as Community Emergency Response Team (CERT) training to individuals and groups. The ultimate goal is to have CERT teams in every neighborhood.

The *Kaua'i Climate Change and Coastal Hazards Assessment* (2014) 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.

Kaua'i's Multi-Hazard Mitigation and Resilience Plan (MMRP) (2015) includes a definition of resilience that encompasses the need to strengthen and support community, economy, and environment alike:

"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 prevent 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 documents are incorporated into subsection actions.

2.3 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. 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 before they arrive on island at the time of booking. 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.

2.4 Homeland Security, Threats, and Health-Related Hazards

In addition to managing Kaua'i's susceptibility to natural hazards, KEMA and emergency response professionals (i.e., Police and Fire Departments) must also be prepared to mitigate and respond to potential threats that stem from society itself. Such security threats and health-related hazards include but are not limited to: acts of terrorism, acts of war, biological warfare/terrorism, nuclear attacks/threats, hazardous materials, and disease outbreaks and epidemics.

As with natural hazards, communities and school campuses must be educated on the best practices and techniques for preparing for and responding to these unique types of threats and hazards. This includes the universal understanding for all residents of what to do when prompted by the outdoor siren warning systems.

The Kaua'i Police Department is the lead agency responsible for Active Shooter Training for the County. Additionally, KEMA will occasionally coordinate Department of Homeland Security trainings on this issue. The Hawai'i Emergency Management Agency is the lead in public education and outreach for Nuclear/

Ballistic Missile Preparedness and Awareness; KEMA is the County lead, with support of on-island trained personnel from KPD, KFD, and the Department of Health, Kaua'i District Office. The State Department of Health, Kaua'i District Health Office is the on-island lead for all Public Health and Epidemiological emergencies; KEMA will assist with coordination amongst partners and relaying information to the public.

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

A. PERMITTING AND CODES CHANGES

1. Minimize coastal development in areas of high risk of erosion, flooding, tsunami inundation, and sea level rise.
2. Provide for adequate emergency shelters and communication systems in all planning districts.
3. Periodically review building codes and permitting standards for alignment with disaster risk reduction (DRR) efforts.
4. Designate areas to serve as public shelters when designing and constructing new public buildings.
5. 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, hurricanes, or flooding. Require disclosure of hazards prior to reserving or booking.

B. PLANS AND STUDIES

1. 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.
2. Develop an inventory of Critical Infrastructure and Key Resources, according to the standards of the National Incident Management System (NIMS), which can be used for mitigation and disaster recovery efforts.
3. Work with the State Office of Conservation and

Coastal Lands (OCCL) to update the *Coastal Erosion Mitigation Plan* for Kaua'i.

4. Identify and index communities that have existing disaster resilience plans. Provide support to current and ongoing community hazard risk reduction, mitigation, and planning efforts.
5. Periodically review and update the *Multi-Hazard Mitigation and Resilience Plan*.

C. PROJECTS AND PROGRAMS

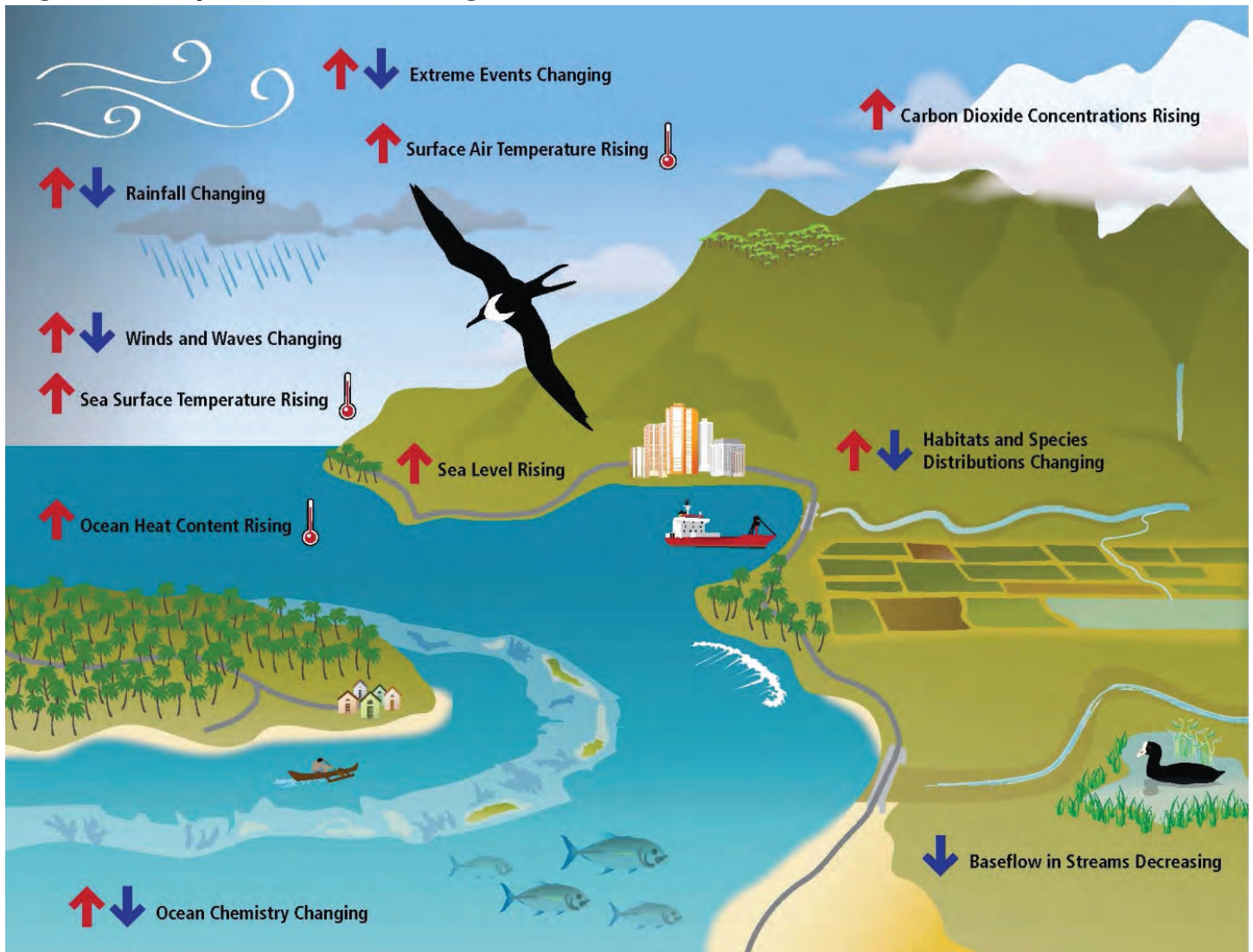
1. Ensure that the County's GIS database, including all maps, data, and hazard information, is consistently available to all agencies. Facilitate data sharing through participation in the Hawai'i Geographic Information Coordination Council.
2. Update, maintain, and enhance the use of the County's GIS and database to improve decision-making and ensure consistency in planning, permitting, and construction regulations to reduce disaster risk.

D. PARTNERSHIP NEEDS

1. 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.
2. Encourage the integration of agricultural planning and coordination into disaster risk management to improve local food security, sustainability, and community resilience to hazards.
3. Plan for maintenance of critical facilities and infrastructure in the event of a hazard. Identify mitigation opportunities in utility service plans and implementation resources.
4. Improve public awareness materials distributed by the County through periodic updating with the best available data and maps.
5. 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.

6. Improve data gathering and accounting for risk and vulnerability assessments for wind, droughts, and wildfires.
7. In assessing telecommunications vulnerabilities and planning pre-disaster preparedness measures, consult with the Utility Disaster Preparedness and Response Group for advice and recommendations.
8. 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 information. Include local communications strategies in resilience plans.
9. 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.
10. Reduce “flash fuels” such as dry vegetation in high use areas and encourage vegetation clearing and clean-up programs.
11. Assess the need for specialized accommodations at shelter facilities to improve accessibility for special needs groups and pet owners.
12. Ensure the capacities of shelters, infrastructure, and critical facilities can accommodate the population exposed to catastrophic events

Figure 3-20 Impacts of Climate Change on Kaua’i



Source: Pacific Islands Regional Climate Assessment

according to recent census numbers, projected growth models, and projected hazard scenarios.

13. Support the development of a Common Operational Picture, which incorporates real-time asset status tracking for Emergency Management.

3. GLOBAL WARMING AND CLIMATE CHANGE ADAPTATION

Climate change and its associated symptoms will have wide-ranging impacts on 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.

Objective: To prepare for and adapt to the impacts of climate change on the natural and built environments.



3.1 Anticipating Climate Change Impacts

There is substantial documentation of global warming trends over previous decades, but predicting the exact rate and timing of future warming and associated sea level rise is difficult. Based on the best available science, we should plan for three (3) feet of sea level rise by the latter half of the century. It is important to note that this estimate may be conservative, as some studies project upwards of six (6) feet of sea level rise by 2100. The greatest uncertainty surrounding the projections is the rate and magnitude of ice sheet loss primarily from Greenland and West Antarctica. Further, the rate and magnitude of sea level rise is dependent on worldwide efforts to reduce greenhouse gas emissions. Given the range of uncertainty, a scenario-based planning approach that utilizes a range of SLR projections and uses a risk tolerance metric when choosing a SLR planning target for a project. For example, new infrastructure with a long anticipated life would represent very low risk tolerance while shorter-term, low-cost infrastructure that

is adaptable and/or moveable could tolerate a greater risk.

Coastal areas are expected to experience the greatest amount of change, which in turn will impact the roughly 20 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.⁵²

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 percent 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 rainfall patterns are disrupted or if salt water intrudes into any low-lying water wells. Kaua'i's arid environments, such as the West Kaua'i plateau, may become drier and may impact agriculture as well. Ocean acidification will also impact marine environments – such as coral reefs – thus having a great impact on Kaua'i's fisheries. Figure 3-20 depicts the various impacts that climate change could have on Kaua'i's natural and built environment.

3.2 Planning for Adaptation

The *Kaua'i 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 *Kaua'i 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.

⁵² As Pacific Islands Flood, A Climate-Driven Exodus Grows, Scientific American, 2013

Initial mapping of sea level rise (SLR) inundation in selected areas of Kaua'i was done utilizing data from the 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, Po'ipū, Nāwiliwili, Wailua, Kapa'a, Anahola, Hanalei, and Hā'ena. Appendix D includes 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 Hawai'i researchers. This data, combined with FEMA flood maps, was 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 on 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



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

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.

A. PERMITTING AND CODE CHANGES

1. Use the best available climate and hazard science to inform and guide decisions. Determine a range of locally relevant (context specific) sea level rise projections for all stages of planning, project design, and permitting reviews. At the time of this General Plan Update publication, the science suggests a planning target of three feet of sea level rise.
2. Regularly review and refine relevant policies, rules, and regulations based on the most currently available climate and hazard science and projections.
3. Identify lands/areas that may serve as buffers from coastal hazards and restrict development within them.
4. 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.
5. 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.
6. 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 non-conforming structures such that these structures are relocated a safe distance from the shoreline in hazardous areas.

d. Evaluate conditions that prohibit shoreline armoring.

7. 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.
8. Periodically update the building codes 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.
9. 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.

B. PLANS AND STUDIES

1. 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.
2. 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.
3. Encourage strategic retreat and relocation to safer areas based on the results of the assessments above.

4. Use results of hazard, risk, and vulnerability assessments to inform adaptation strategies to be incorporated into Community Plans or other planning processes.
5. 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 affect erosion rates and wave inundation.
6. 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*.

C. PROJECTS AND PROGRAMS

1. 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.

D. PARTNERSHIP NEEDS

1. 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 Pu'u Ka Pele and Nā Pali-Kona Forest Reserve locations.
2. Ensure consistent public access to communications, warning systems, roads, and infrastructure in remote areas in the event of a hazard.
3. 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.



Bon Dance in Puhī, Lihū'e District

SECTOR: X. OPPORTUNITY & HEALTH FOR ALL

The General Plan's goals include Kaua'i being a place with healthy and resilient people, and to be an equitable place with opportunity for all. These goals mutually reinforce and are essential to the overall 2035 Vision.

Quality of life is impacted by the built environment. Environmental factors include 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 quality education; and access to recreational areas that support active lifestyles. When improving the built environment it is vital that the wellbeing and health of vulnerable populations, such as our keiki and kūpuna, are considered.

This section addresses Social Equity, Access to Quality Education and Training, Community Health, and Access to Recreational and Subsistence Activities. These issues touch all 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.

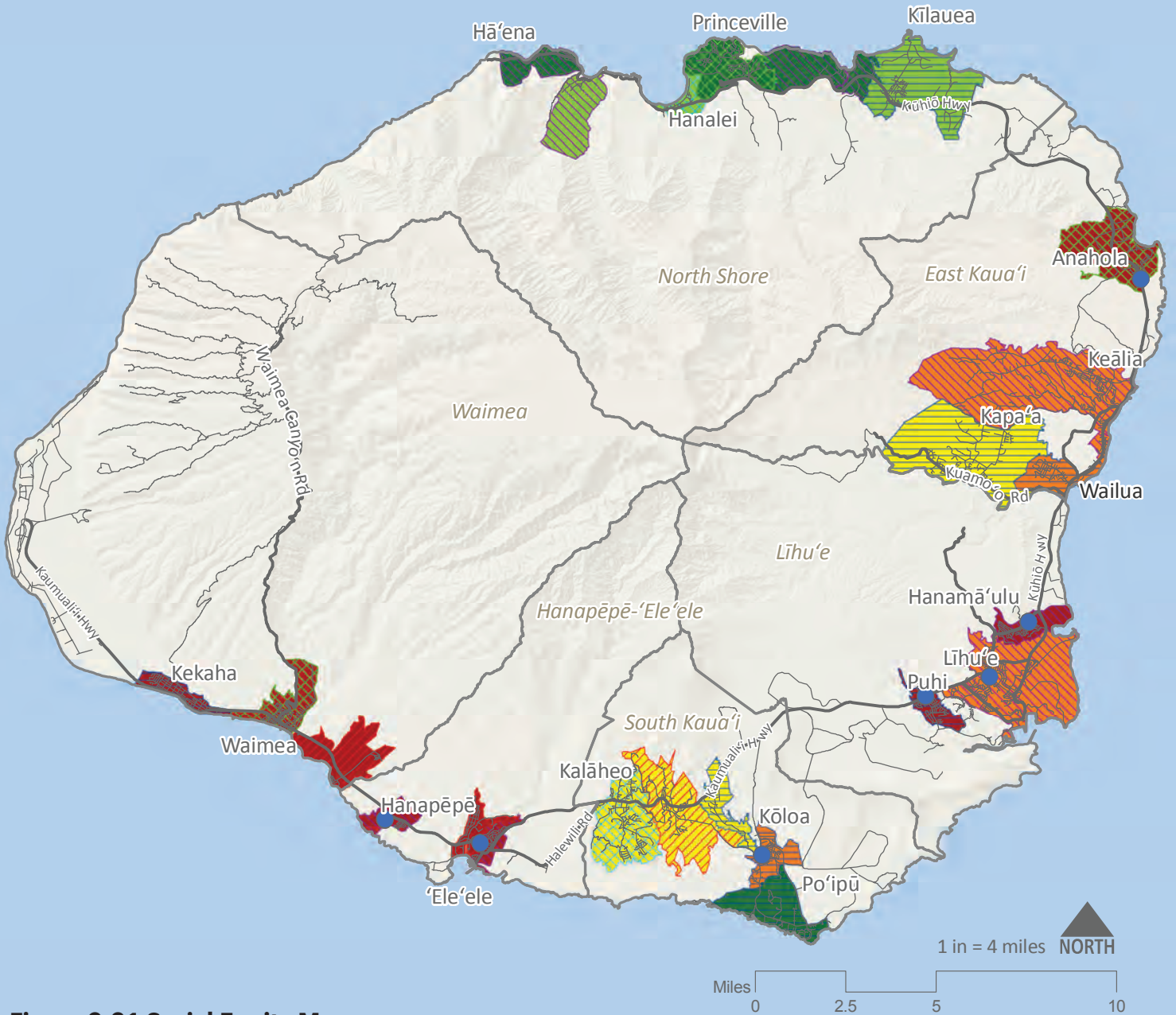
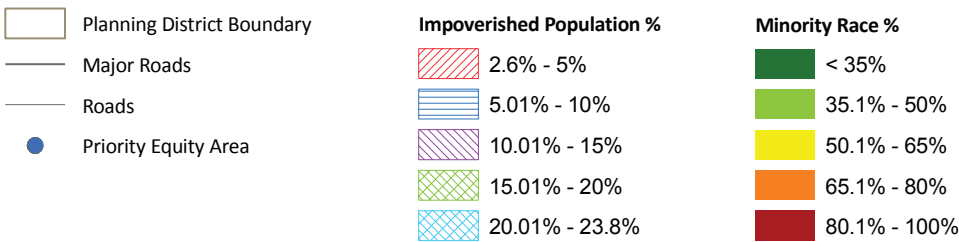


Figure 3-21 Social Equity Map



1. SOCIAL EQUITY

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

Objective: To recognize and address inequities in health and well-being among Kauaʻi's diverse ethnic, racial, and income groups.



1.1 Celebrating Kauaʻi's Diversity by Addressing Equity Issues

Recognizing, celebrating, and serving all forms of diversity contributes to a sustainable society. Kauaʻi has an extremely diverse population by national standards with 67 percent of the population identified as a minority race.⁵³ Demographic shifts are also occurring, with changes in household composition and increases in the percentage of the population aged 65 and older. As a multiracial community, Kauaʻi values its diversity and recognizes the need to embrace all cultures. However, there are still inequities in health, economic status, and access to housing, education, jobs, and services. Moreover, some of these inequities are concentrated in specific communities.

Given these inequities, the County should ensure equitable access to housing, transportation, parks, and facilities. By increasing investment and focusing improvements in disadvantaged communities, overall community wellbeing and health will improve. This also means expanding choices and services to those with limited options. In addition to infrastructure investment and services, the County should look for ways to increase community engagement in disadvantaged communities and with groups not well represented in planning processes.

53 U.S. Census Bureau, 2010

1.2 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 3-21). The map shows the priority equity areas, and the Census Designated Places with high percentages of minority households and households experiencing poverty.

- Līhuʻe-Puhi-Hanamāʻulu (Līhuʻe District)
- Anahola (East Kauaʻi District)
- Kōloa (South Kauaʻi District)
- Hanapēpē-ʻEleʻele (Hanapēpē-ʻEleʻele District)
- Kaumakani (Waimea-Kekaha District)

1.3 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 kākou. 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 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.

Vibrant, cohesive neighborhoods provide people with opportunities to gather, meet, and converse in public places. This includes venues for art and culture, ample public spaces, pedestrian-oriented streets, and community events that bring people together and inspire civic pride. Strategies to support this are included in the sector actions for Housing, Shared Spaces, Transportation, and Heritage Resources.

1.4 Protecting Native Hawaiian Rights

There is a statewide movement to restore Native Hawaiian rights and lands, to obtain reparations for past and ongoing use of trust lands, and to attain a sovereign Native Hawaiian government. It is important to set forth Native Hawaiian rights and to define the role of the County government in this movement. Under the State Constitution and the County Charter, the County of Kaua'i is empowered to promote the health, safety, and welfare of all inhabitants without discrimination as to ethnic origin. As part of carrying out its responsibilities under the Constitution and the Charter, the County recognizes the rights of Native Hawaiians and laws concerning lands and waters that have been established through the State Constitution, State and Federal laws, and State and Federal court decisions. No County ordinance or rule shall modify or diminish these rights:

- Native Hawaiian water rights provided under the State Water Code, Hawai'i Revised Statutes (HRS) Chapter 174C.
- Kuleana lands, water rights, and access rights provided under the Kuleana Act of 1850,

as recognized in current statutes, rules, and court decisions. For example, the County must allow construction of a house on kuleana land, regardless of County zoning.

- Konohiki and hoa 'āina fishing rights provided under the 1839 Law of Kamemeha, as modified by subsequent legislative acts and court decisions.
- Traditional and customary rights of Native Hawaiians, such as for access and gathering, provided under the State Constitution and HRS, and as interpreted by the courts.
- Burial rights provided under the Hawai'i Historic Preservation Act and the Federal Native American Graves Repatriation Act.



Keiki at a May Day celebration

A. PERMITTING AND CODE CHANGES

1. Limit the proliferation of predatory lending establishments through licensing and zoning powers.
2. Expand and preserve affordability in neighborhood centers around the island through zoning, incentives, and development.
3. Provide affordable housing in proximity to community resources and services.
4. Mitigate impact to Native Hawaiian traditional and customary practices and the resources they rely on through district boundary amendments and zoning amendments.

B. PLANS AND STUDIES

1. Complete a study to establish ratios for different categories of housing for workforce (less than 140 percent of median income), elderly, and disabled.

C. PROJECTS AND PROGRAMS

1. Develop funding sources to expand, improve, and maintain high-quality transportation, water, parks, broadband, and other infrastructure in underserved neighborhoods.
2. Leverage infrastructure investments to bring jobs and housing opportunities to underserved communities.
3. Increase access and affordability of public transit for youth and other transit-dependent populations.
4. 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.
5. Establish health and opportunity criteria for prioritizing County programs and policies.
6. Establish community standards for wages and



Keiki sporting event at Hanalei Bay, North Shore District

benefits, ensure fair scheduling, and support worker organizing.

7. Ensure fair hiring, equal pay, and equitable promotion opportunities within the County workforce.
8. 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.
9. Target economic development efforts to encourage high-opportunity industries that have potential for growth and to create jobs for people with less than a four-year degree.
10. 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.

D. PARTNERSHIP NEEDS

1. Ensure low-income students receive quality public education through strategies including comprehensive, place-based cradle-to-career initiatives.
2. Support reform to school disciplinary policies to keep youth in school and on track to graduate.
3. Partner with Kaua'i Community College for workforce development and training programs and apprenticeships.
4. Foster racially and economically integrated neighborhoods.
5. Require applicants to demonstrate knowledge of Hawaiian land and water laws as a prerequisite for licensing or professional registration with State boards and commissions that license professions relating to transfer of land ownership or land development. These include the Real Estate Commission, Board of Registration for Professional Engineers, Architects, Surveyors, and Landscape Architects.

2. 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.

Objective: To support educational programs that foster cultural knowledge, employability, and civic participation of local residents.



2.1 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 that raised the age limit for Kindergarten.

2.2 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

Table 3-4 Hawaiian Immersion Charter Schools

Name	Grades	Type	Description	Location
Ke Kula o Ni’ihau	K-12	Public Charter	Emphasis on perpetuating the language and culture of Ni’ihau.	Kekaha
Kula Aupuni Ni’ihau a Kahelelani Aloha (KANAKA)	K-12	Public Charter	Emphasis on acquisition of English and functional skills while sustaining Ni’ihau language for native speakers.	Kekaha
‘Aha Pūnana Leo o Kaua’i	Pre-K	Private	Immerses 3-4 year-olds in Hawaiian language and provides curriculum through a cultural- and ‘ohana-oriented context.	Puhi
Kawaikini New Century Public Charter School (NCPCS)	K-12	Public Charter	The school’s vision is “a thoughtful, knowledgeable, and healthy community where the language, beliefs, and practices of the indigenous people of Hawai’i have become instinctive.”	Puhi
Kanuikapono	K-12	Public Charter	Provides programs designed to improve the educational achievements of youth and families through Hawaiian culture and nature-based programs.	Anahola

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 events.

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.

2.3 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, reduce bullying, and assist schools with real-world relevancy, financial literacy training, and career preparation. In addition, more lifelong learning and inter-generational education is needed, particularly for developing stronger and more supportive parenting.

The County and Kaua’i’s business community should work in concert with local K-12 schools to better prepare the next generation of the 21st century workforce. In an effort to produce high school graduates with fundamental workforce-ready skills, local businesses and employers will partner with educators to provide teachers and students with training opportunities outside of the classroom. Also, educators should coordinate with local businesses and entrepreneurs to incorporate Kaua’i-specific learning opportunities

into their DOE-approved curricula. This would expose high school graduates to the local job market and help develop interest in working and remaining on island. By establishing these types of working relationships between K-12 programs and the economy, students can be encouraged to enter the local workforce and improve upon it.

2.4 Supporting the Kaua'i Community College and Increasing Training Opportunities

Kaua'i Community College (KCC), part of the University of Hawai'i system, is Kaua'i's only post-secondary 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 enrollment and guide facility development.

'A'ohē o kāhi nānā o luna o ka pali; iho mai a lalo nei; 'ike i ke au nui ke au iki, he alo a he alo.

The top of the cliff isn't the place to look at us; come down here and learn of the big and little current, face to face.

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. On-campus housing would encourage neighbor island and out-of-state enrollment, and support the students and faculty who otherwise have long commutes. Although KCC has considered expanding its capacity with respect to on-campus housing and four-year university accreditation, there are no plans to pursue such changes in the near future. Nonetheless, the potential for expansion shall remain given the recent establishment of the University Zoning District in the Comprehensive Zoning Ordinance and the SLUD boundary amendment from Agriculture to Urban. Given its location in Līhu'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 Līhu'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 intended to facilitate the growth and development of KCC.

2.5 Supporting the Language, Culture, and Knowledge of Kaua'i

The number of public charter schools in Hawai'i is growing as parents look for alternatives to public school curriculums. Charter schools are smaller in size, provide for multiple-grade level integration, multiple-discipline projects, and place-based learning. Many are focused on the Hawaiian language and culture.

It is said that understanding the language of a place allows one to see life through the eyes of its original people. In this context, schools that focus on the Hawaiian language and culture provide children with a way of understanding and interacting with the world and people around them in the same way ancestors of our island were able to. It is typical for Hawaiian language-based schools to include the learning of moon phases and agriculture as part of science and math education. Field trips take classroom lessons outdoors to learn about nature and caring for the land. Older children are made responsible for younger ones while younger children are in turn given responsibilities in keeping with their role in the 'ohana or society. Learning English and "western concepts" are usually integrated at some level at all schools. For children who are native speakers, there are schools that specialize in improving English skills and the understanding of western concepts in order to increase their success in college and future careers.

On Kaua'i, there are several private and public charter schools (pre-K to 12) whose curriculum is rooted in Hawaiian language, culture, and values.

Enrollment of Hawaiian language and culture-based schools has steadily grown across the State since the establishment of the very first Hawaiian language school, 'Aha Pūnana Leo on Kaua'i in 1982. Table 3-4 lists Hawaiian Immersion Charter Schools on Kaua'i. As the schools grow and graduate more speakers of Hawaiian language and students of Hawaiian culture, it will be important to continue support of integration of language and culture in all aspects of community, in order to perpetuate the identity of Kaua'i and support communities and jobs stemming from this knowledge base.

A. PERMITTING AND CODE CHANGES

1. For large residential projects and in new communities, ensure the development of adequate school facilities, either at existing schools or at new school sites.
2. Have developers pay their share of all costs needed to provide adequate school facilities for the children anticipated to live in their development.
3. Support the use, expansion, and development of family childcare homes, preschools, parent/child kindergarten readiness programs, and charter schools.

B. PROJECTS AND PROGRAMS

1. Prioritize pedestrian, bicycle, and road safety improvements around and adjacent to schools.
2. 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 Līhu'e and Kapa'a.

C. PARTNERSHIP NEEDS

1. Treat schools as community resources for learning about specialized environmental, cultural, and historic subjects pertinent to Kaua'i.
2. Support community use of schools during non-school hours, such as recreational centers, meeting facilities, and emergency shelters.
3. Design school facilities to facilitate community use during non-school hours.
4. Retrofit existing facilities and design and construct new schools to serve as hurricane shelters.
5. Support the Keiki to Career Kaua'i programs and activities.
6. Continue and expand the Safe Routes to School program to encourage healthy, safe, and active living.
7. Support increased enrollment at Kaua'i Community College and the development of supportive housing, transportation, and facilities for students, staff, and faculty at the Puhi campus.
8. Support both public and private educational programs that emphasize the Hawaiian language and Native Hawaiian culture, science, and practices.

3. COMMUNITY HEALTH

Community health is improved when the built environment supports active lifestyles and when people have access to the resources and information they need to make healthy choices and manage their health.

Objective: To improve community health through a "Health in all Policies" approach.



3.1 Improving Community Health through Planning and Collaboration

A healthy and resilient people is one of the General Plan's overarching goals. While Hawai'i typically ranks high in national health surveys, Kaua'i faces serious public health issues.⁵⁴ For example, the rates of obesity, teen births, suicide, and motor vehicle crashes are either increasing or above the State average.⁵⁵ Moreover, these impacts are inequitably distributed across Kaua'i's diverse racial and ethnic groups. On Kaua'i, the lead public health agency is the Kaua'i District Health Office of the State Department of Health. Its role includes chronic disease management and control, communicable disease control, developmental disabilities, environmental health, and family health services.

However, on Kaua'i and throughout the world, traditional concepts of public health have evolved to bring new partners to the table. Given the importance of the physical environment and social determinants on health, a new approach called "Health In All Policies" (HIAP) seeks to integrate health and equity considerations into policy and systems. For example, a growing body of scientific evidence has correlated the design of the built environment with public health outcomes.⁵⁶ It is now a best practice in planning to support land use and community design strategies that encourage physical activity and reduce automobile dependency. On Kaua'i, the State's

⁵⁴ Gallup-Healthways, 2017

⁵⁵ Kaua'i Community Health Needs Assessment, 2013

⁵⁶ CDC Task Force on Community Preventative Services, 2004

Physical Activity and Nutrition Plan (2009) has brought planners, public health professionals, and community members together to develop active living strategies through Get Fit Kaua'i – the Healthy Eating, Active Living (HEAL) Community Coalition of Kaua'i County.

Ua ola loko i ke aloha
Love gives life within.
(Love is imperative to one's mental and physical welfare.)

The work of promoting active community design has been reinforced through the Kaua'i Community Health Improvement Initiative (KCHII) (2013), which established a health improvement framework for Kaua'i. The KCHII utilizes the ahupua'a model to recognize that the "upstream" and "midstream" influences of health include socioeconomic conditions, health care, and the built environment. The five priority themes include community design and planning, housing, health and wellness, medical care, and education and lifelong learning. These themes informed the objectives and actions of the Housing, Shared Spaces, and Opportunity and Health for All sectors.

3.2 Improving Access to Health Care and Preventative Services

Access to health care means ensuring all of Kaua'i's residents, even in rural areas, have convenient access to health clinics, acute care, and emergency services. Kaua'i is currently served by three hospitals: Wilcox Medical Center in Līhu'e, Samuel Mahelona Memorial Hospital in Kapa'a, and the Kaua'i Veterans Memorial Hospital in Waimea. All three facilities provide 24-hour emergency care. The facilities at Wilcox are privately run, while the Hawai'i Health Systems Corporation manages the other facilities. The North Shore will be served by an urgent care clinic that is currently under construction.

Preventative care is another facet of overall wellness. Many chronic diseases can be prevented through upstream interventions including screening, early detection, and management of diseases such as breast cancer, cervical cancer, diabetes, elevated cholesterol, hypertension, colorectal cancer, and HIV. Access to reproductive health services is another need given the higher than average teen pregnancy rate and a high unintended pregnancy rate among the general population.



A Kaua'i Surfer

3.3 Advancing Native Hawaiian Health Equity

Native Hawaiian health has been a long-standing equity issue in Hawai'i. Recorded health disparities led to the enactment of the Native Hawaiian Health Care Act of 1988 which established Papa Ola Lokahi in Hawai'i, including Ho'ola Lahui Hawai'i, which is Kaua'i's Native Hawaiian Health System. One of their programs, Malama I Na Pua Program, raises health awareness among Native Hawaiian youth who attend a Hawaiian Language Charter School. In 2013, continued health equity concerns led the State Legislature to establish a Native Hawaiian Health Task Force to improve the health of Native Hawaiians. The work of the task force will also impact other Pacific Islanders and the community as a whole.

3.4 Addressing Substance Abuse

Life Choices Kaua'i was created in 2003 to deal with Kaua'i'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 2014.⁵⁷ 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 Kaua'i 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 O'ahu, especially as treatment is often a lengthy process. An adolescent treatment and healing center is being planned for Kaua'i that would provide residential substance abuse treatment and healing services.

3.5 Anticipating Future Threats to Community Health

In 2015, a legislative report acknowledged that climate change will intensify existing and cause new health threats, including acute and chronic disease, stress and mental health issues, and dengue fever and other vector diseases.⁵⁸ These impacts will more heavily fall on vulnerable populations, including the elderly and households experiencing poverty.

The following actions are comprehensive in nature and address broad community health needs.

A. PERMITTING AND CODE CHANGES

1. Provide access to frequent and convenient public transit near major job centers and health care facilities.
2. Ensure community design supports healthy and active lifestyles.
3. Consider zoning options that limit new fast food restaurants close to schools, daycare centers, or parks.
4. Support the built environment and land use recommendations provided by the Native Hawaiian Health Task Force and similar community health initiatives.

B. PLANS AND STUDIES

1. Include community health concerns in community planning.
2. Implement and update the *Kaua'i Community Drug Response Plan*.
3. Implement and update the *Kaua'i Plan on Aging*.
4. Implement and update the *Kaua'i Community Health Improvement Initiative*.

C. PROJECTS AND PROGRAMS

1. Prioritize sidewalk and bus stop improvements for accessibility near major health care facilities and group homes.
2. Improve the connectivity of essential services, including emergency response.
3. Ensure that low-income neighborhoods have high-quality parks, playgrounds, and green spaces.
4. Leverage Federal resources such as community development block grants and neighborhood-focused programs to create opportunity-rich neighborhoods.
5. Adopt policies for smoke-free cars with keiki, beaches, parks, and condos.

57 *2015-2020 Kaua'i Drug Response Plan*

58 *Climate Change and Health Working Group Report, 2015*

D. PARTNERSHIP NEEDS

1. Implement and update the *State Physical Activity and Nutrition Plan*.
2. Support pilot programs for community gardens and nutrition education programs.
3. Provide anti-tobacco education in schools.
4. Increase access to programs that provide reproductive health and family planning education and services.
5. Support programs to increase participation in vaccination, disease screening, and early detection and management of chronic disease, such as the “Better Choices, Better Health” Program.
6. Support healthy food options in underserved communities by:
 - a. Increasing the visibility of healthy food in stores, particularly those that accept Supplemental Nutritional Assistance Program (SNAP) and electronic benefit transfer (EBT) purchases.
 - b. Allowing the use of Supplemental Nutrition Assistance Program (SNAP) benefits at farmers markets.
 - c. Encouraging fast-food restaurants to offer healthy options and improve labeling.
 - d. Increasing access to nutritional counseling.
 - e. Taxing sugar-sweetened beverages.
 - f. Eliminating the General Excise Tax on purchases of fresh fruits and vegetables.
7. Support programs that improve Kauaʻi’s ability to respond to and recover from public health threats such as infectious disease and mosquito-borne disease outbreaks.
8. Anticipate and plan for the health impacts of climate change.
9. Increase access to mental health services and the availability of mental health providers.
10. Support the Malama I Na Pua health and wellness program for Native Hawaiian youth.

4. ACCESS TO RECREATION AND SUBSISTENCE ACTIVITIES

Some of Kauaʻi’s most unique and treasured areas are either located on or accessed through privately owned property. Access to these areas for both recreational and cultural purposes, including subsistence activities, is important to the community. At the same time, access should be balanced with education and stewardship. The State and County regulatory system protects and creates public access through the subdivision, shoreline setback, and SMA laws. However, many feel access is greatly restricted and declining in certain areas through limited parking, lack of signage, no maintenance, and inconsistent enforcement – the effects of which are compounded by increased resident and visitor use. There is also concern regarding restricted vehicular and pedestrian access to the shoreline and other places locked by privately owned land, such as waterfalls.

Objective: To actively protect, restore, and increase access to the places where recreational and subsistence activity occurs.



4.1 Improving Access to the Shoreline

By law, the shoreline is accessible and held in trust for the benefit of the public. State law protects lateral shoreline access, which is also referred to as a public beach transit corridor that exists seaward of the shoreline. Shoreline vegetation, when unmaintained or manipulated by private landowners, can restrict lateral access. Access concerns are also compounded by beach narrowing from erosion, whose rates are anticipated to increase as sea level rise occurs. Additionally, another concern was the lack of signed public accessways to the shoreline (versus access along the shoreline) and inadequate parking at popular access points. In some cases, public access

is not allowed or desirable due to environmental, public safety, and other concerns. On the beach near and adjacent to PMRF, national and U.S. Department of Homeland Security laws preempt State laws and public access is restricted. However, the overall need is for increased and improved public access to the shoreline.

4.2 Protecting Native Hawaiian Access Rights

Protecting access for Native Hawaiian traditional and customary gathering practices is guaranteed in the Hawai'i State Constitution. In addition to protecting development and private property interests, agency decisions must make specific findings related to the identification of traditional and customary practices in existence on land proposed for development and potential impacts of any proposed development. Decisions should include actions to reasonably protect cultural rights to the extent feasible. Case law, including the Pele Defense Fund v. Paty case; Public Access Shoreline Hawai'i, also known as PASH; and the Ka Pa'akai O Ka 'Aina cases reaffirm the State's duty to protect access to traditional and customary rights, such as gathering rights on the shoreline and upon land.

4.3 Increasing Access to Privately Owned Recreational Space

There are many valued recreational, cultural, and scenic resources that are privately owned or accessed through private property. Privately held recreational space include waterfalls and undeveloped coastal areas including Kīpū Kai and Māhā'ulepū. Such areas are used for hiking, hunting, gathering, swimming, and other reasons. These areas also include wahi pana, such as heiau and known burial sites. Unfortunately, the trend is toward lessening public access to these areas due to liability concerns, desire for privacy, and other reasons. For example, many waterfalls that were previously popular swimming holes are now closed, including Kīlauea, Kīpū, and Ho'opi'i Falls. When such resources become popular, especially with the rise of social media, they are vulnerable to overuse, vandalism, and littering, as well as increased risks of user injury and death. These concerns often spur private landowners to restrict access. Liability concerns can be addressed through a variety of legal and land use tools. However, the use of these tools requires specialized knowledge and a willingness on behalf of the landowner to protect and improve access. Public land trusts, such as the Hawaiian Islands

Land Trust, exist to support partnerships and solutions to increasing access.

4.4 Improving Access through County Initiatives

In 2002, the County's Public Access, Open Space, and Natural Resources Preservation Fund Commission was established to manage the "Public Access, Open Space, and Natural Resources Preservation Fund." This commission is commonly referred to as the Open Space Commission. The fund is intended for property or easement acquisition for access to beaches and mountains, preservation of cultural and historic sites, and other conservation purposes. In Fiscal Year 2017-2018, the fund earned 0.5 percent of the County's real property tax revenue. Priority projects are updated and discussed in the Commission's annual report. Given the limitations of the fund, there is also an opportunity for the Commission to work with the State and non-profit organizations, such as land trusts, and on collaborative projects that will increase public access to Kaua'i's special places.

A. PERMITTING AND CODE CHANGES

1. Require a minimum accessway width of 10 feet and locate accessways at convenient intervals.
2. Protect and preserve mauka and makai access for traditional Hawaiian cultural practices.
3. Require identification and mitigation of potential impacts of subsistence activities and resources when reviewing development permits.

B. PLANS AND STUDIES

1. Maintain, inventory, and provide information on legal public accessways to beaches and inland recreation areas. Conduct research on easement documents that have been executed or signed but not recorded.
2. Create regional networks of public trails. Partner with private landowners for missing connections via managed access.
3. Explore solutions for protecting access to recreational opportunities, including fishing, hunting, surfing, hiking, and other activities in community planning.

C. PROJECTS AND PROGRAMS

1. Acquire priority projects identified by the Open Space Commission.
2. Pursue easements, acquisitions, and landowner agreements to expand trails, access, open space, protection of coastal lands, and wilderness areas.
3. Establish a task force including landowners, land trust experts and attorneys, the Open Space Commission, and others, to study and recommend legal and land use measures to address and ameliorate liability on lands dedicated to managed public uses.

D. PARTNERSHIP NEEDS

1. Inventory and improve hunting access to Forest Reserves and government trails.
2. Seek funding for trail acquisition, development, and maintenance through the Nā Ala Hele Program and the Hawai'i Tourism Authority.
3. Focus trail acquisition in areas with a low number of public trails compared to the population, including South Kaula'i, Līhu'e, Anahola, and Hanapēpē-'Ele'ele.
4. Improve public access to landlocked State land that is managed by DOFAW. Increase recreational opportunities in these areas.
5. Use surfing reserves to protect access to surf breaks, improve parking for surfers at key surf destinations, and provide appropriate signage.
6. Increase opportunities for access to subsistence hunting, fishing, and gathering.
7. Manage lateral shoreline access concerns, including vegetation that encroaches on the beach transit corridor.
8. Develop more ATV, motorcycle, and mountain bicycling facilities so such activity is focused in areas not vulnerable to environmental damage.
9. Develop a public shooting range.
10. Promote access with kuleana through stewardship agreements, work days, jobs, and other means, to engage community members in caretaking.



Miloli'i Ridge Trail, Waimea-Kekaha District

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Aerial view of Kaua'i mountains

The ten sectors represent important areas to be addressed when planning Kaua'i's growth and development.



4.0 IMPLEMENTATION & MONITORING

4.1 IMPLEMENTING THE PLAN

The General Plan is the foundation for planning in Kaua'i County and functions within a system established by State and County law. While the Plan sets policy, actual implementation is a complex and lengthy process that occurs through a broad range of actions and decisions. For example, all future development and planning approvals must be consistent with the General Plan. Other planning instruments include ordinances, community plans, and capital programs.

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 such as these is three-fold: (a) each statistical benchmark may not reflect the reality in its ability to be implemented given the twenty-year planning horizon in this plan, (b) agencies may neither have the resources nor the method to easily glean the information necessary to accurately monitor a prescribed benchmark, and (c) 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 of 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 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 community's ability to either directly pay for such implementation or receive external funds as adequate support.

E kaupē aku no I ka hoe a kō mai

Put forward the paddle and draw it back (Go on with the task that is started and finish it).

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 in 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.

4.1.1 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 Improvements Program
6. Departmental Structure and Programs
7. Partner and Developer Contributions

Comprehensive Zoning Ordinance, Zoning Maps, and 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 is 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 to remaining consistent with the big picture envisioned by this document rather than making expedient or convenient decisions based on gray areas 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 islandwide 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 charter-mandated Six-Year Capital Improvements Program is a powerful tool for implementing the General Plan because infrastructure and projects have a substantial impact on patterns of growth and development. The Program should be conducted and evaluated on an annual basis. The projects listed in the Program should reflect priorities, such as those projects necessary to facilitate critical needs like housing. Regional priorities for capital projects can be determined through community planning. The "Projects and Programs" actions in Chapter 3 provide broad guidance for project selection and development. The annual report should not be considered a "wish list" for departments but reflect realistic constraints given budgetary availability.

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 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.

4.1.2 KEY IMPLEMENTATION AGENCIES

Adoption of the General Plan is the first step in an implementation process involving multiple partners at both the government and community levels. Although the Planning Department facilitates implementation among agencies and departments, administrative decisions are vested with the Office of the Mayor and legislative authority lies with the County Council. The roles of key officials and government agencies in General Plan implementation are summarized below, while responsibility for specific actions are shown in the Action Matrix (Appendix G).

Mayor

The Mayor is the chief executive officer of the County and exercises direct supervision over all departments. The Mayor appoints the County's managing director to oversee administrative functioning of the County.

County Council

The County Council is the legislative body of the County and is therefore responsible for adoption of the General Plan, including all plan amendments. The Council also adopts the zoning, subdivision, and development plan ordinances that comprise the County's development code. The Council approves the annual Capital Improvement Program budget for each fiscal year.

Planning Commission

The Planning Commission reviews and makes recommendations to the County Council on amendments or updates to the General Plan. The Commission also provides recommendations on development and land use approvals, including amendments to the zoning and subdivision ordinances.

Planning Department

Specific duties related to Plan implementation include preparing zoning and subdivision ordinance amendments for Planning Commission and County Council approval, reviewing development applications, and making reports and studies on planning issues. The Department also prepares Community Plans to provide detailed direction and standards on land use, urban design, transportation, and other physical planning concerns. The Department will have primary responsibility for monitoring and reporting on General Plan progress.

The Department provides administrative support to the Planning Commission, Historic Preservation Commission, and Open Space Commission.

State Land Use Commission

The Land Use Commission administers the State Land Use Law⁶⁰ in which all lands in Hawai'i are classified into one of four land use districts: Rural, Agriculture, Urban, and Conservation. The Commission has the authority to establish district boundaries and ensures that areas of State concern are addressed and considered in the land use decision-making process.

Other important County agencies whose work will be guided by the General Plan Update include:

- Department of Public Works
- Department of Parks and Recreation
- Housing Agency
- Transportation Agency
- Office of Economic Development
- Emergency Management Agency

Key utility service providers include:

- Department of Water
- Kaua'i Island Utility Cooperative (KIUC)

Key partners on the State level include:

- Department of Business, Economic Development and Tourism
- Office of Planning
- Department of Land and Natural Resources
- Department of Health
- Department of Education
- Department of Transportation
- Department of Hawaiian Home Lands

4.2 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 (a) performance measure reporting, for both the vision and the 19 policies, and (b) tracking of action implementation (see Action Matrix, Appendix G and Figure 4-1). 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. In order to administer an ongoing General Plan implementation and monitoring program, the capacity of the Planning Department will need to be increased.

4.2.1 PERFORMANCE MEASURES

Performance measures can be used to track the progress toward achieving the 2035 Vision for Kaua'i.

The General Plan introduces performance measurement into the planning system. During the public process, participants desired greater accountability for the actions identified in the General Plan. Attempts to audit the 2000 General Plan were frustrated by the lack of regular reporting and evaluation in the past. To correct this situation, a reporting and evaluation framework is established based on performance measures and a biennial committee-based evaluation process.

The performance measures, introduced in Table 4-1, are tied to the sector objectives. An important next step will be an effort to refine the performance measures and establish benchmarks. Strategic goals and targets set through partner initiatives, such as Aloha+ Challenge, can be integrated into the reporting system. Under the framework, formal reports will occur on an annual basis to the Planning Commission and County Council. The report may include recommendations for improvement in the framework, alternative measures, and/or new actions.

4.2.2 COMMUNITY EDUCATION & CAPACITY BUILDING

Monitoring of action implementation is facilitated through the Action Matrix (Appendix G), which identifies lead agencies and partners. To ensure transparency and stakeholder participation, a Kākou Committee will be established to conduct a bi-annual review of the progress made. The Kākou Committee will include public and private partners with a stake in plan implementation, and will be appointed by the Mayor. In addition to implementation evaluation, the Committee will also review the performance measures. The final report will be presented to the Planning Commission and forwarded to the County Council. The release of the report will be accompanied by public outreach and open house events to keep the community informed and engaged in the General Plan.

4.2.3 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 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 is working and what is 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, the General Plan can be a "living document."

Figure 4-1 Implementation and Feedback Loop

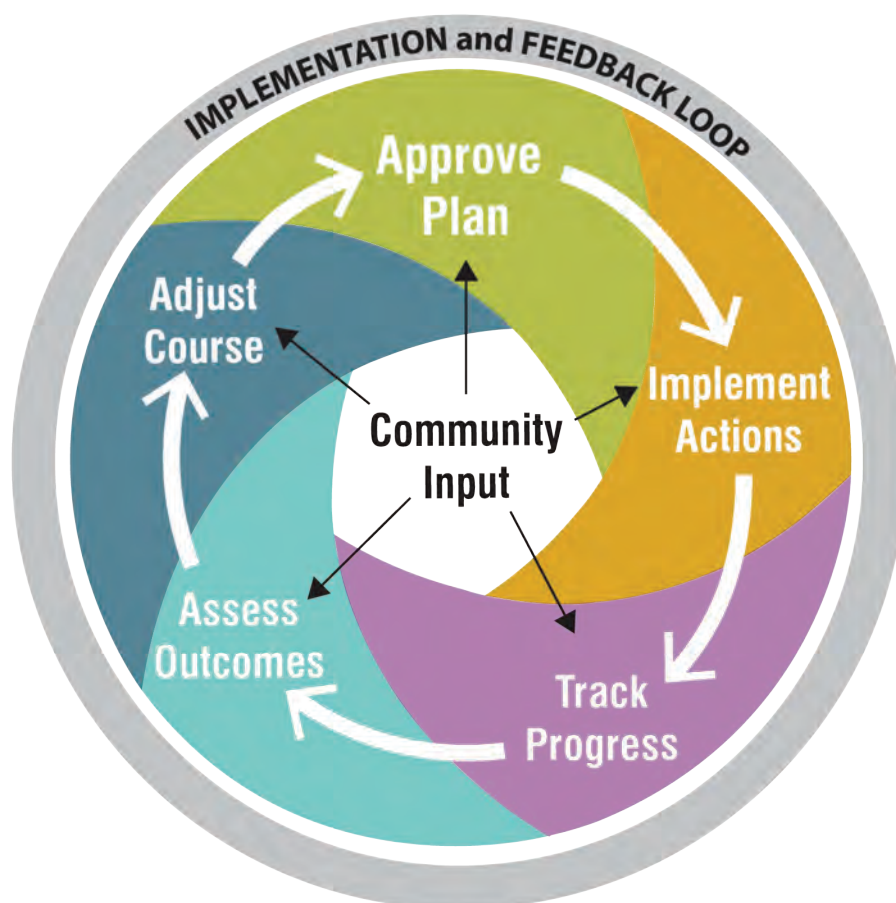


Table 4-1 General Plan Objectives and Draft Performance Measures

Objective	Draft Measures (* indicates the measure aligns with the Aloha+ Challenge Measures)
1. To accommodate and support Kaua'i's projected population growth and housing needs.	Conformance with population allocations
2. To meet future housing needs through "missing middle" housing types that are affordable by design.	Building type of new residential units
3. To protect rural character by ensuring new growth designed to be compact and focused around existing town cores.	Consistency with the Future Land Use Map
4. To manage land use and development in a manner that respects the unique character of a place.	Development under Special Planning Areas
5. To locate residential growth in and near jobs centers.	Housing units within 1/2 mile of major jobs centers Reduction in average commute time
6. To increase overall community health through design that supports safe and accessible parks, streets, and other shared spaces.	Non-commute mode share
7. To encourage the development of Lihu'e as Kaua'i's primary urban center within an urban edge boundary.	Development within Urban Edge Boundary
8. To increase resiliency by limiting new development in areas impacted by future sea level rise.	Development in flood zone/sea level rise impacted areas
9. To conserve the upper watershed and restore native habitat and forested areas.	Acres of Native Watershed under high level protection*
10. To protect, restore, and enhance freshwater resources to support aquatic, environmental, and cultural resources.	Increase in fresh water capacity by 100 mgd*
11. To preserve and protect sandy beaches and public access to the shoreline.	Health of reefs
12. To protect the flora and fauna unique to Kaua'i and Hawai'i and to mitigate the impact of invasive species.	Manage Federally listed threatened and endangered species*
13. To increase housing opportunities for low- to moderate-income households.	New affordable housing units
14. To support mixed use, higher density, and walkable development in existing towns.	New Housing Units in Neighborhood General and Neighborhood Center
15. To develop compact, walkable communities consistent with the Future Land Use Map.	Entitled projects consistent with Future Land Use Map
16. To expand housing opportunities for workers on farms.	New farm worker housing units
17. To support the Department of Hawaiian Home Lands in their mission to provide housing to their beneficiaries.	New lots awarded in DHHL communities

Objective	Draft Measures (* indicates the measure aligns with the Aloha+ Challenge Measures)
18. To accommodate the needs of an aging population through age-friendly community design and assisted living facilities.	New elderly housing units or assisted living facilities
19. To reduce Kaua'i's population of those who are houseless and at risk for houselessness.	Houseless population
20. To reduce the impact of resort uses on communities outside the Visitor Destination Area.	Attrition of nonconforming use
21. To safely and efficiently move people and goods with a choice of transportation options.	Mode shift in overall trips
22. To provide a safe and accessible County road network that supports the Future Land Use Map.	New roads or retrofits designed to be context sensitive Crashes with fatalities
23. To enhance the viability of transit as a transportation choice for residents and visitors.	Transit ridership
24. To create connected and safe bicycle networks that accommodate all riders.	Miles of bicycle facilities Bicycle crashes
25. To provide connected and safe pedestrian facilities in communities.	Miles of pedestrian facilities Crashes involving pedestrians
26. To implement efficient parking strategies that support community needs.	Parking audits or strategies implemented
27. To ensure water infrastructure is planned to accommodate domestic needs and protect the public trust.	Water improvements in Urban Center, Neighborhood General, and Neighborhood Center designations
28. To mitigate the impact to Kaua'i's fresh and ocean waters from wastewater.	Number of cesspools
29. To provide environmentally-sound waste disposal and collection services.	Tons recycled*
30. To support the modernization and user-friendliness of Kaua'i's airports and harbors.	Capital expenditures for Kaua'i's airports and harbors
31. To develop town centers as attractive places to work, live, and play.	Zoning and use permit applications in the Neighborhood Center designation
32. To provide a variety of quality and accessible parks and recreational facilities.	Percentage of households within walking distance of park with facilities
33. To expand and improve access to Kaua'i's shared-use paths and trails.	Miles of shared use paths and trails

Objective	Draft Measures (* indicates the measure aligns with the Aloha+ Challenge Measures)
34. To improve the resident and visitor experience at Kaua'i's State Parks.	Capital expenditures for State Parks
35. To focus new resort development in areas designated for visitor use.	Visitor Unit Inventory
36. To ensure the long-term viability and productivity of agricultural lands.	Agricultural employment
37. To promote opportunities for small business and emerging economic sectors to thrive.	Number of small businesses CEDS programs implemented
38. To preserve and enhance historic buildings, structures, and places.	Places recognized on Federal or national registry
39. To recognize and protect the resources and places important to Kaua'i's history and people.	Stewardship agreements
40. To preserve important landmarks and protect scenic resources.	Number of scenic resources identified through community plans
41. To increase energy self-sufficiency and maintain a reliable, resilient, and cost-efficient energy system.	Increase in renewable energy*
42. To acknowledge the human contribution to global warming and reduce Kaua'i's greenhouse gas emissions.	Decrease in emissions*
43. To ensure adequate coverage of public safety and emergency services as Kaua'i grows.	Deaths due to drowning and other hazards
44. To ensure that Kaua'i is prepared for natural disasters and other emergencies.	Number of residents trained under the Community Emergency Response Team Program
45. To prepare for the impacts of climate change on the natural and built environments.	Percentage of areas impacted by sea level rise that is undeveloped
46. To recognize and address inequities in health and well-being among Kaua'i's diverse ethnic, racial, and income groups.	Decrease in inequity between racial groups
47. To support educational programs that foster cultural knowledge, employability, and civic participation of local residents.	Kaua'i Community College enrollment
48. To encourage healthy lifestyles and accessible health care.	Obesity rate
49. To actively protect and increase access to the places where recreational and subsistence activity occurs.	Identified and signed accessways



Ke Ala Hele Makalae shared use path, East Kaua'i District

Shared responsibility and accountability for implementation are imperative to staying focused and making measurable progress.



KAUAI
KAUAI COUNTY GENERAL PLAN
KAKOU

5.0 POLICY MAPS

The spatial policy of the General Plan is depicted in a series of maps that show the general locations of constraints, resources, and areas appropriate for growth.

5.1 OVERVIEW

The General Plan policy maps are spatial representations of existing and envisioned land uses, resources, and facilities across the island. The maps show the locations of existing resources, constraints, and development. They also identify areas that 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:

- Future Land Use (Section 5.2)
- Heritage Resources (Section 5.3)
- Hazards (Section 5.4)
- Infrastructure (Section 5.5)
- Public Facilities (Section 5.6)
- Transportation (Section 5.7)

Each set of policy maps includes a set of seven maps: An island-wide map and a large scale map for each of the six planning districts. 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 FUTURE LAND USE MAPS

The General Plan Land Use Maps include an island map at 1 inch = 4 miles scale and six district maps at 1 inch = 1, 2, or 3 miles scale. These maps are intended to document desired land use patterns, to distinguish areas appropriate for future development, and to identify those areas which are to be preserved.

Purpose of the Land Use Maps:

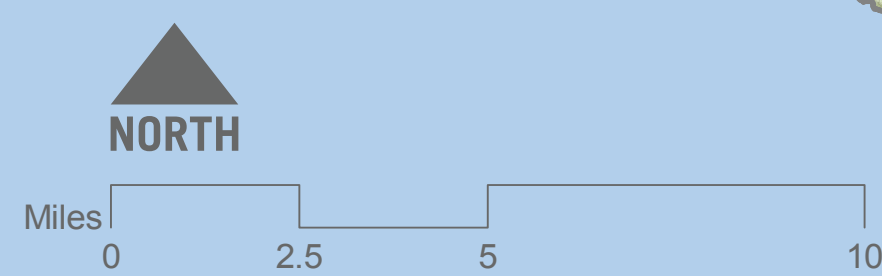
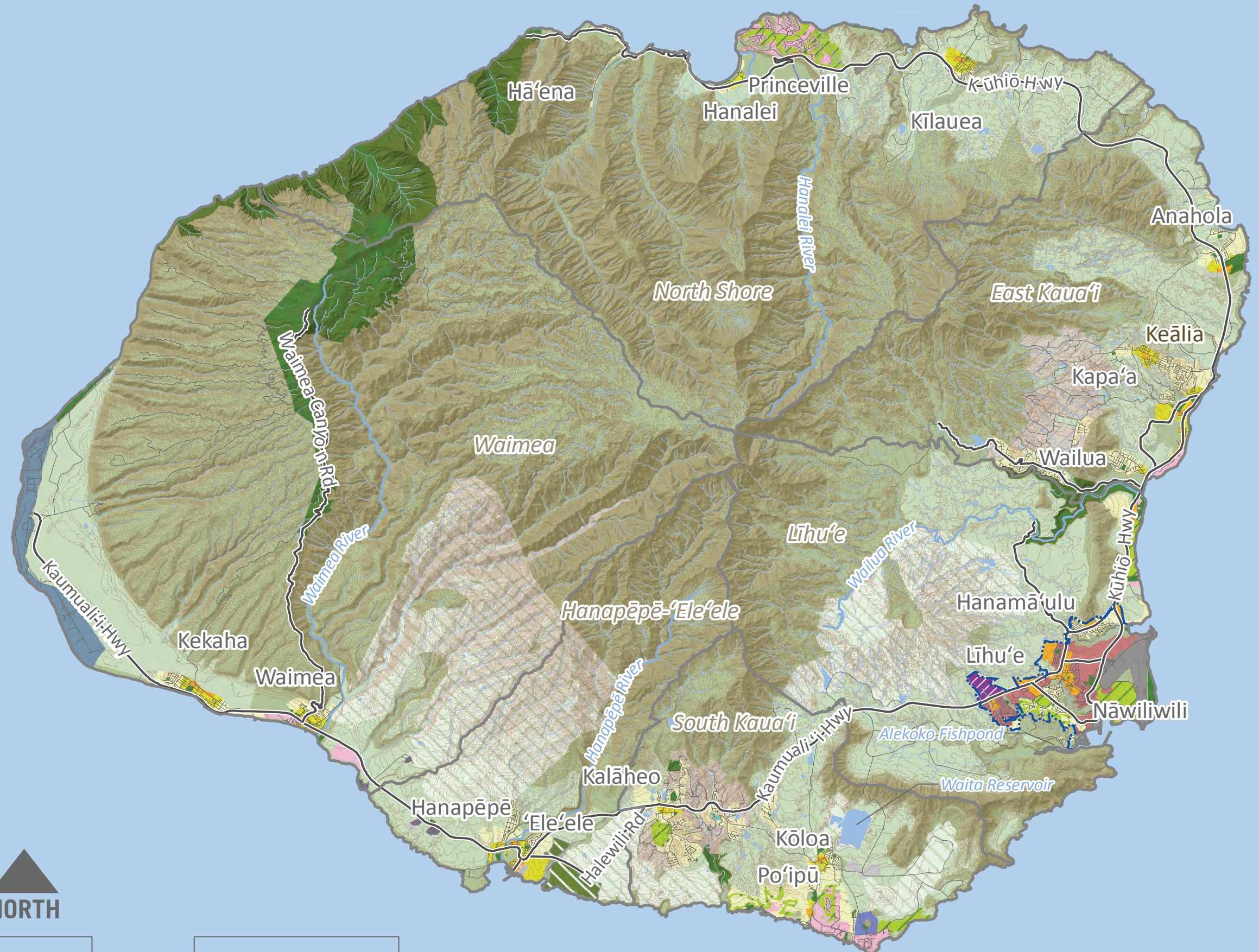
- To identify existing developed areas and lands appropriate for future development.
- To identify areas that should be retained in a natural or undeveloped state.
- To identify areas designated as “Natural” and zoned in order to protect steep slopes and streams from erosion and from development.
- To 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.



Aerial view of Wailua, East Kaua'i District

Figure 5-1 Kaua'i Land Use Map




















-  Planning District Boundary
-  Major Roads
-  Roads
-  Streams
-  USGS 40 ft. Contours
-  Urban Edge Boundary
-  Reservoirs
-  Natural
-  Agricultural
-  Agricultural (IAL)
-  Parks and Recreation
-  Golf Course
-  Homestead
-  Residential Community
-  Urban Center
-  Neighborhood Center
-  Neighborhood General
-  Large Town
-  Small Town
-  Resort
-  Provisional Resort (Pending Community Plan Process)
-  University Zone
-  Plantation Camp
-  Industrial
-  Transportation
-  Military
-  Provisional Agriculture

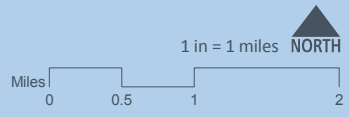
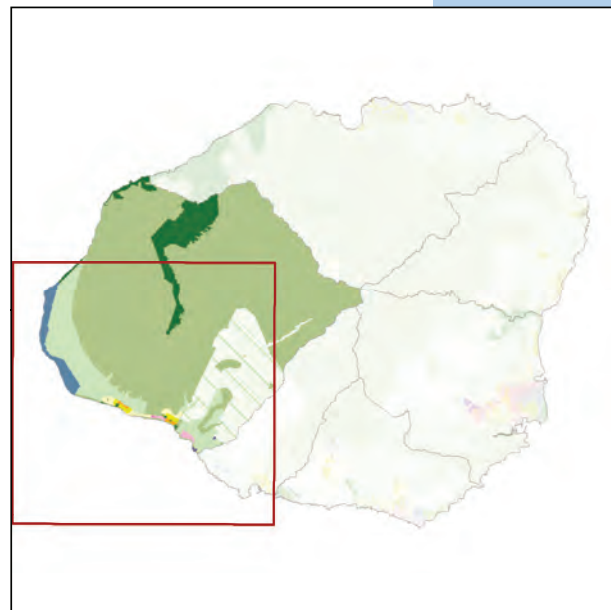


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Figure 5-2 Waimea-Kekaha Land Use Map

















-  Planning District Boundary
-  Major Roads
-  Roads
-  Streams
-  Reservoirs
-  Natural
-  Agriculture
-  Agriculture (IAL)
-  Parks and Recreation
-  Golf Course
-  Homestead
-  Residential Community
-  Neighborhood Center
-  Neighborhood General
-  Resort
-  Provisional Resort (Pending Community Plan)
-  Plantation Camp (descriptive only)
-  Transportation
-  Military

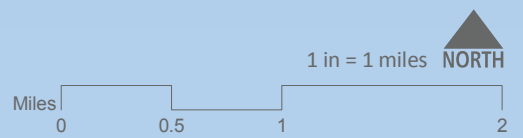
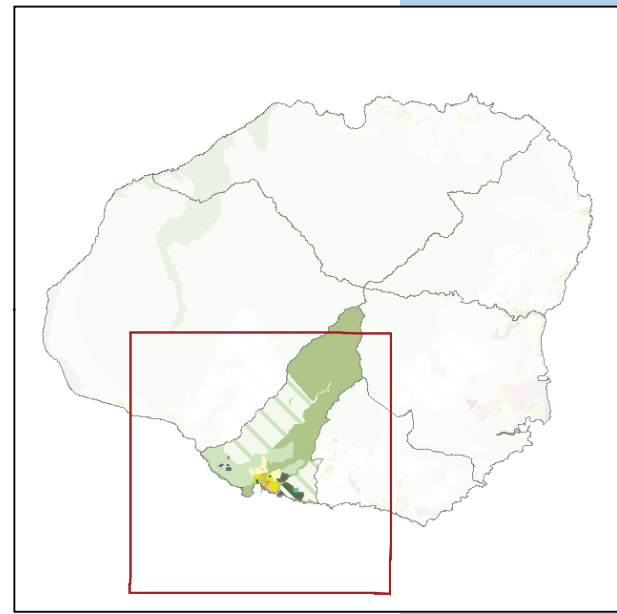
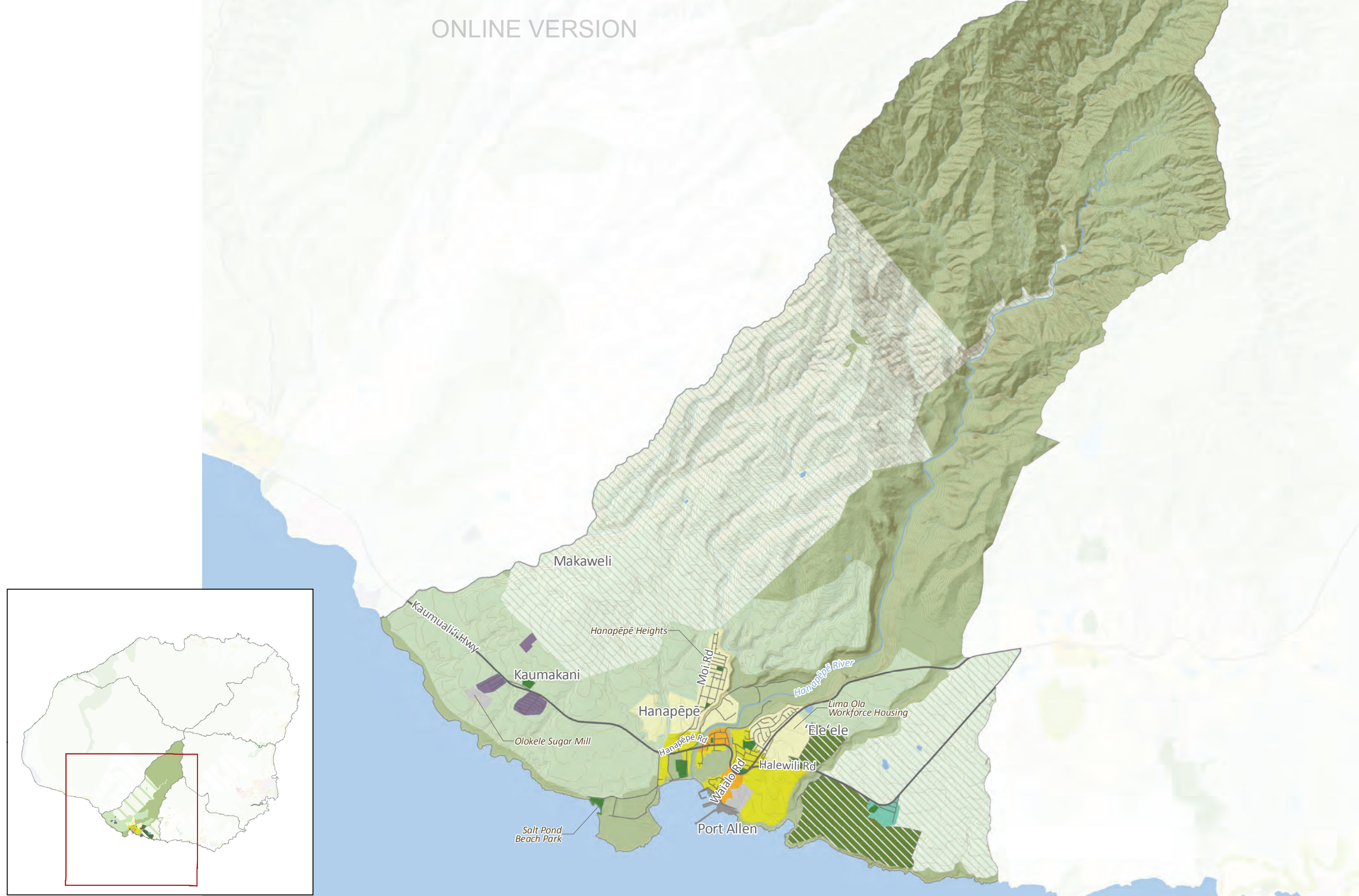


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Figure 5-3 Hanapēpē-'Ele'ele Land Use Map

-  Planning District Boundary
-  Major Roads
-  Roads
-  Streams
-  Reservoirs
-  Natural
-  Agriculture
-  Agriculture (IAL)
-  Parks and Recreation
-  Golf Course
-  Homestead
-  Residential Community
-  Neighborhood Center
-  Neighborhood General
-  Plantation Camp (descriptive only)
-  Industrial
-  Transportation
-  Provisional Agriculture

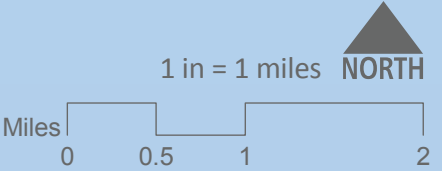
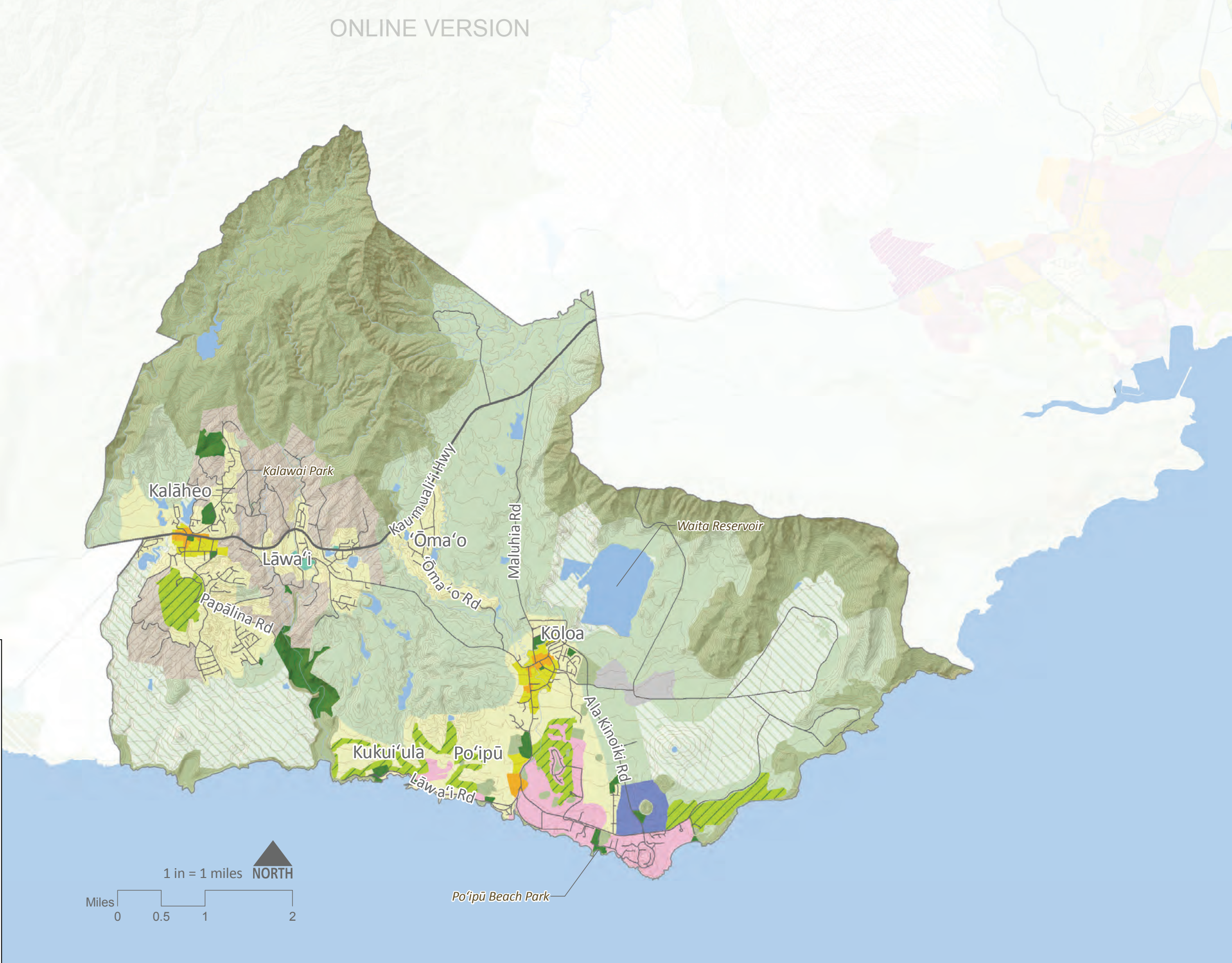
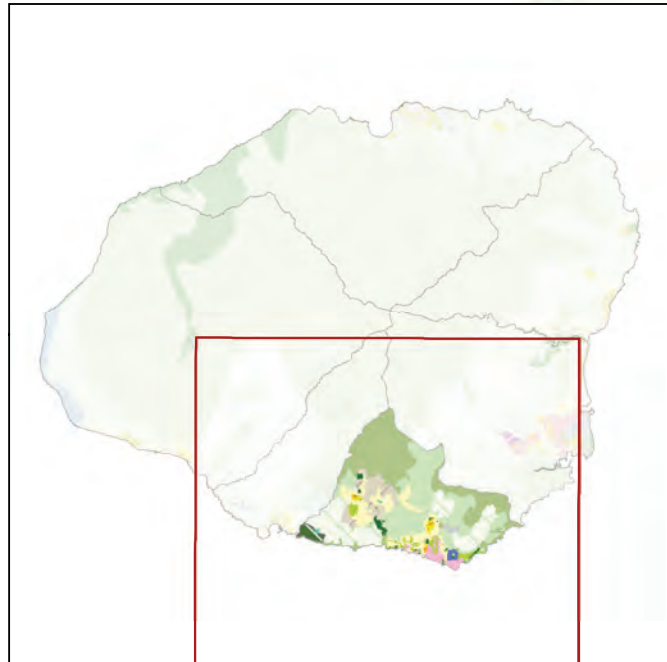


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Figure 5-4 South Kaua'i Land Use Map
















-  Planning District Boundary
-  Major Roads
-  Roads
-  Streams
-  Reservoirs
-  Natural
-  Agriculture
-  Agriculture (IAL)
-  Parks and Recreation
-  Golf Course
-  Homestead
-  Residential Community
-  Neighborhood Center
-  Neighborhood General
-  Large Town
-  Small Town
-  Resort
-  Industrial
-  Transportation
-  Provisional Agriculture

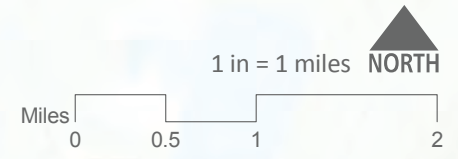
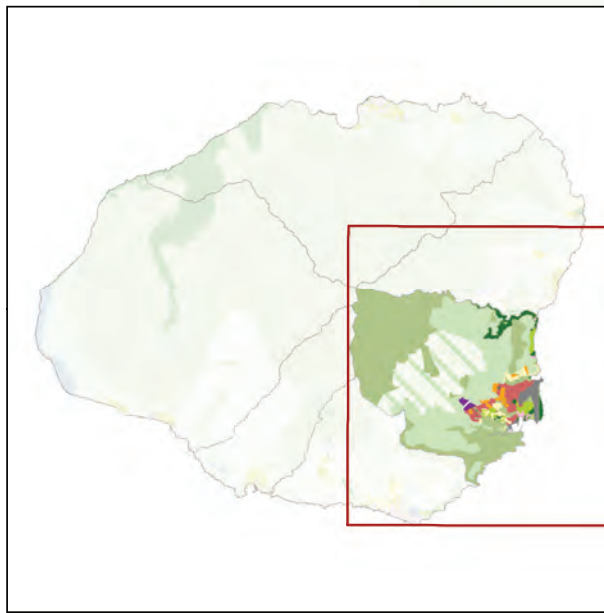
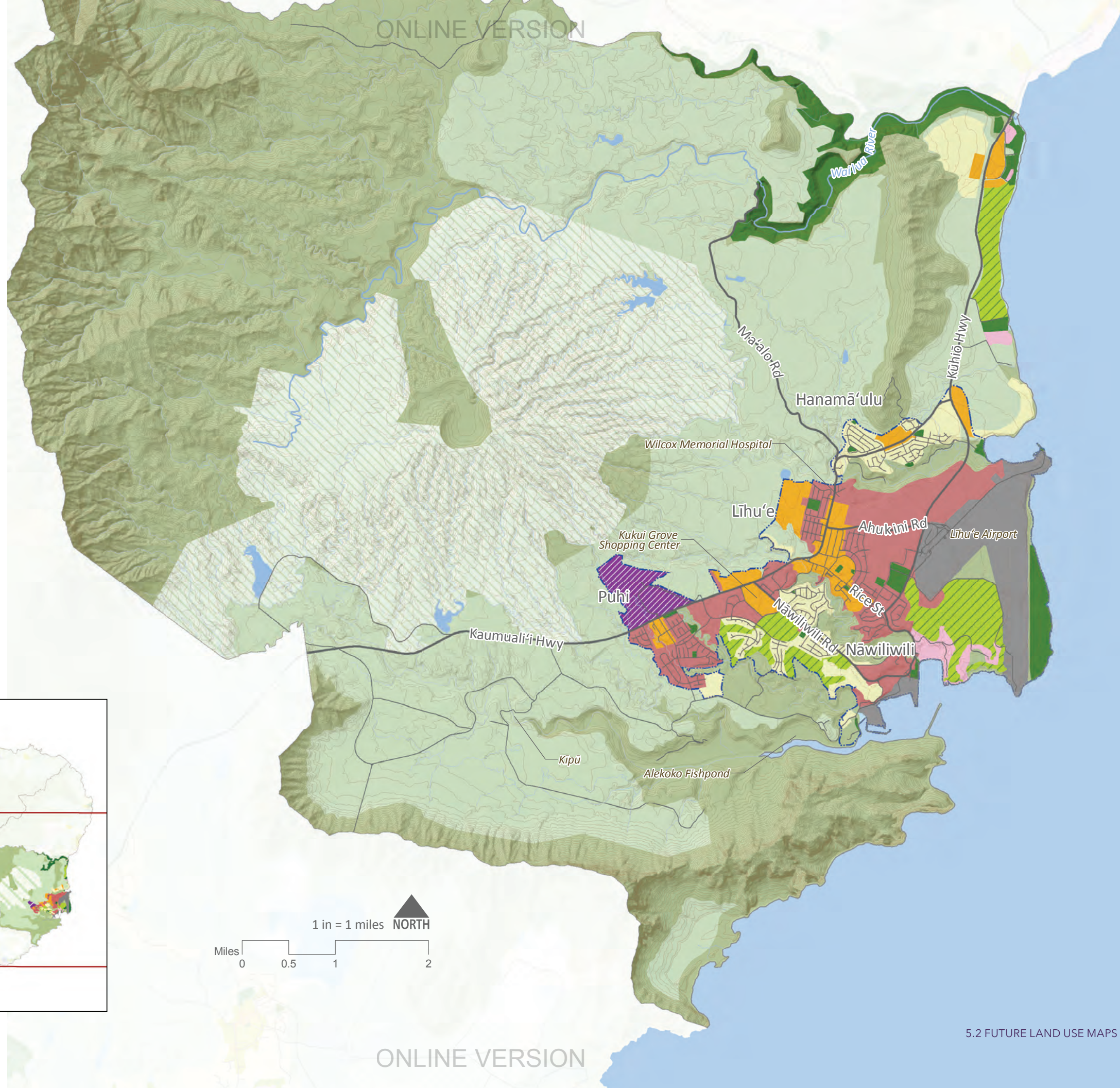


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Figure 5-5 Līhu'e Land Use Map

-  Planning District Boundary
-  Major Roads
-  Roads
-  Streams
-  Reservoirs
-  Urban Edge Boundary
-  Natural
-  Agriculture
-  Agriculture (IAL)
-  Parks and Recreation
-  Golf Course
-  Homestead
-  Residential Community
-  Urban Center
-  Neighborhood Center
-  Neighborhood General
-  Resort
-  University Zone
-  Transportation


















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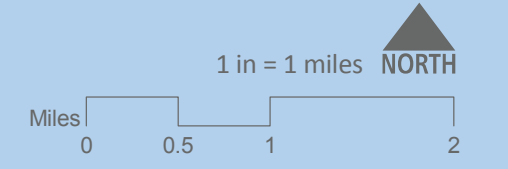
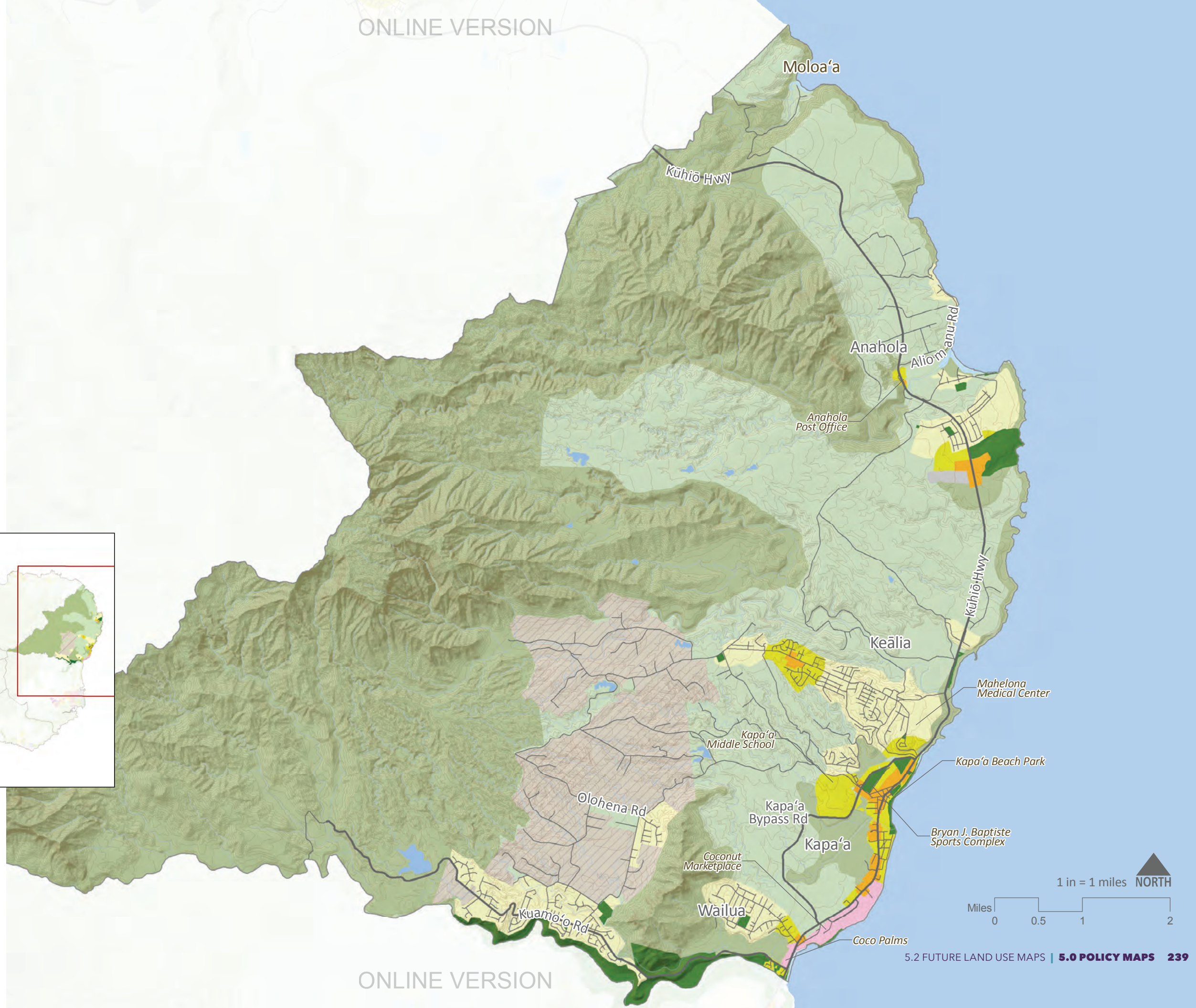
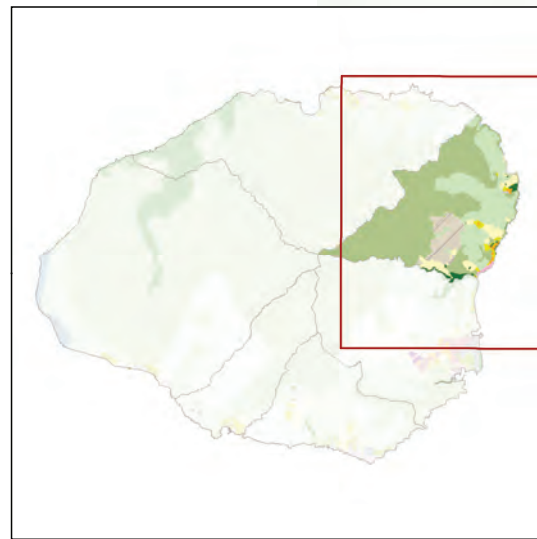
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Figure 5-6 East Kaua'i Land Use Map

















-  Planning District Boundary
-  Major Roads
-  Roads
-  Streams
-  USGS 40 ft. Contours
-  Reservoirs
-  Natural
-  Agricultural
-  Parks and Recreation
-  Homestead
-  Residential Community
-  Neighborhood Center
-  Neighborhood General
-  Resort
-  Industrial

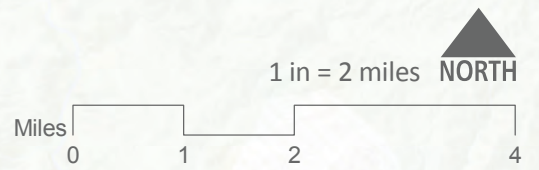
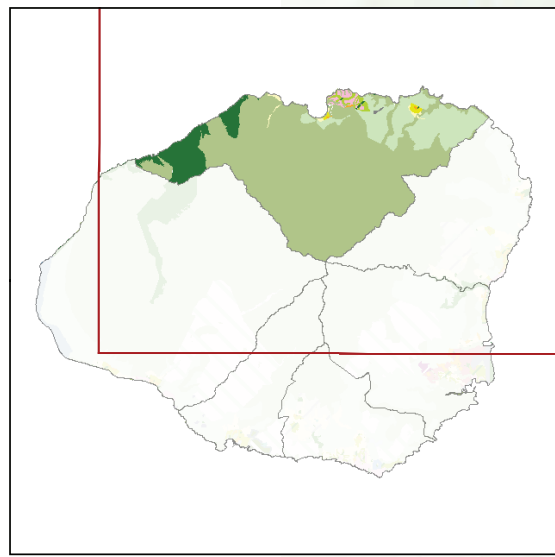
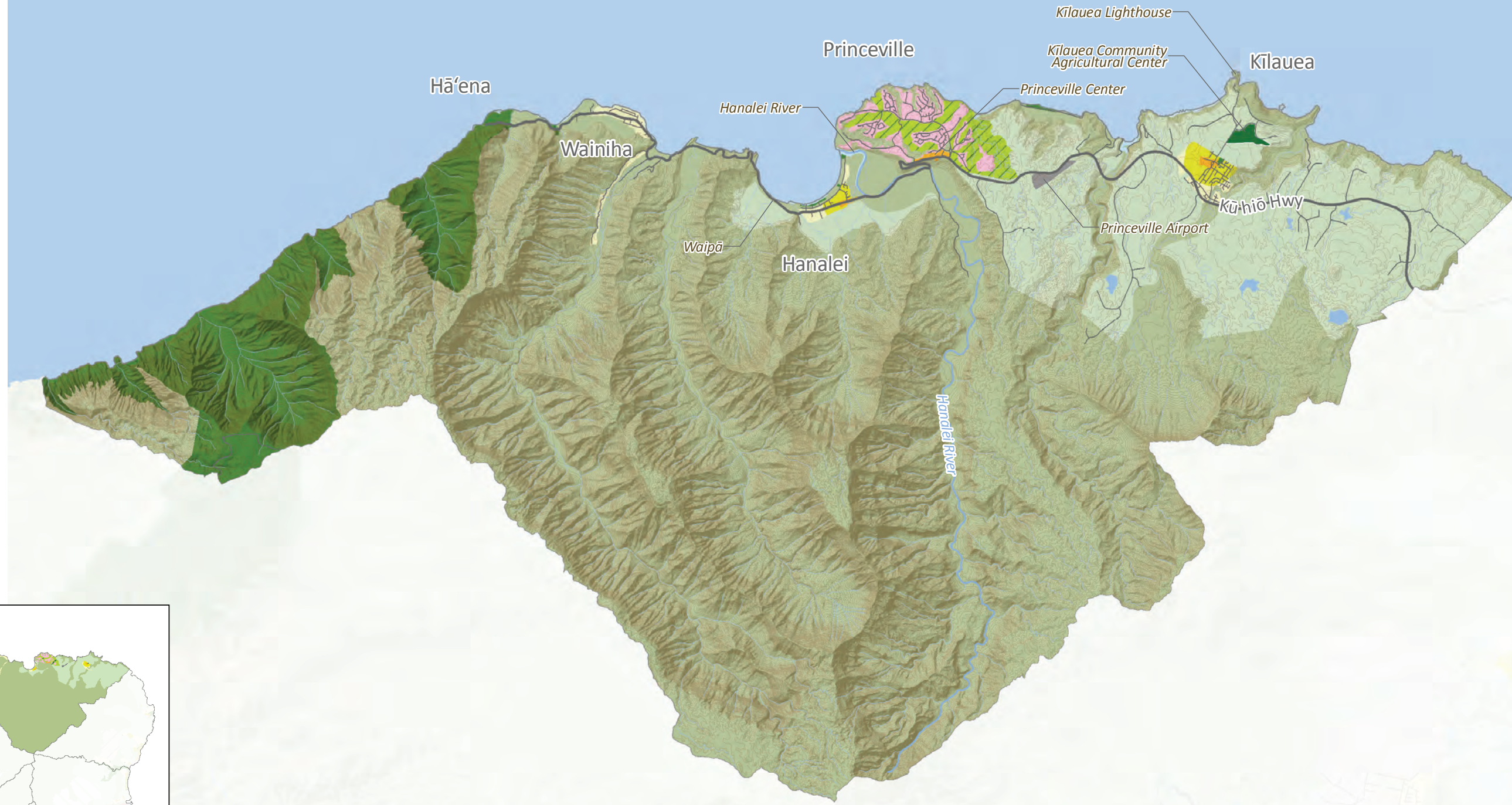


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Figure 5-7 North Shore Land Use Map

-  Planning District Boundary
-  Major Roads
-  Roads
-  Streams
-  Reservoirs
-  Natural
-  Agriculture
-  Agriculture (IAL)
-  Parks and Recreation
-  Golf Course
-  Homestead
-  Residential Community
-  Neighborhood Center
-  Neighborhood General
-  Resort
-  Transportation



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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 that 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
- Ahupua'a Boundaries
- Coral Reefs
- Scenic Corridors
- State & County Parks
- Preserves
- Reservoirs
- Regulated Fishing Areas
- Open Space Acquisition Priorities
- Sand Dunes
- Threatened & 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 Kaua'i 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 General Plan 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 for 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.

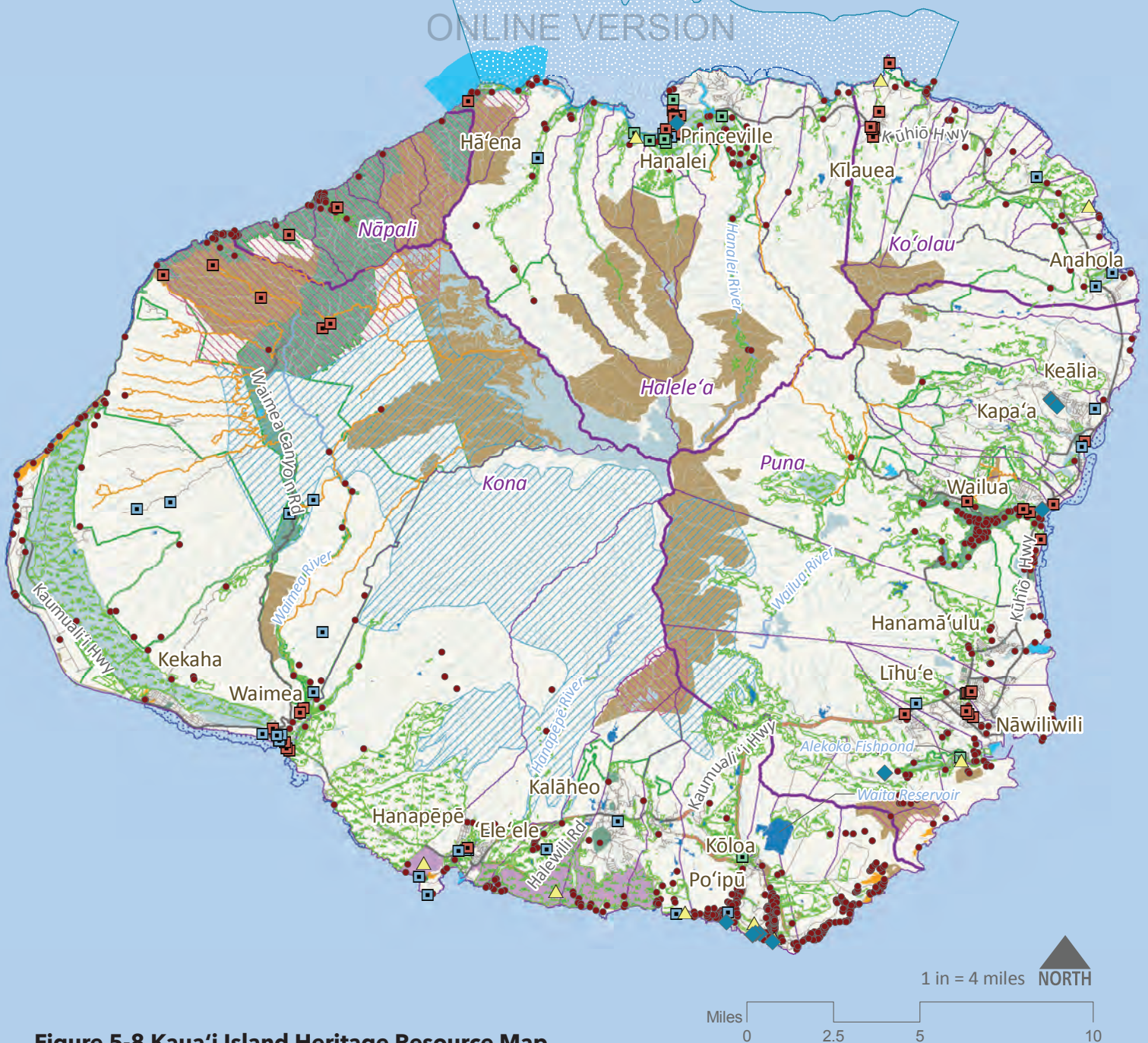


Figure 5-8 Kaua'i Island Heritage Resource Map

- | | | |
|---|---|---|
| <ul style="list-style-type: none"> Registered Historic Sites State National State & National Cultural Features Priority Public Access Points Fish Ponds Streams & Waterbodies Major Roads Roads | <ul style="list-style-type: none"> Historic Belt Road Trails Kōloa Scenic Byway Planning District Boundary Ahupua'a Boundaries Wetlands Coral Reefs Regulated Fishing Areas State & County Parks | <ul style="list-style-type: none"> Preserves Reservoirs Traditional Cultivation Areas Sand Dunes Open Space Acquisition Priorities Critical Habitat Threatened & Endangered Species High Density Very High Density |
|---|---|---|

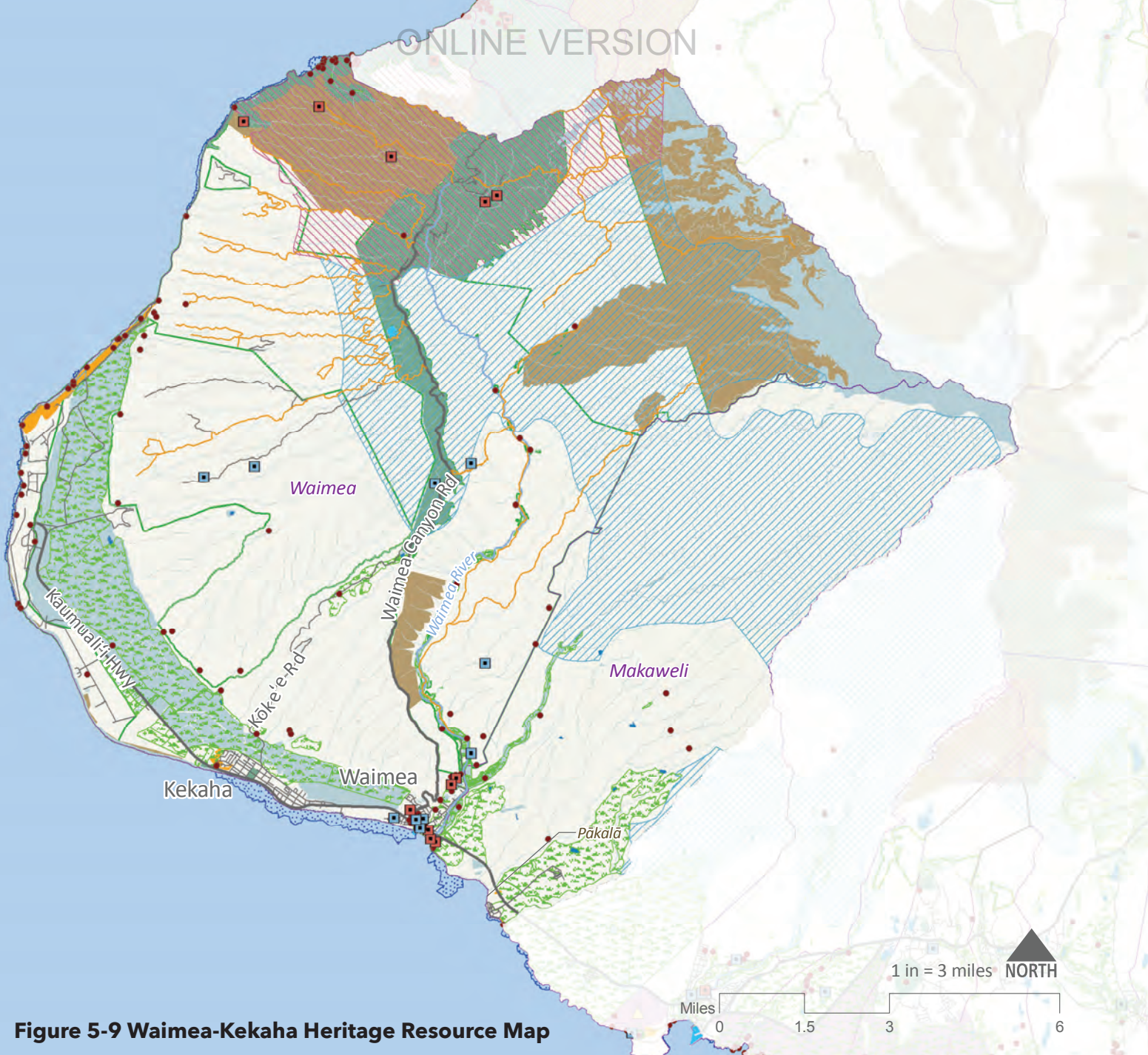


Figure 5-9 Waimea-Kekaha Heritage Resource Map

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

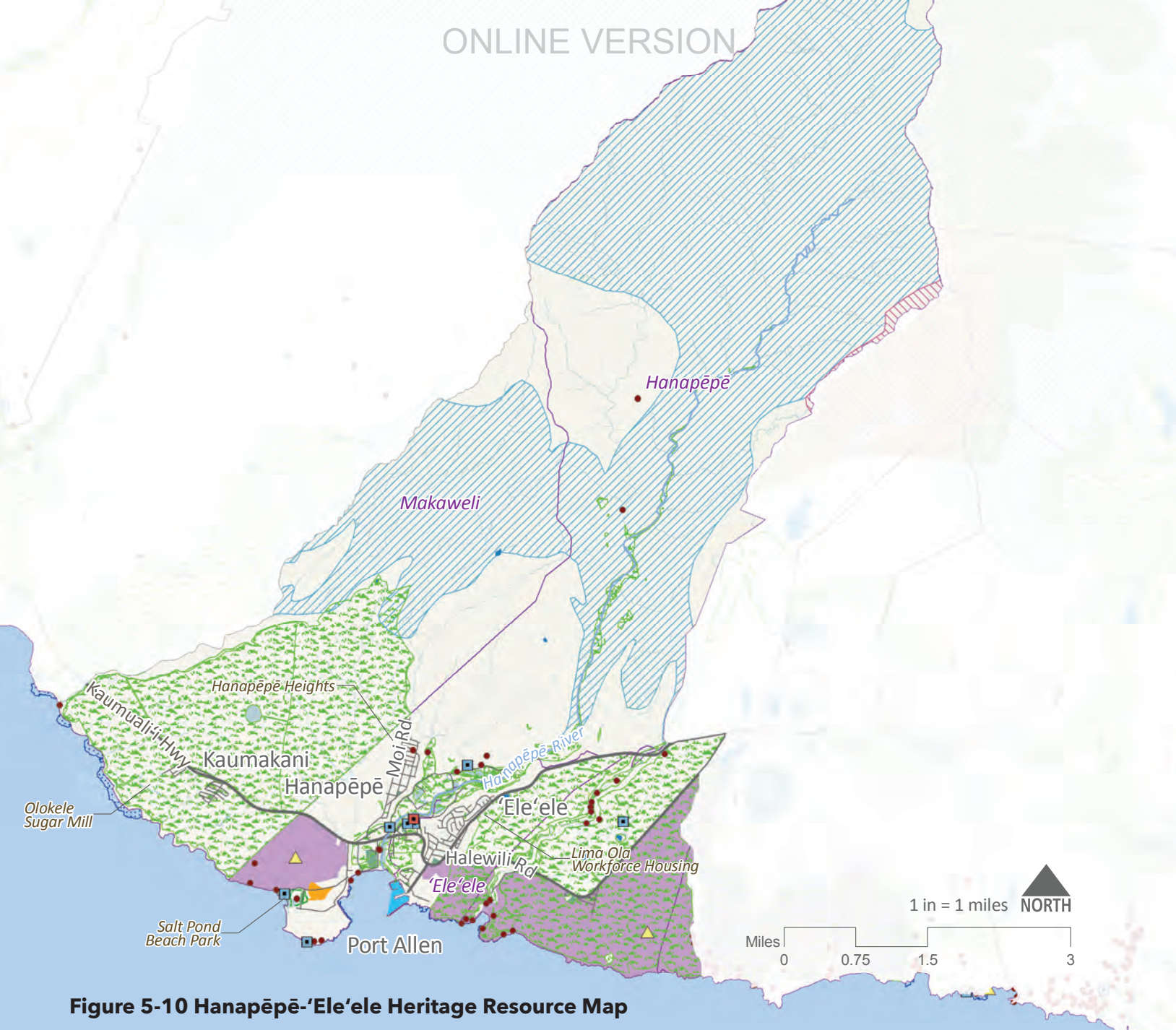
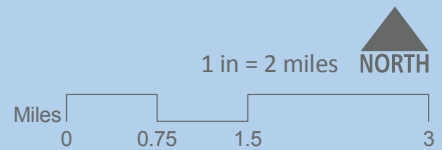


Figure 5-10 Hanapēpē-'Ele'ele Heritage Resource Map

- | | | |
|---|--|--|
| <ul style="list-style-type: none"> Registered Historic Sites State National State & National Cultural Features Priority Public Access Points Fish Ponds Streams & Waterbodies Major Roads Roads | <ul style="list-style-type: none"> Trails Planning District Boundary Ahupua'a Boundaries Wetlands Coral Reefs Regulated Fishing Areas State & County Parks Preserves Reservoirs | <ul style="list-style-type: none"> Traditional Cultivation Areas Sand Dunes Open Space Acquisition Priorities Critical Habitat Threatened & Endangered Species High Density Very High Density |
|---|--|--|



Figure 5-11 South Kauaʻi 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
- 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

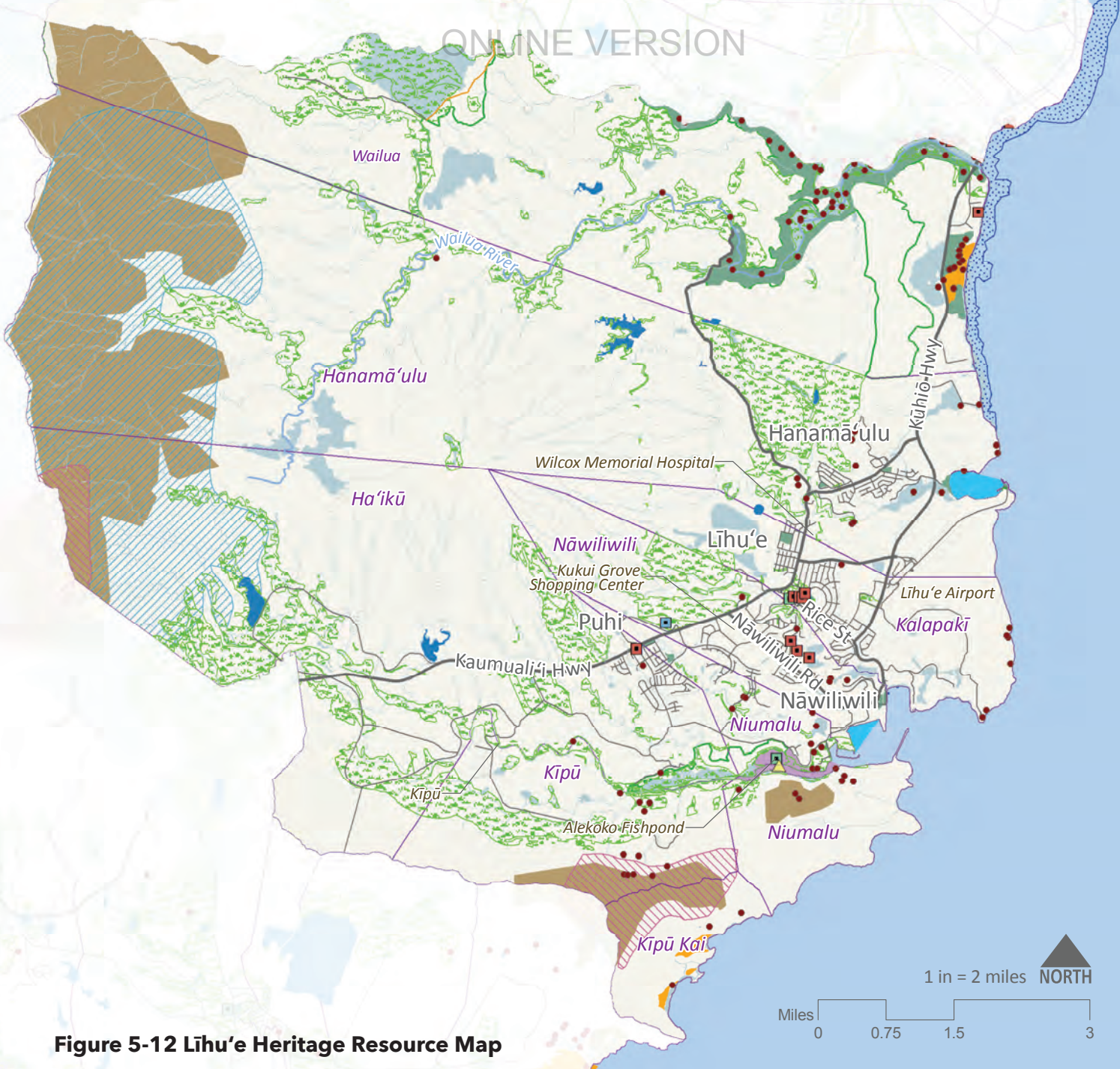


Figure 5-12 Līhu'e Heritage Resource Map

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

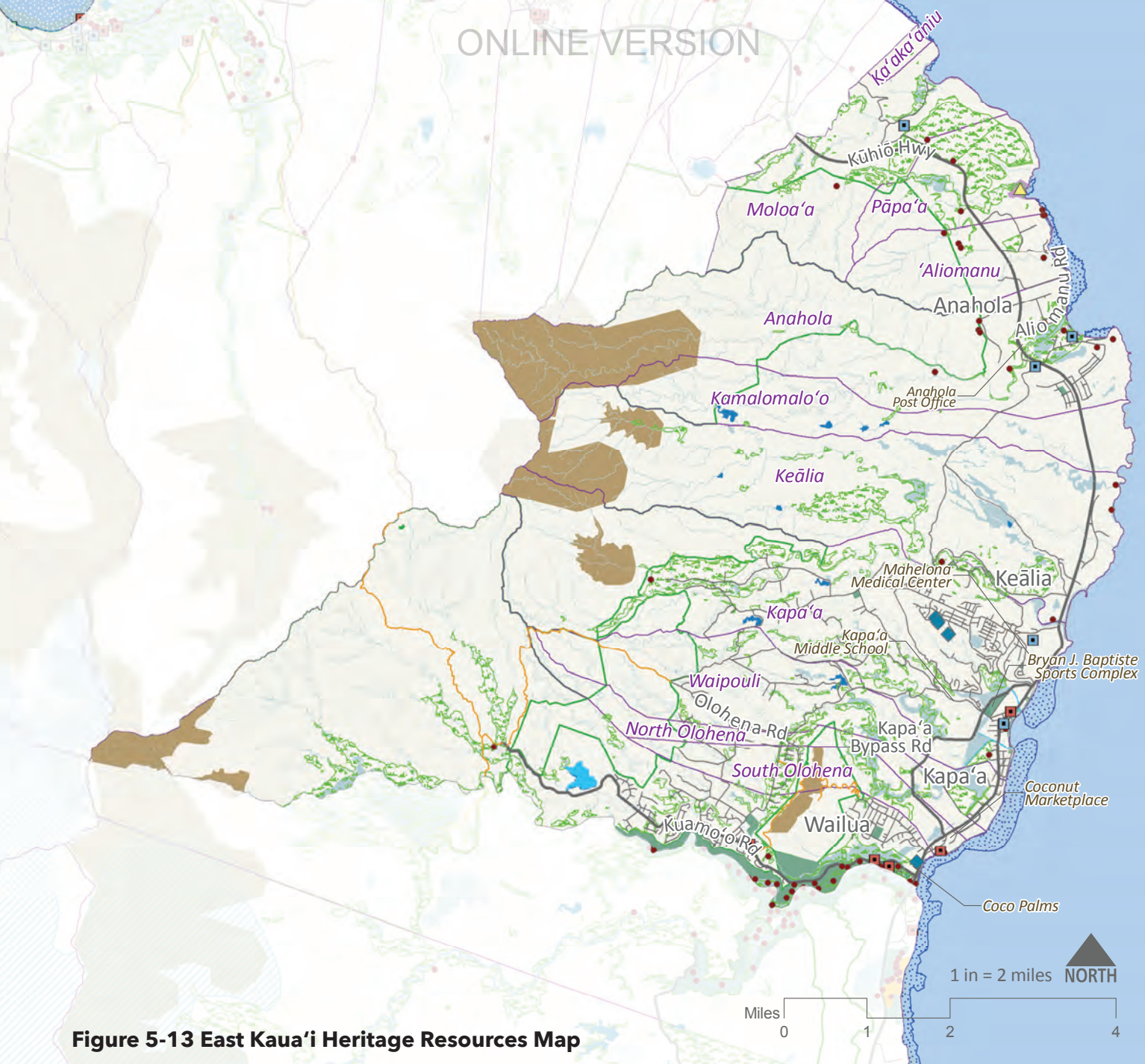


Figure 5-13 East Kauai Heritage Resources Map

Registered Historic Sites

- State
- National
- State & National
- Cultural Features
- ▲ Priority Public Access Points
- ◆ Fish Ponds
- Streams & Waterbodies
- Major Roads
- Roads

- Trails
- Planning District Boundaries
- 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

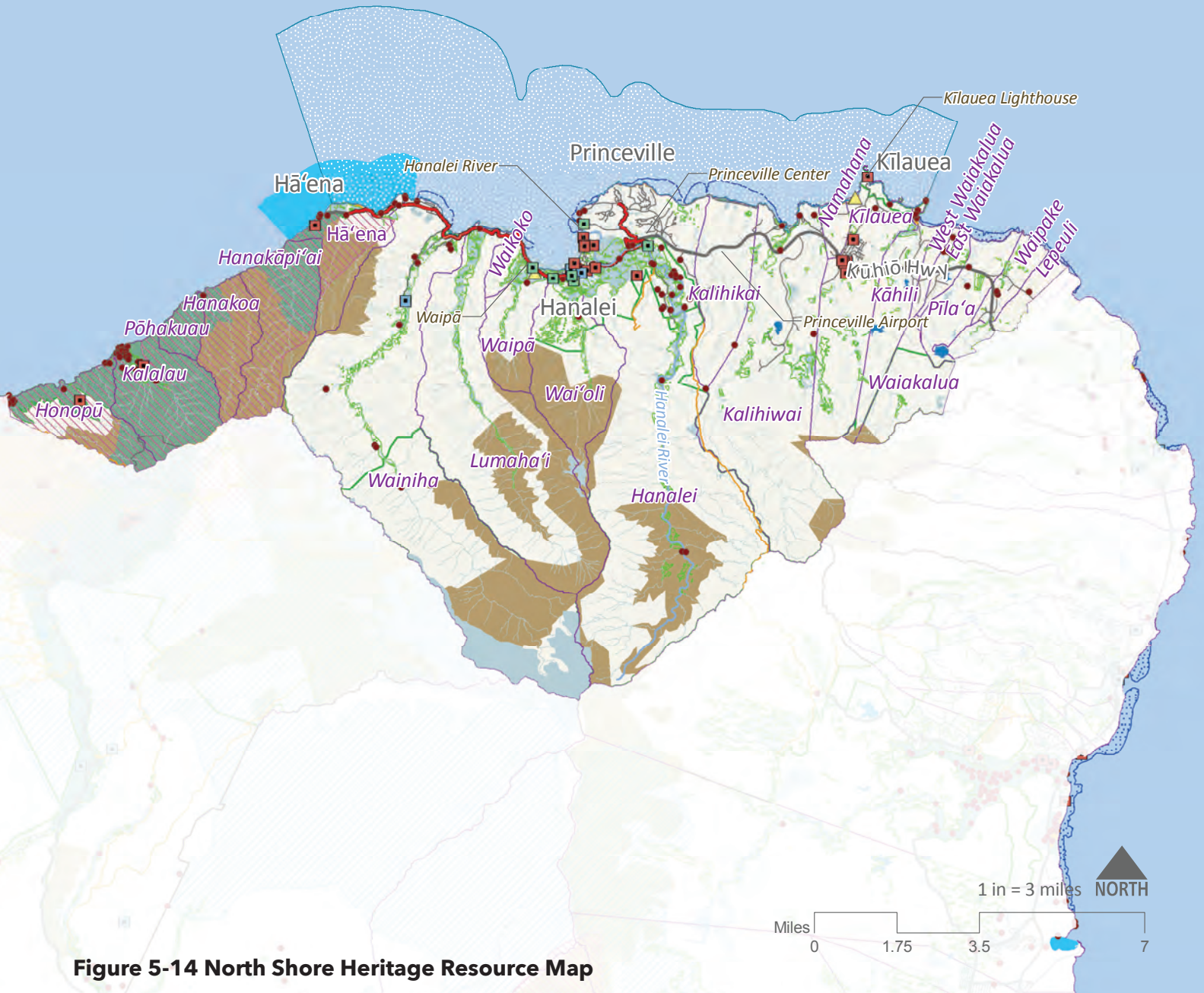


Figure 5-14 North Shore Heritage Resource Map

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, wildfires, and tsunamis. 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 Evacuation 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, 3-foot, and 6-foot sea level rise scenarios for select locations on the island are included in Appendix D.

The Hazard Maps show:

- Dams
- Emergency Shelters
- Critical Facilities
- Major Roads
- Tsunami Evacuation Zones
- Extreme Tsunami Evacuation Zone
- 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 flooding, wildfires, and tsunamis. 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.

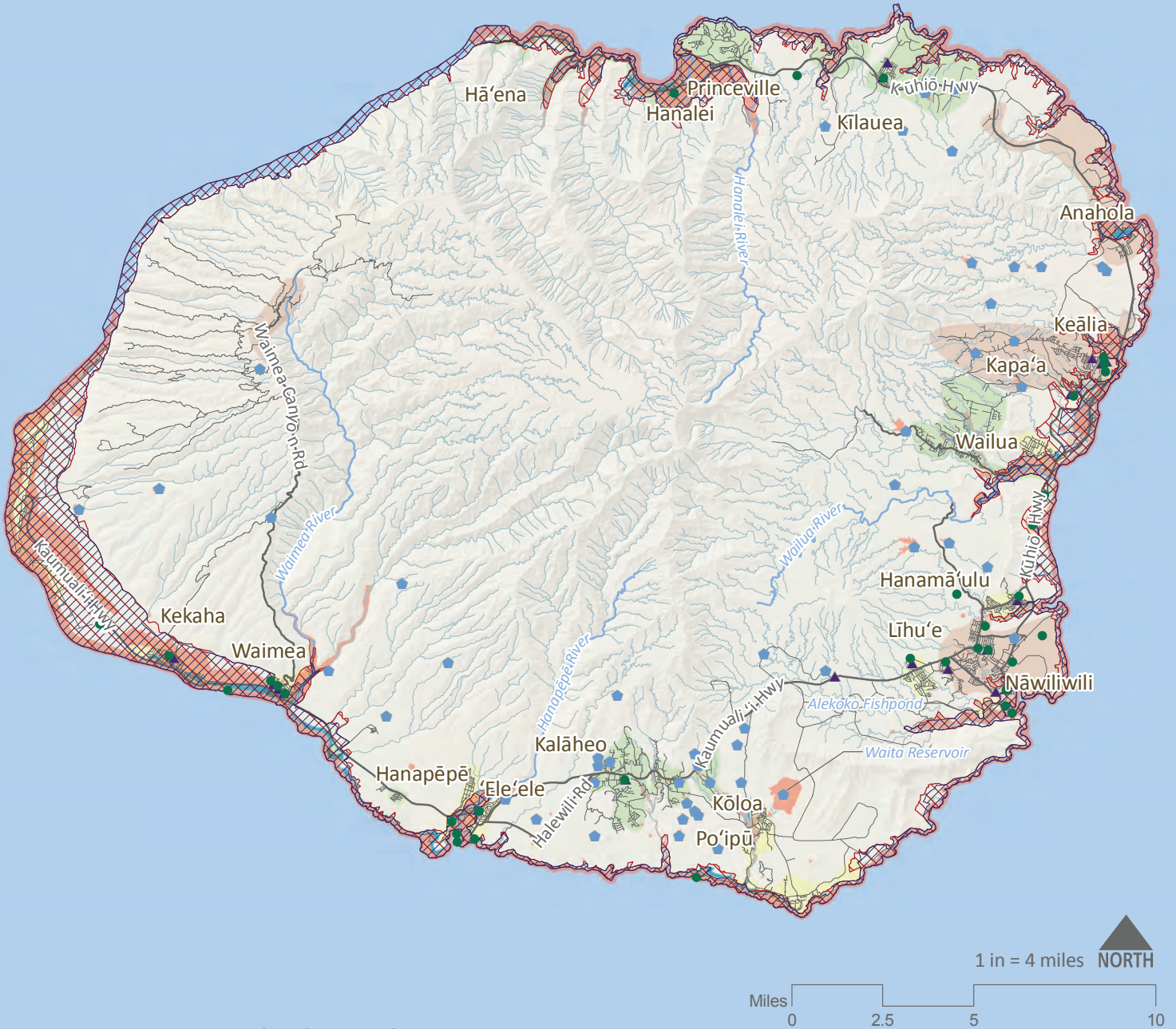


Figure 5-15 Kaua'i Island Hazard Map

- Critical Facilities**
- * Airports
 - * Civic Centers
 - * Harbors
 - * Schools
 - * Correctional Center
 - * 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 5-16 Waimea-Kekaha Hazard Map

Critical Facilities

- * Airports
- * Civic Centers
- * Harbors
- * Schools
- * Correctional Center
- * 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

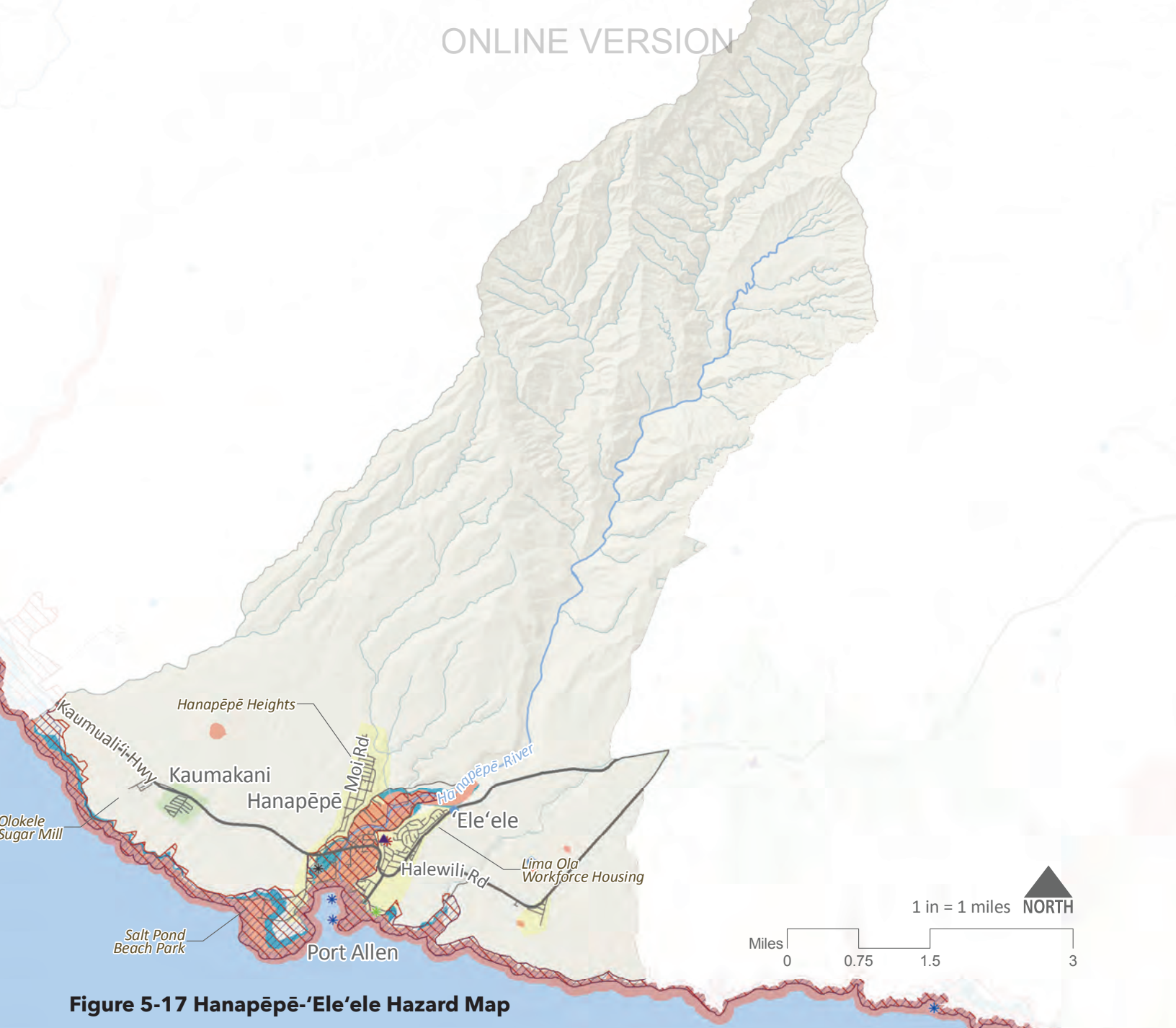


Figure 5-17 Hanapēpē-'Ele'ele Hazard Map

Critical Facilities

- * Airports
- * Civic Centers
- * Harbors
- * Schools
- * Correctional Center
- * Electric Facilities
- * Hospitals
- * Landfill
- * Wastewater Treatment Plants

- ◆ Dams
- ▲ Emergency Shelters
- Streams
- Major Roads
- Roads

- ▨ Tsunami Evacuation Zone
- ▨ Extreme Tsunami Evacuation Zone

- High Risk Flood Zone
- Moderate Risk Flood Zone

Wildfire Risk Rating

- High
- Medium
- Low

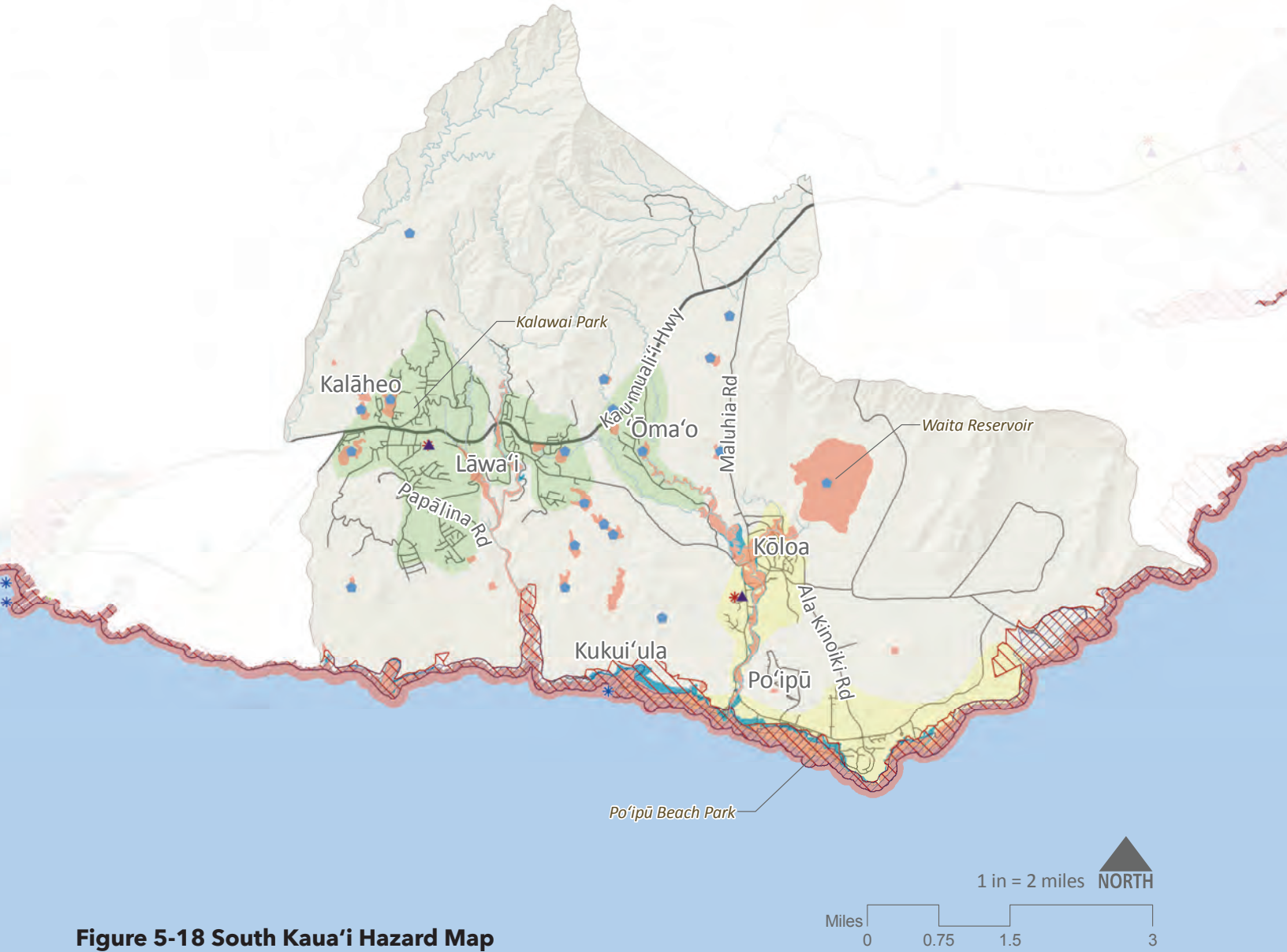


Figure 5-18 South Kaua'i Hazard Map

Critical Facilities

- * Airports
- * Civic Centers
- * Harbors
- * Schools
- * Correctional Center
- * Electric Facilities
- * Hospitals
- * Landfill
- * Wastewater Treatment Plants

- ◆ Dams
- ▲ Emergency Shelters
- Streams
- Major Roads
- Roads
- ▨ Tsunami Evacuation Zone
- ▨ Extreme Tsunami Evacuation Zone

- High Risk Flood Zone
- Moderate Risk Flood Zone
- Wildfire Risk Rating**
- High
- Medium
- Low

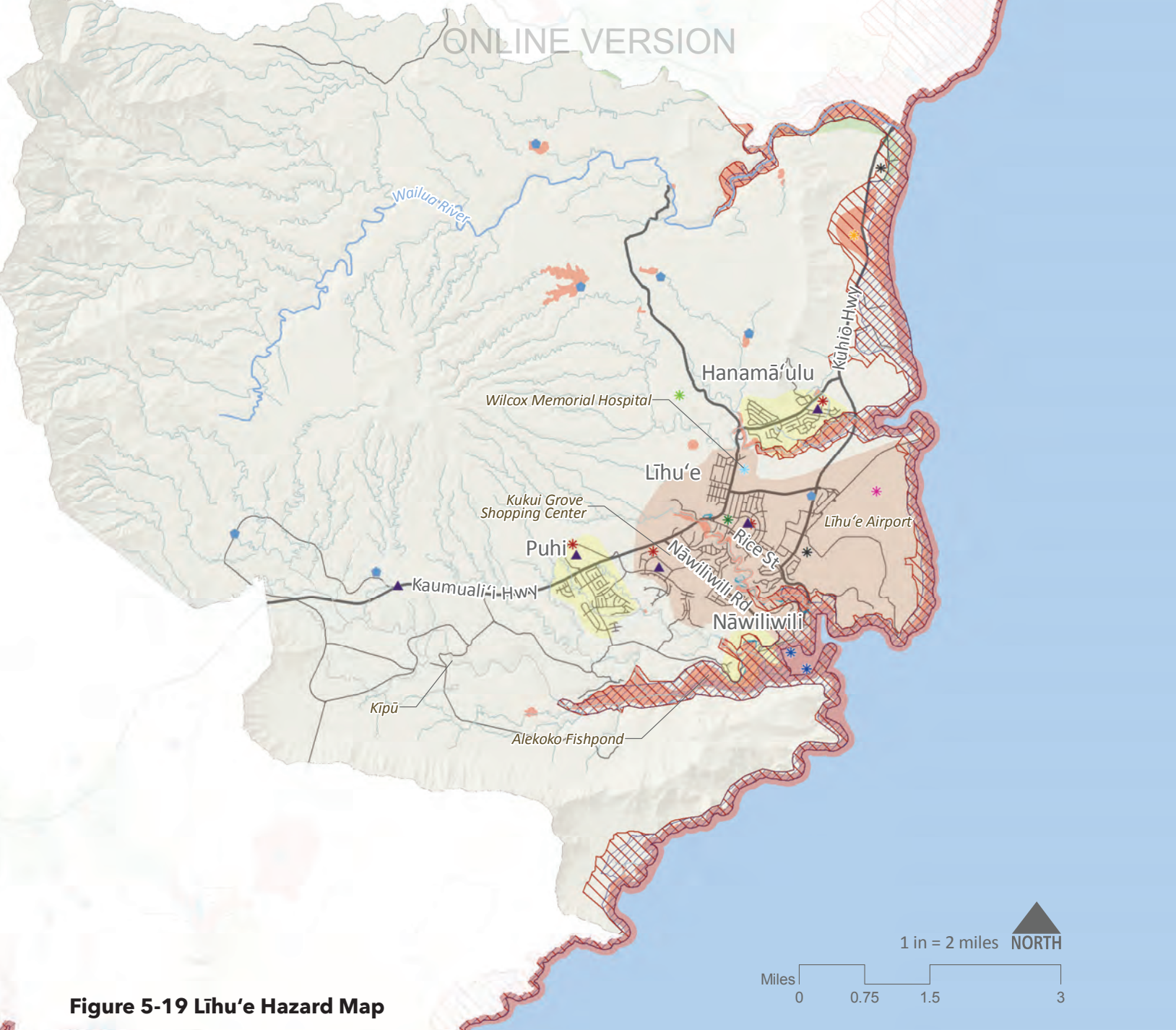


Figure 5-19 Līhu'e Hazard Map

Critical Facilities

- * Airports
- * Civic Centers
- * Harbors
- * Schools
- * Correctional Center
- * Electric Facilities
- * Hospitals
- * Landfill
- * Wastewater Treatment Plants

- Dams
- ▲ Emergency Shelters
- Streams
- Major Roads
- Roads
- ▨ Tsunami Evacuation Zone
- ▨ Extreme Tsunami Evacuation Zone

- High Risk Flood Zone
- Moderate Risk Flood Zone
- Wildfire Risk Rating**
- High
- Medium
- Low

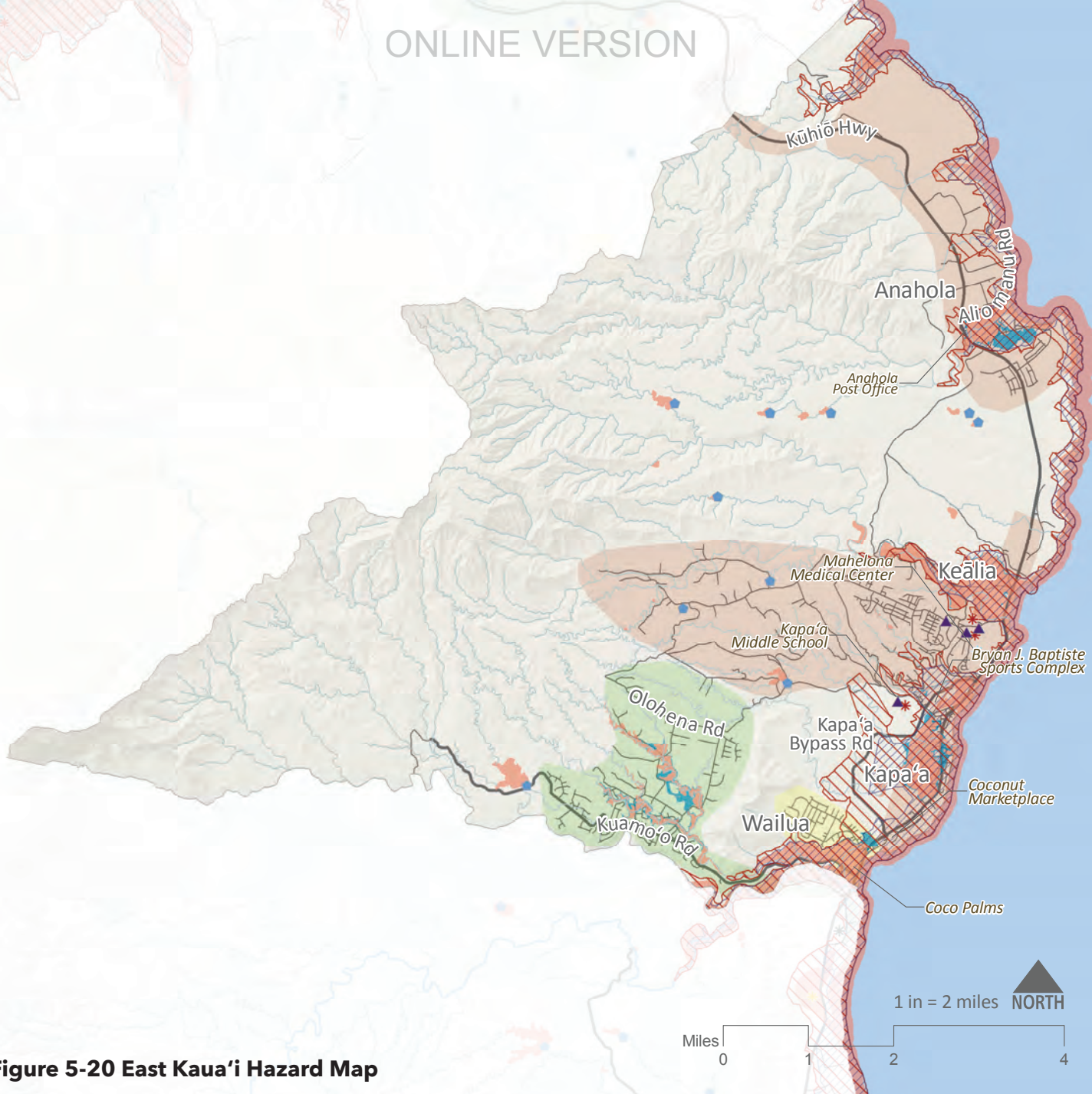


Figure 5-20 East Kauaʻi Hazard Map

Critical Facilities

- * Airports
- * Civic Centers
- * Harbors
- * Schools
- * Correctional Center
- * Electric Facilities
- * Hospitals
- * Landfill
- * Wastewater Treatment Plants

- Dams
- ▲ Emergency Shelters
- Streams
- Major Roads
- Roads
- ▨ Tsunami Evacuation Zone
- ▨ Extreme Tsunami Evacuation Zone

- High Risk Flood Zone
- Moderate Risk Flood Zone
- High Wildfire Risk Rating
- Medium Wildfire Risk Rating
- Low Wildfire Risk Rating

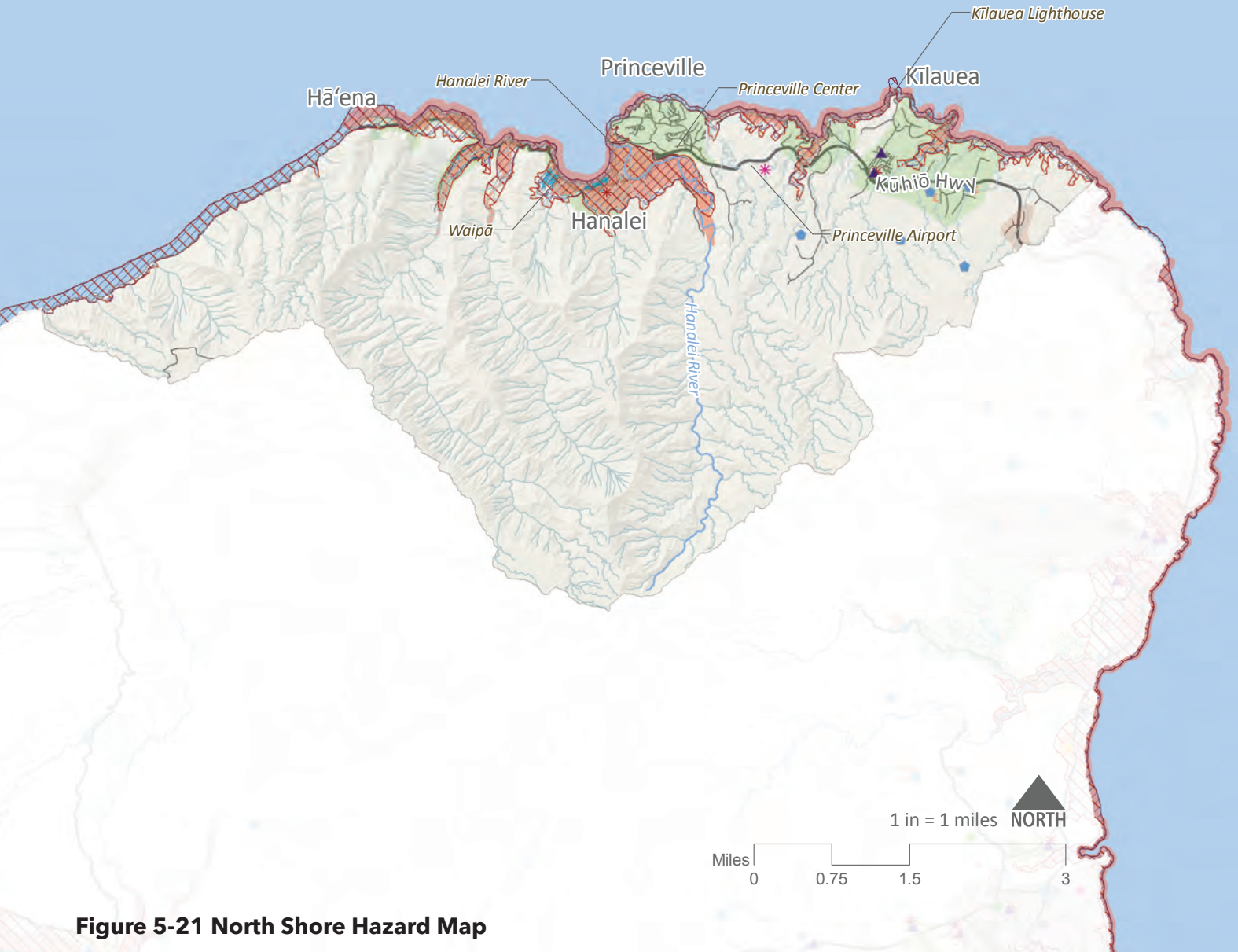


Figure 5-21 North Shore Hazard Map

- | | | |
|-----------------------------|---------------------------------|-----------------------------|
| Critical Facilities | Dams | High Risk Flood Zone |
| Airports | Emergency Shelters | Moderate Risk Flood Zone |
| Civic Centers | Streams | Wildfire Risk Rating |
| Harbors | Major Roads | High |
| Schools | Roads | Medium |
| Correctional Center | Tsunami Evacuation Zone | Low |
| Electric Facilities | Extreme Tsunami Evacuation Zone | |
| Hospitals | | |
| Landfill | | |
| Wastewater Treatment Plants | | |

5.5 INFRASTRUCTURE MAPS

The 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
- Private Water System Service Areas
- County Water System Service Areas
- Wastewater Treatment Plant
- Sewer Pump Stations
- County Wastewater System Service Areas
- Private Wastewater Service Areas
- Power Plants
- State Land Use District Urban Designated Lands
- Planning District Boundary
- Major Roads
- 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.

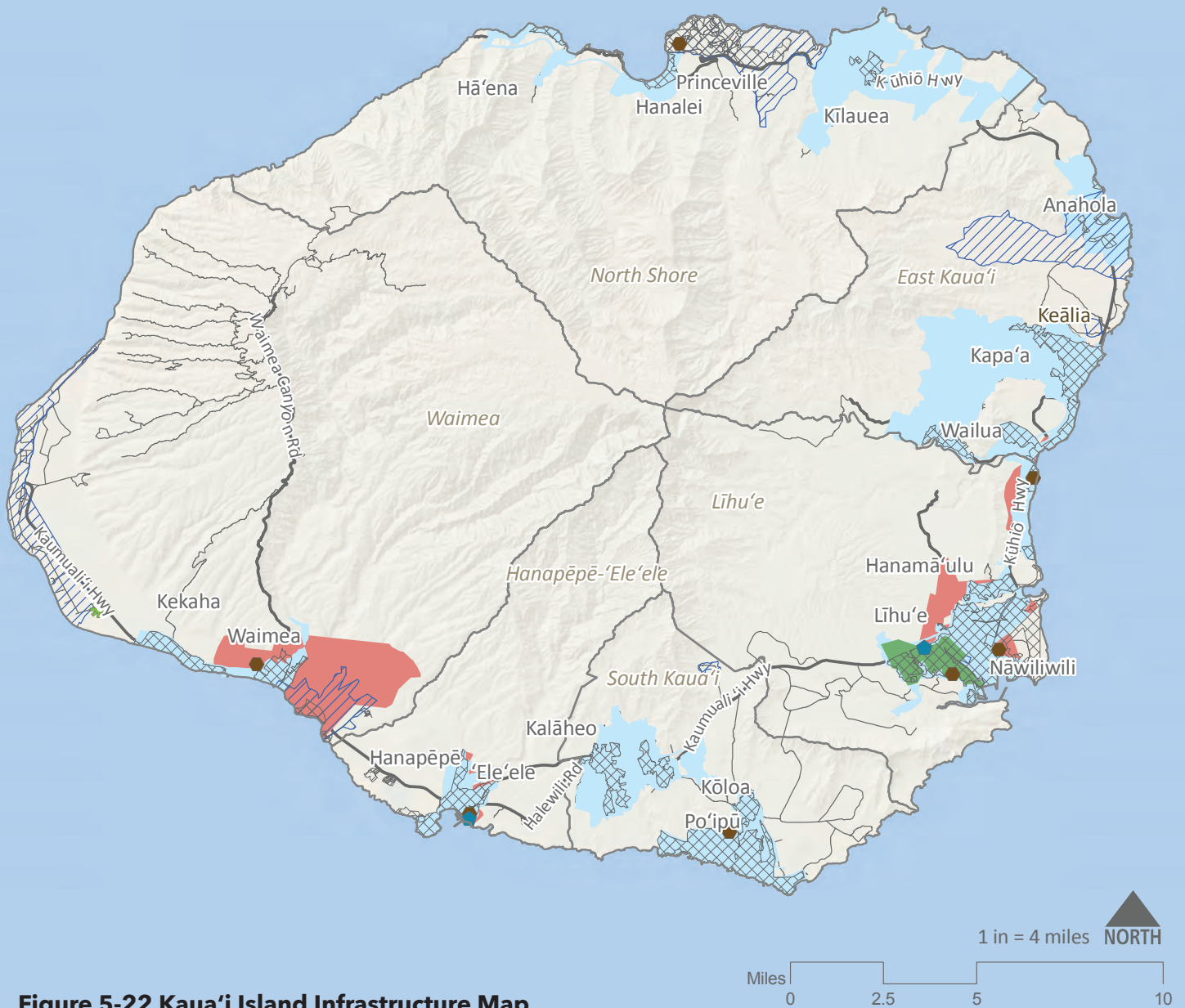


Figure 5-22 Kauai Island Infrastructure Map

- Landfill
- Power Plants
- Waste Water Treatment Plant
- Private Water System Service Area
- County Water System Service Area
- County Wastewater System Service Area
- Private Wastewater Service Area
- State Land Use District Urban Designated Lands
- Planning District Boundary
- Major Roads
- Roads

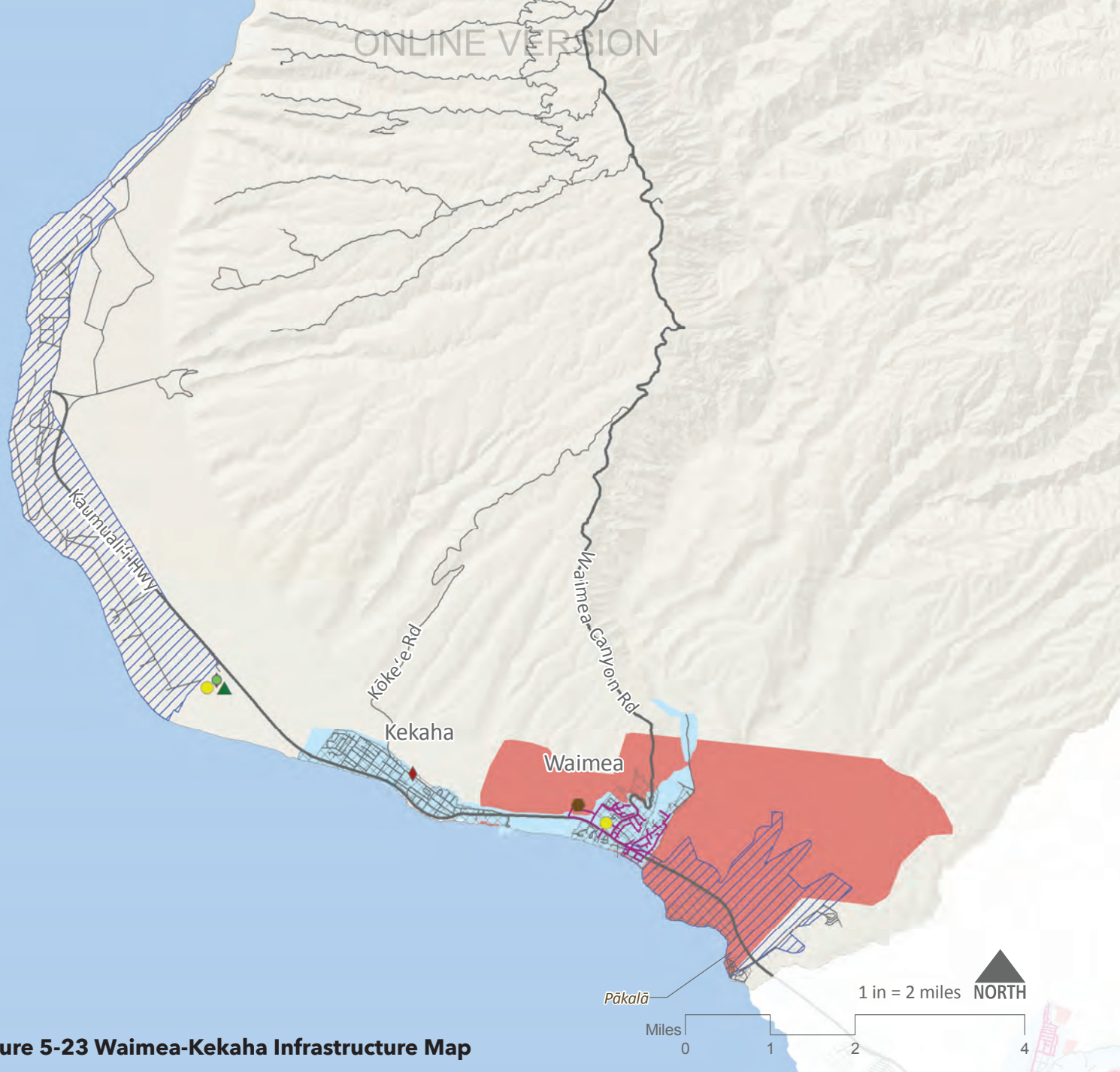


Figure 5-23 Waimea-Kekaha Infrastructure Map

Solid Waste Management Facilities

- Drop-off Recycling Center
- Refuse Transfer Station
- ▲ Green Waste Diversion Site
- ◆ Deposit Beverage Container Redemption Center

Water Facilities

- ▨ Private Water System Service Area
- ▭ County Water System Service Area

Wastewater Facilities

- Wastewater Treatment Plant
- Sewer Pump Stations
- Sewerlines
- ▭ County Wastewater System Service Area

Electric Facilities

- ◆ Power Plants
- ▨ State Land Use District Urban Designated Lands
- ▭ Planning District Boundary
- Major Roads
- Roads

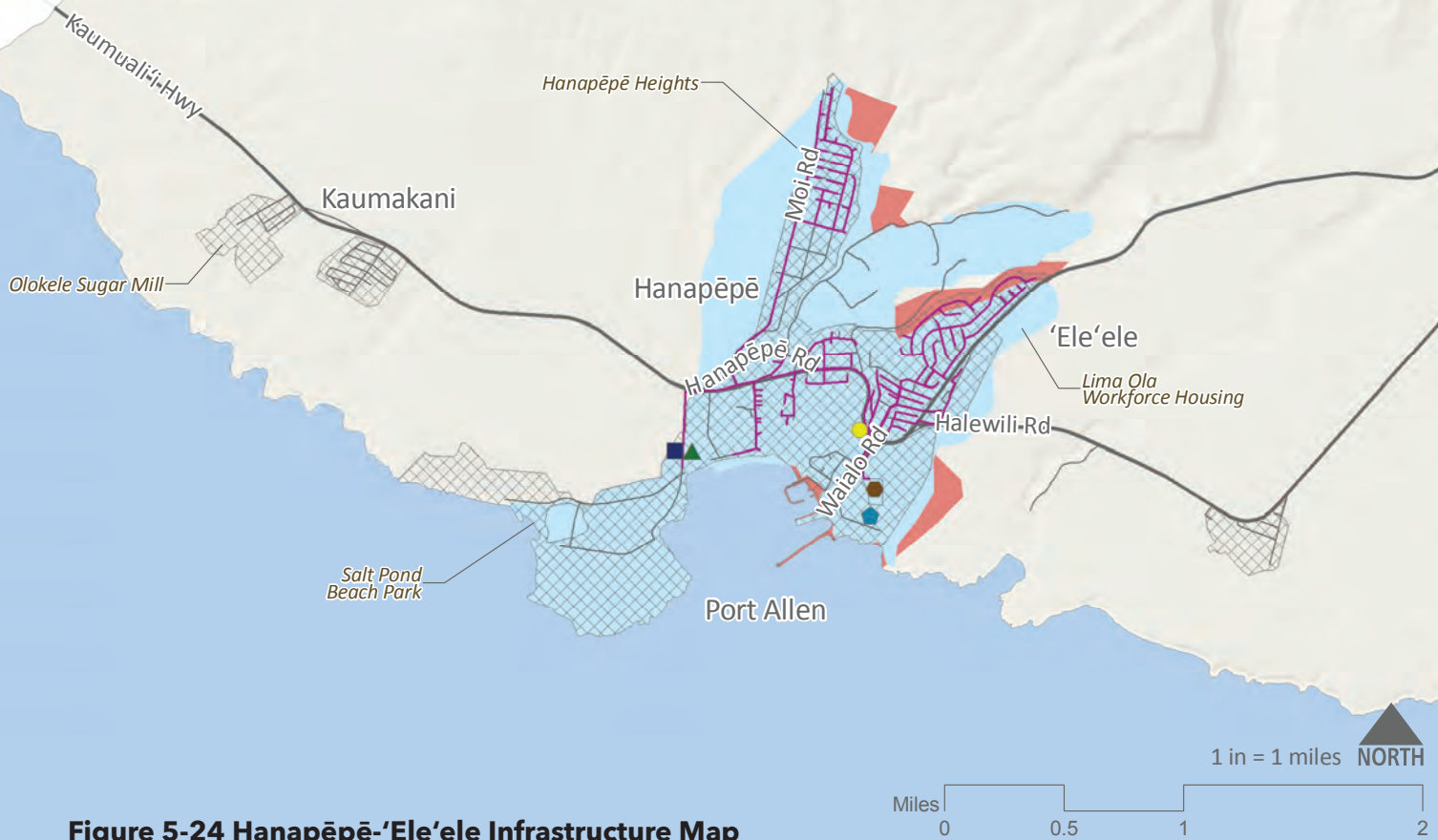


Figure 5-24 Hanapēpē-'Ele'ele Infrastructure Map

Solid Waste Management Facilities

- Drop-off Recycling Center
- Refuse Transfer Station
- ▲ Green Waste Diversion Site
- ◆ Deposit Beverage Container Redemption Center

Water Facilities

- Private Water System Service Area
- County Water System Service Area

Wastewater Facilities

- Wastewater Treatment Plant
- Sewer Pump Stations
- Sewerlines
- County Wastewater System Service Area

Electric Facilities

- ◆ Power Plants
- State Land Use District Urban Designated Lands
- Planning District Boundary
- Major Roads
- Roads

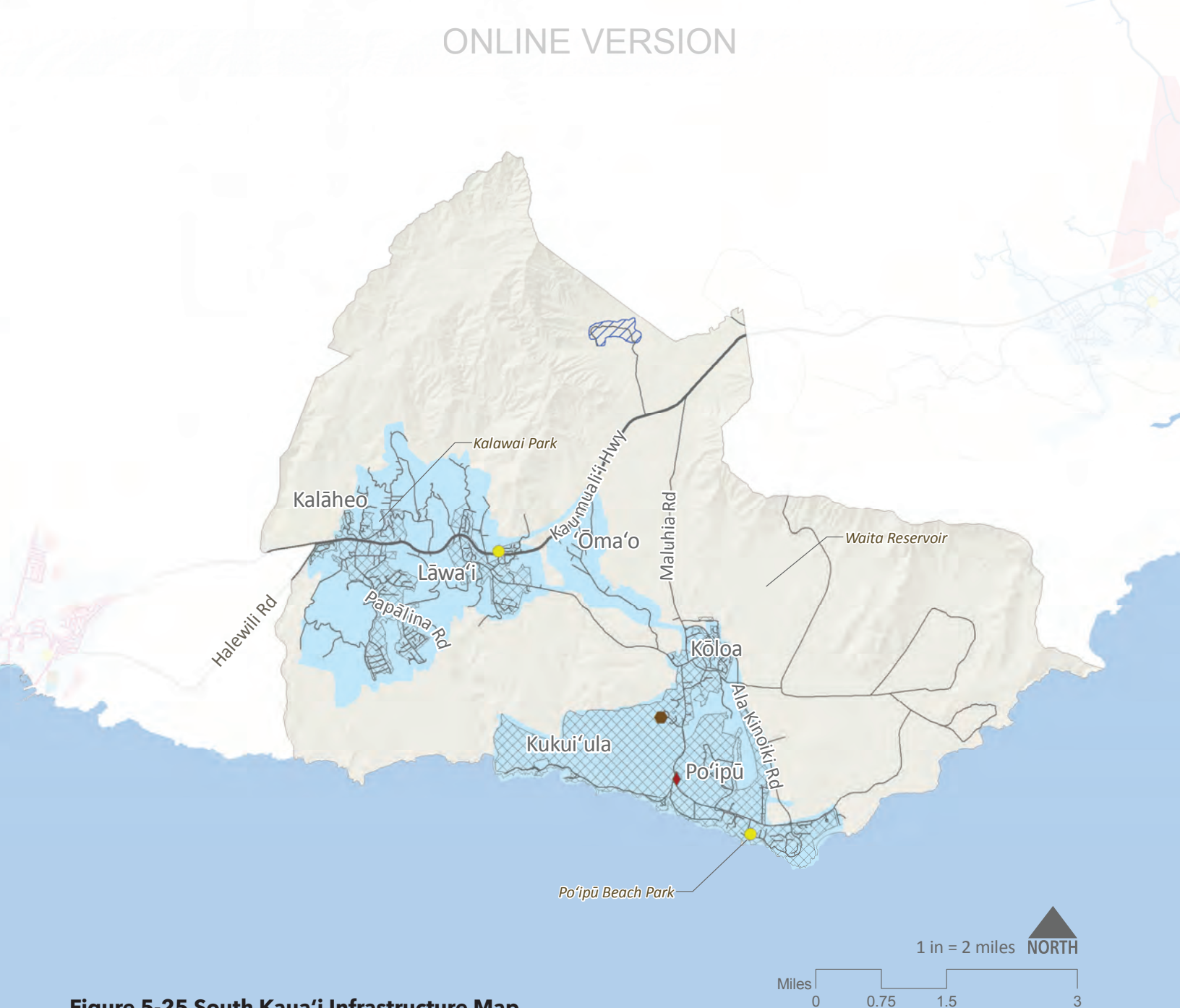


Figure 5-25 South Kauai Infrastructure Map

Solid Waste Management Facilities

- Drop-off Recycling Center
- Refuse Transfer Station
- ▲ Green Waste Diversion Site
- ◆ Deposit Beverage Container Redemption Center

Water Facilities

- ▨ Private Water System Service Area
- County Water System Service Area

Wastewater Facilities

- Wastewater Treatment Plant
- Sewer Pump Stations
- Sewerlines
- County Wastewater System Service Area

Electric Facilities

- ◆ Power Plants
- ▨ State Land Use District Urban Designated Lands
- Planning District Boundary
- Major Roads
- Roads

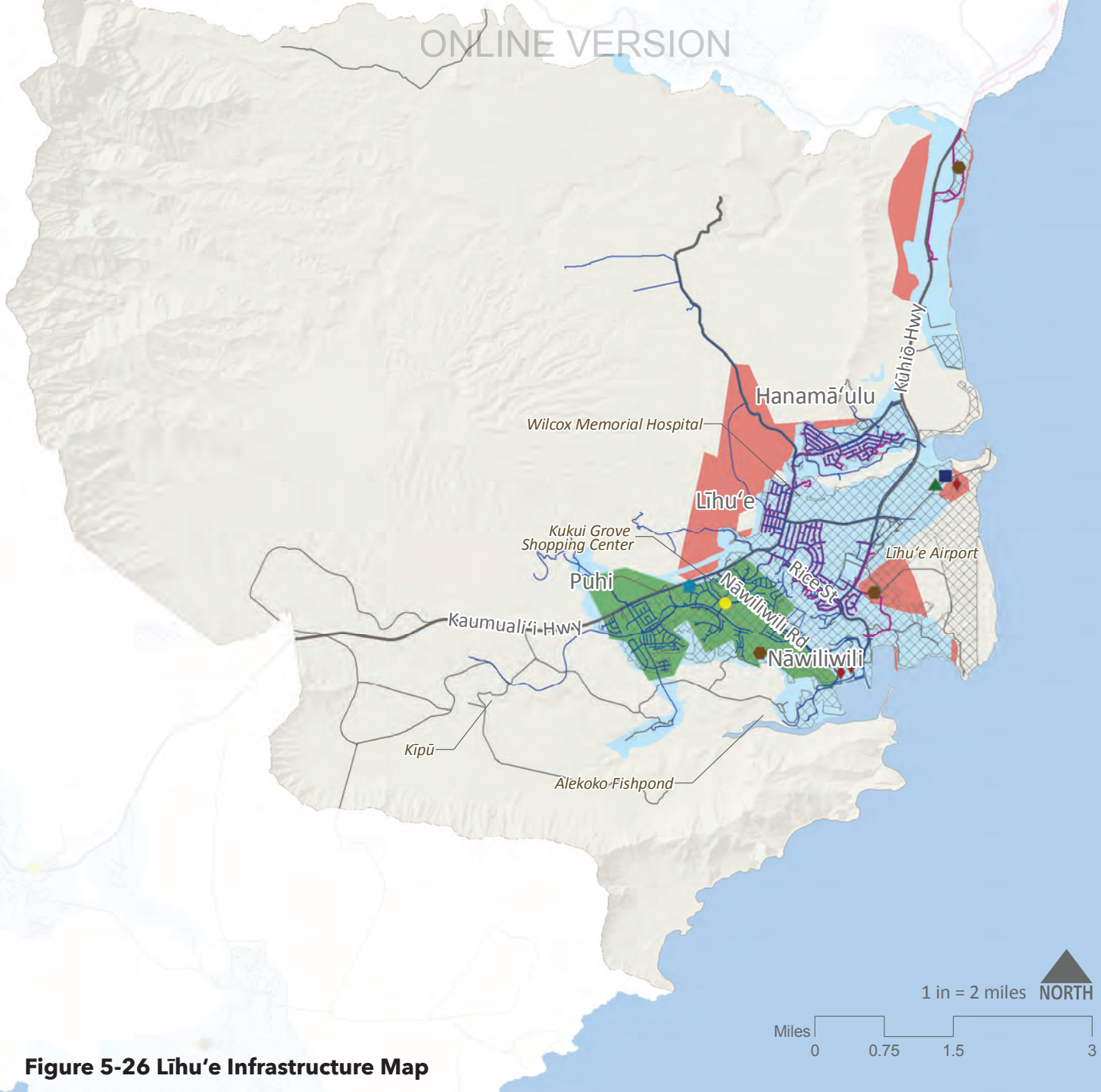


Figure 5-26 Līhu'e Infrastructure Map

Solid Waste Management Facilities

- Drop-off Recycling Center
- Refuse Transfer Station
- ▲ Green Waste Diversion Site
- ◆ Deposit Beverage Container Redemption Center

Water Facilities

- ▨ Private Water System Service Area
- ▭ County Water System Service Area

Wastewater Facilities

- Wastewater Treatment Plant
- Sewer Pump Stations
- Sewerlines
- ▭ County Wastewater System Service Area

Electric Facilities

- ◆ Power Plants
- ▨ State Land Use District Urban Designated Lands
- ▭ Planning District Boundary
- Major Roads
- Roads

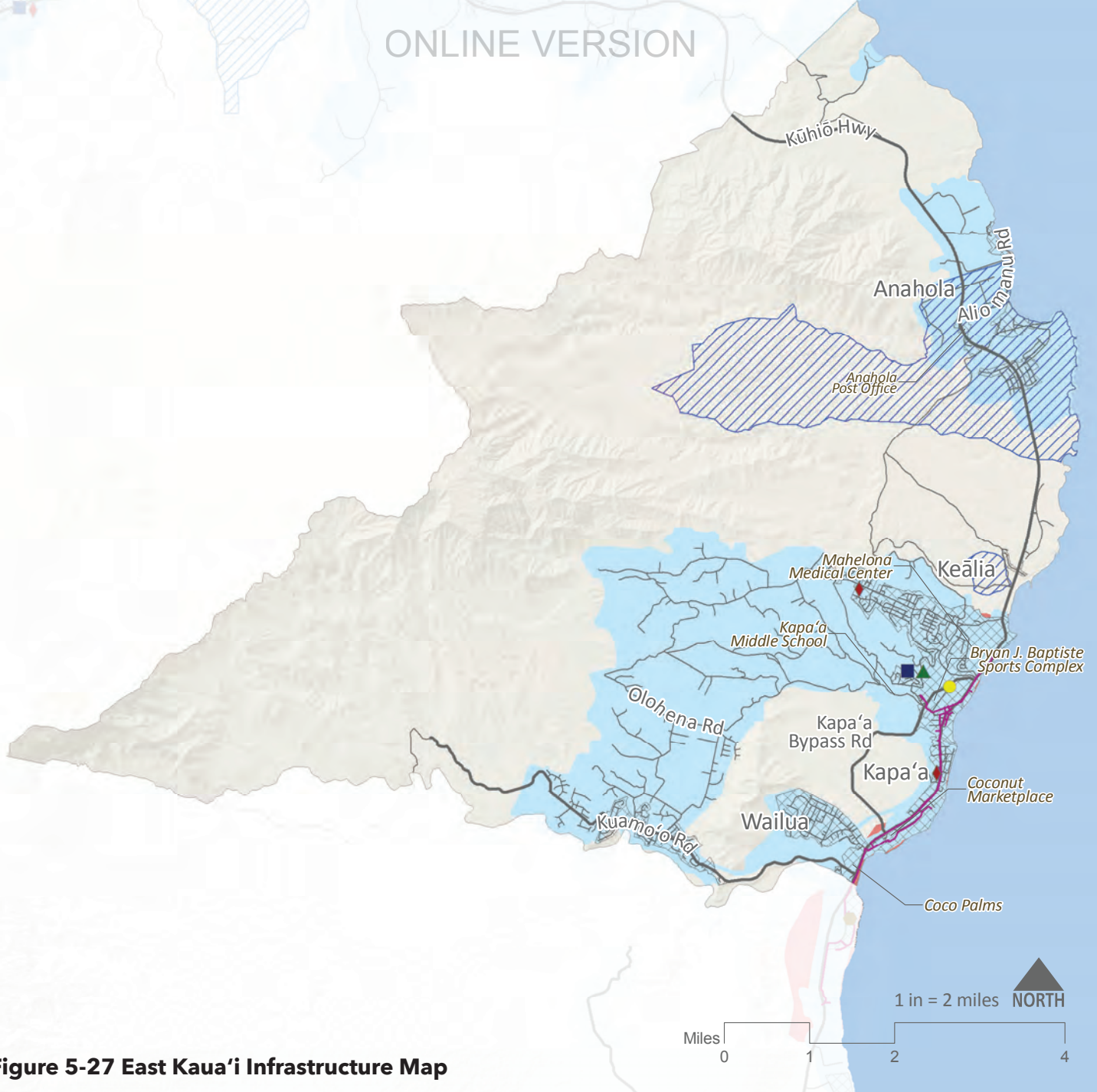


Figure 5-27 East Kauaʻi Infrastructure Map

Solid Waste Management Facilities

- Drop-off Recycling Center
- Refuse Transfer Station
- ▲ Green Waste Diversion Site
- ◆ Deposit Beverage Container Redemption Center

Water Facilities

- ▨ Private Water System Service Area
- County Water System Service Area

Wastewater Facilities

- Wastewater Treatment Plant
- Sewer Pump Stations
- Sewerlines
- County Wastewater System Service Area

Electric Facilities

- ◆ Power Plants
- ▨ State Land Use District Urban Designated Lands
- Planning District Boundary
- Major Roads
- Roads

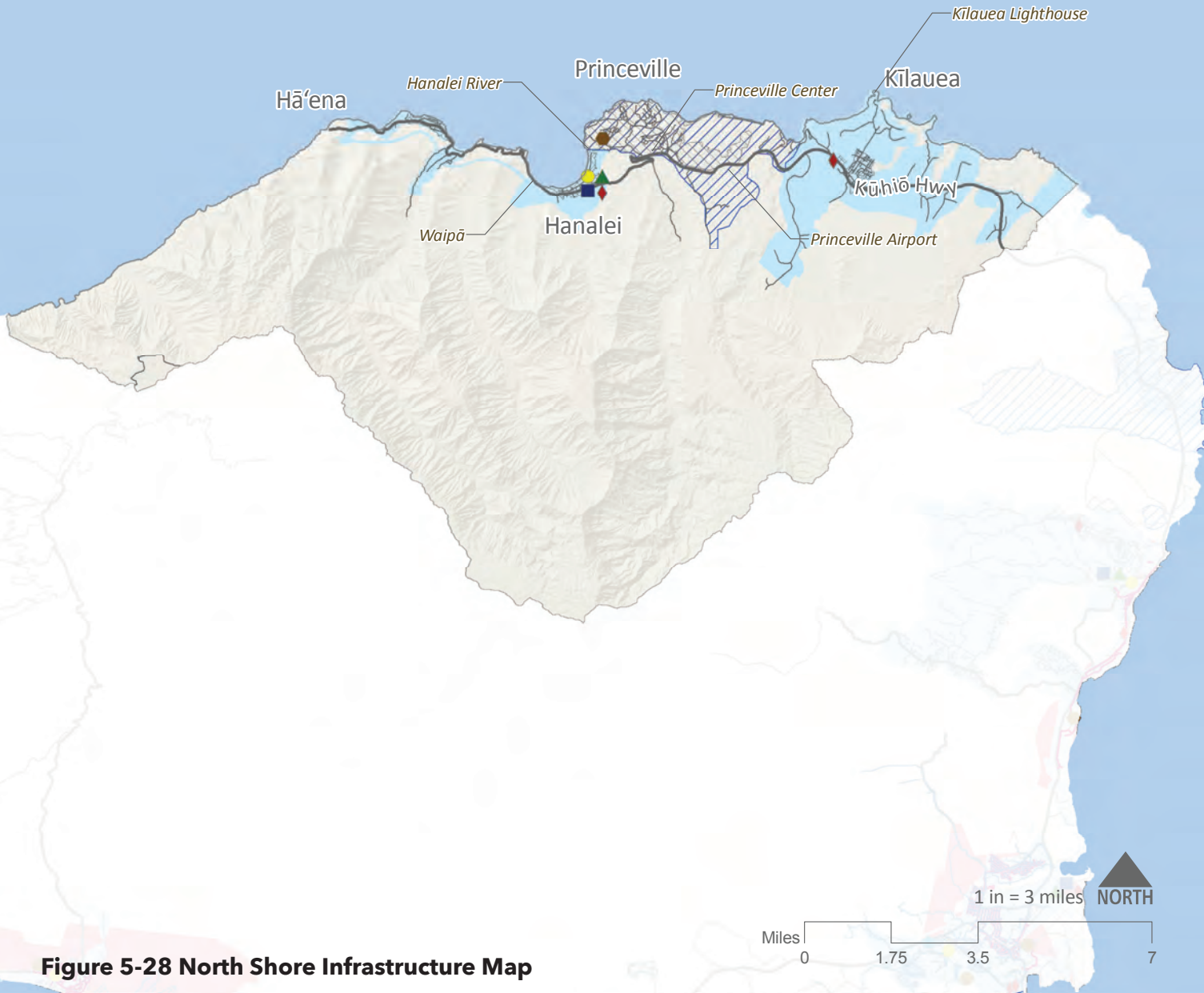


Figure 5-28 North Shore Infrastructure Map

Solid Waste Management Facilities

- Drop-off Recycling Center
- Refuse Transfer Station
- ▲ Green Waste Diversion Site
- ◆ Deposit Beverage Container Redemption Center

Water Facilities

- ▨ Private Water System Service Area
- County Water System Service Area

Wastewater Facilities

- Wastewater Treatment Plant
- Sewer Pump Stations
- Sewerlines
- County Wastewater 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

The 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
- Civic Centers
- Correctional Center
- Airports
- Fire Stations
- Parks
- Planning District Boundaries
- Major Roads
- Extreme Tsunami Evacuation Zones

Purposes of the Public Facilities Maps

The purposes of the Public Facilities Maps are 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, services, or mitigation plans for protection or relocation. They can also help ensure that future development is supported by adequate facilities.
- To be referenced in preparing Community Plans and Functional Plans.

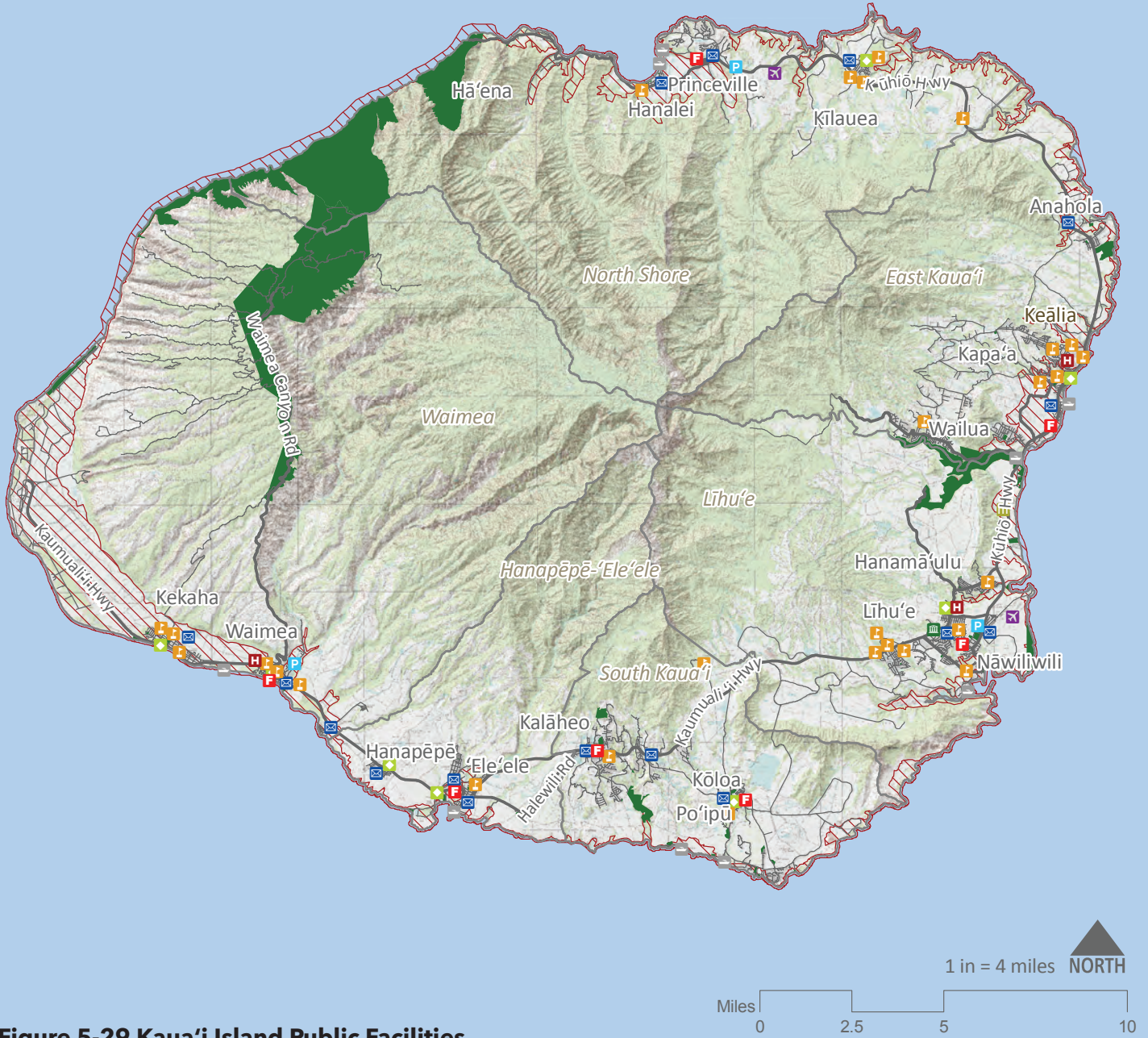


Figure 5-29 Kauai Island Public Facilities

- | | | |
|----------------------|---------------------------------|-------|
| Neighborhood Centers | Correctional Center | 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 | |

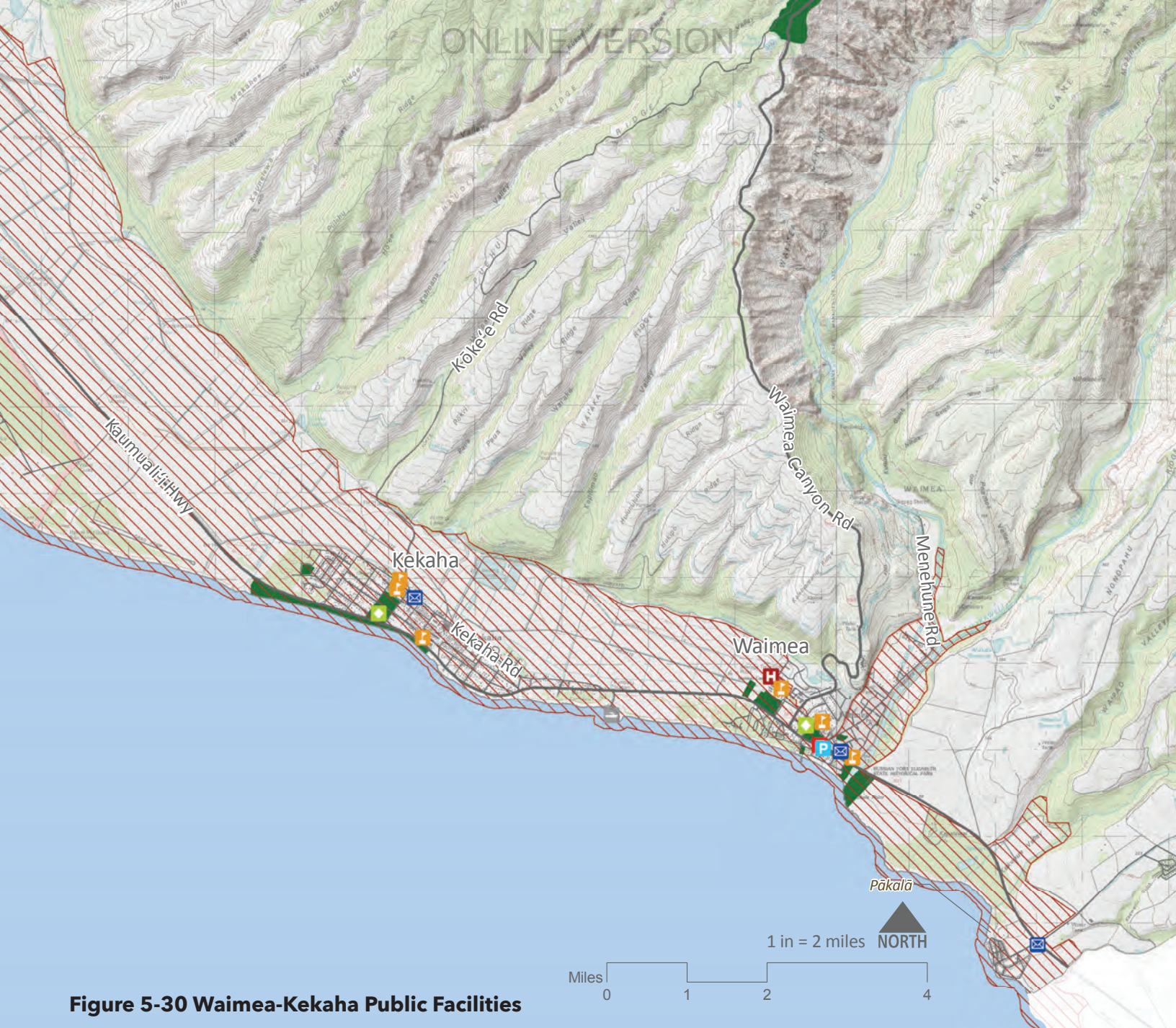


Figure 5-30 Waimea-Kekaha Public Facilities

- Neighborhood Centers
- Post Offices
- Schools
- Police Stations
- Harbors
- Hospitals
- Civic Centers
- Correctional Center
- Airports
- Fire Stations
- Parks and Recreation
- Planning District Boundary
- Extreme Tsunami Evacuation Zone
- Roads
- Major Roads

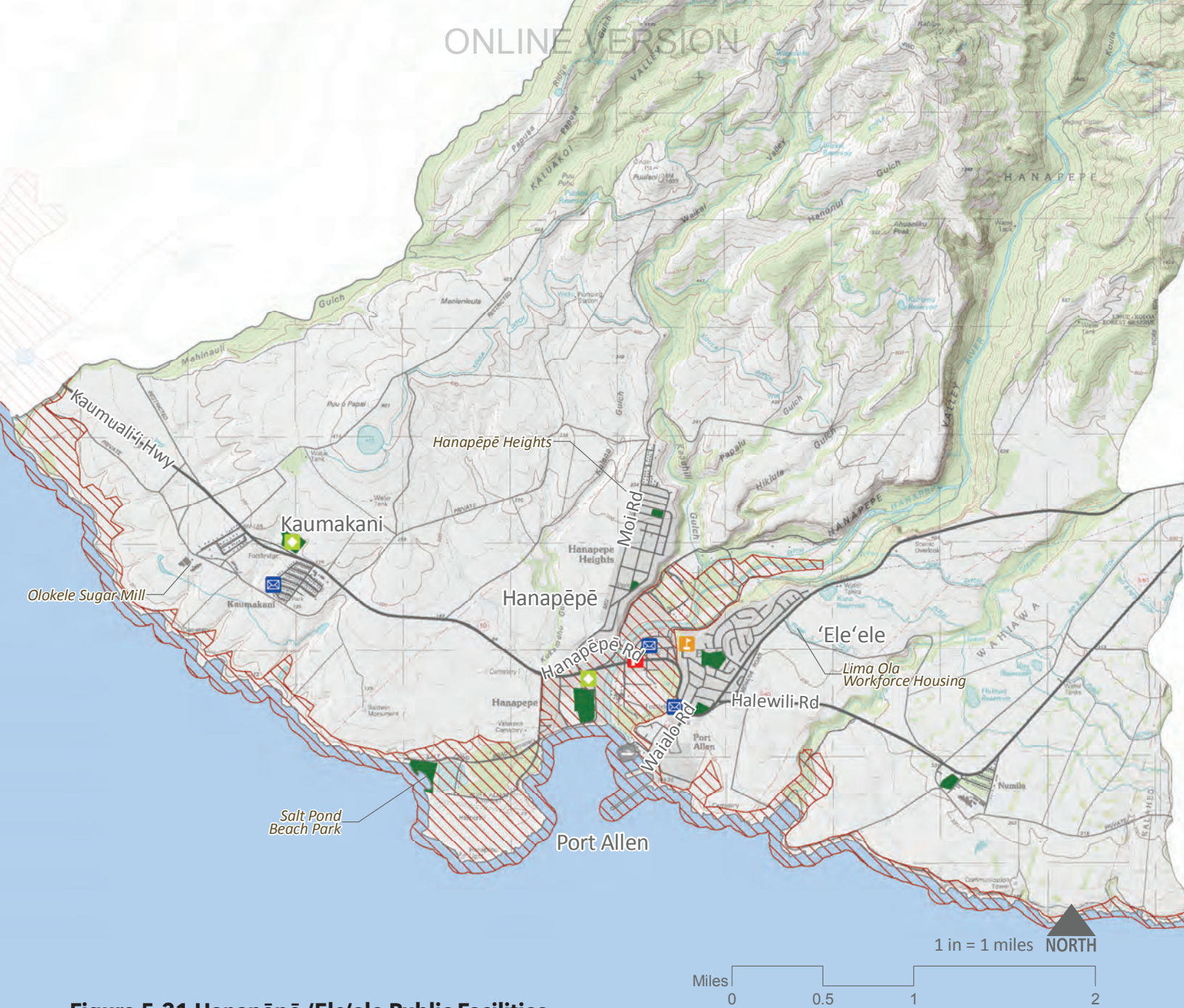

















Figure 5-31 Hanapēpē-'Ele'ele Public Facilities

- | | | |
|----------------------|---------------------------------|-------|
| Neighborhood Centers | Correctional Center | 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 Kauai Public Facilities

-  Neighborhood Centers
-  Post Offices
-  Schools
-  Police Stations
-  Harbors
-  Hospitals
-  Civic Centers
-  Correctional Center
-  Airports
-  Fire Stations
-  Parks and Recreation
-  Planning District Boundary
-  Extreme Tsunami Evacuation Zone
-  Roads
-  Major Roads

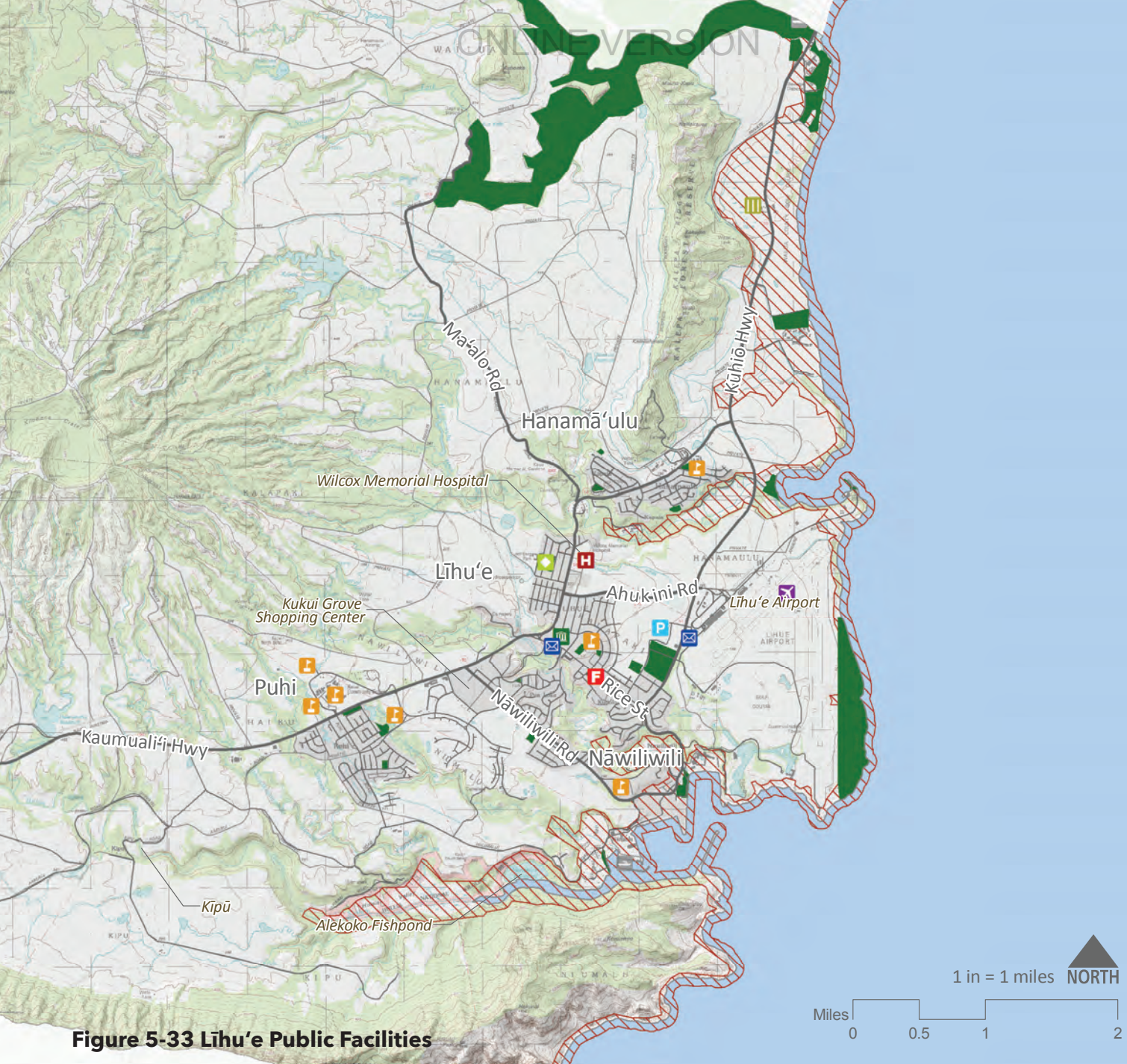


Figure 5-33 Lihue Public Facilities

- | | | |
|----------------------|---------------------------------|-------|
| Neighborhood Centers | Correctional Center | 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 | |



- Neighborhood Centers
- Post Offices
- Schools
- Police Stations
- Harbors
- Hospitals
- Civic Centers
- Parks and Recreation
- Planning District Boundary
- Extreme Tsunami Evacuation Zone
- Major Roads
- Roads
- Correctional Center
- Airports
- Fire Stations

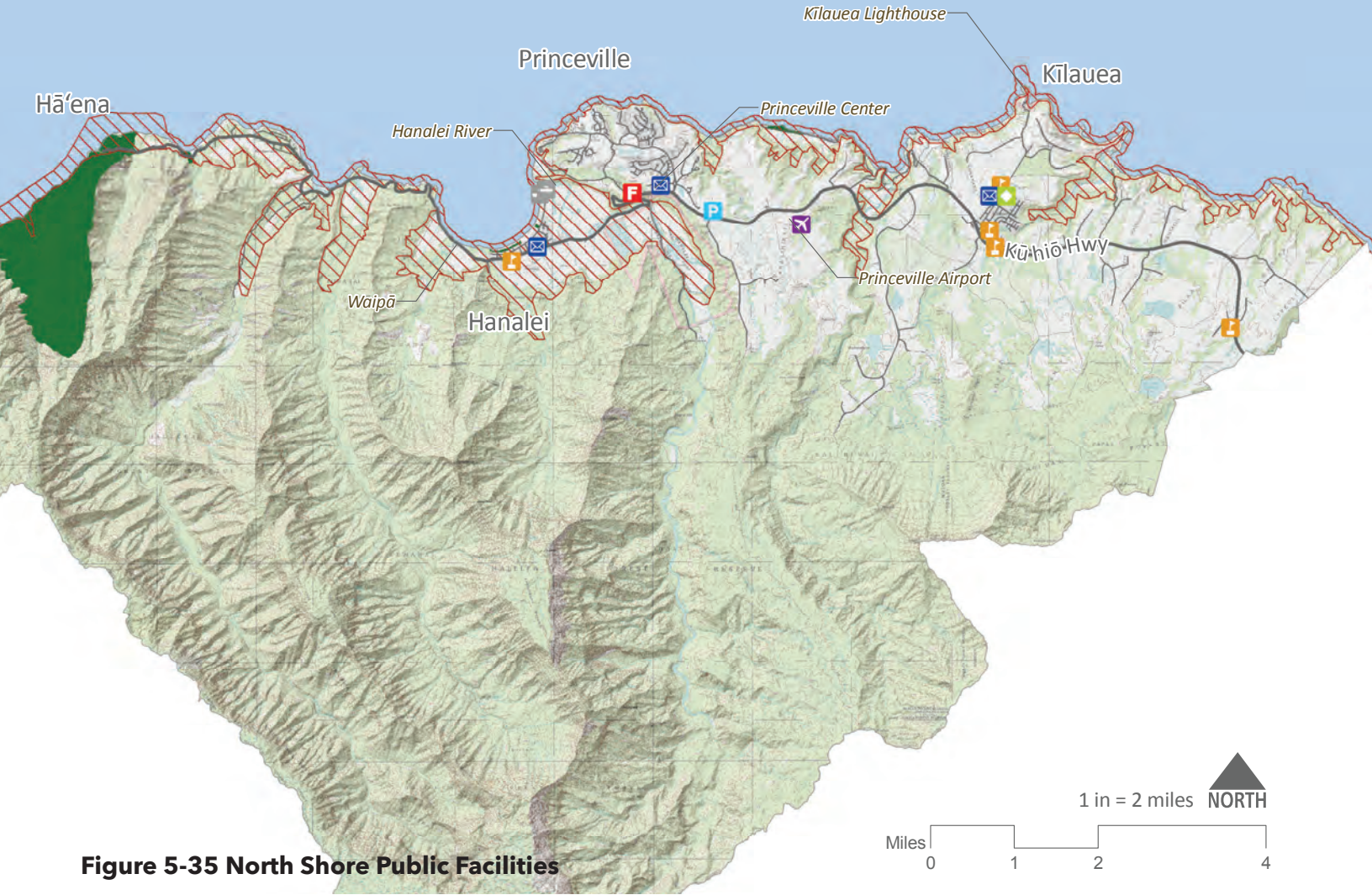


Figure 5-35 North Shore Public Facilities

- | | | |
|----------------------|---------------------------------|-------|
| Neighborhood Centers | Correctional Center | 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 | |

5.7 TRANSPORTATION MAPS

There are two General Plan Transportation Maps. One shows 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 in Community and Functional Plans. Keys to these maps are provided in Table 5-1 and Table 5-2, respectively. 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:

- *Kaua'i Transit Feasibility Study (2016)*: KTFS
- *Kapa'a Transportation Solutions (2015)*: KTS
- *Bike Plan Hawai'i (2003)*: BPH
- *South Kaua'i Community Plan (2015)*: SKCP
- *Līhu'e Community Plan (2015)*: LCP
- *Kīlauea Town Plan (2005)*: KTP
- *West Side Path Alternatives (2012)*: WSPA
- *North Shore Path Alternatives (2012)*: NSPA
- *Kaua'i State Transportation Improvements Program (FY 2015-2018)*: KSTIP

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 Kaua'i (existing), SKCP, LCP, WSPA,
- NSPA, STIP
- Planning District Boundary: Hawai'i DBEDT (1983)
- Major Roads: Hawai'i Department of Transportation (2009)

Figure 5-37 is taken from the *Kaua'i Transit Feasibility Study* (2017).

Purpose of the Transportation Maps

The purposes of the Transportation Maps are as follows:

- To depict the locations of major anticipated improvements to Kaua'i's transportation network during the planning horizon of the 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 Kaua’i Island Transportation Roadway Map Key

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 Kapa’a 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 Kapa’a Town to Kuamo’o Road
5. Add one lane on Kūhiō Highway from southern end of Kapa’a Bypass Road to Kuamo’o Road
6. Extension of right turn lane on Haleilio Road at Kūhiō Highway
7. Add one lane on Kūhiō Highway from Kuamo’o Road to Kapule Highway
8. Implementation of Līhu’e TIGER Grant Project Improvements
9. Congestion Management project on Kaumuali’i Highway from Anonui Street to Maluhia Road
10. Multimodal capacity improvements to Po’ipū Road

NEW ROADS

11. (a) New Kīlauea Entry Road; and (b) Kīlauea Entry Road Expansion
12. Connections between Kapa’a Bypass Road and Neighborhoods
13. Connection between Kūhiō Highway and Kapa’a Bypass Road
14. Connection between Kuamo’o Road and Ma’alo Road
15. Līhu’e Mauka Route
16. Northerly Leg of the Western Access Road

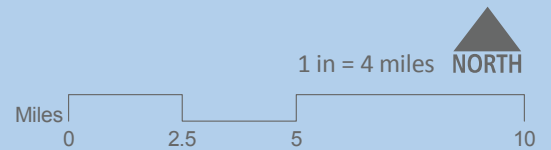
SHARED USE PATHS

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 Kaua’i 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 bikeway projects are noted in community plans and the Kapa’a Transportation Solutions Plan.



Figure 5-36 Kauai 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

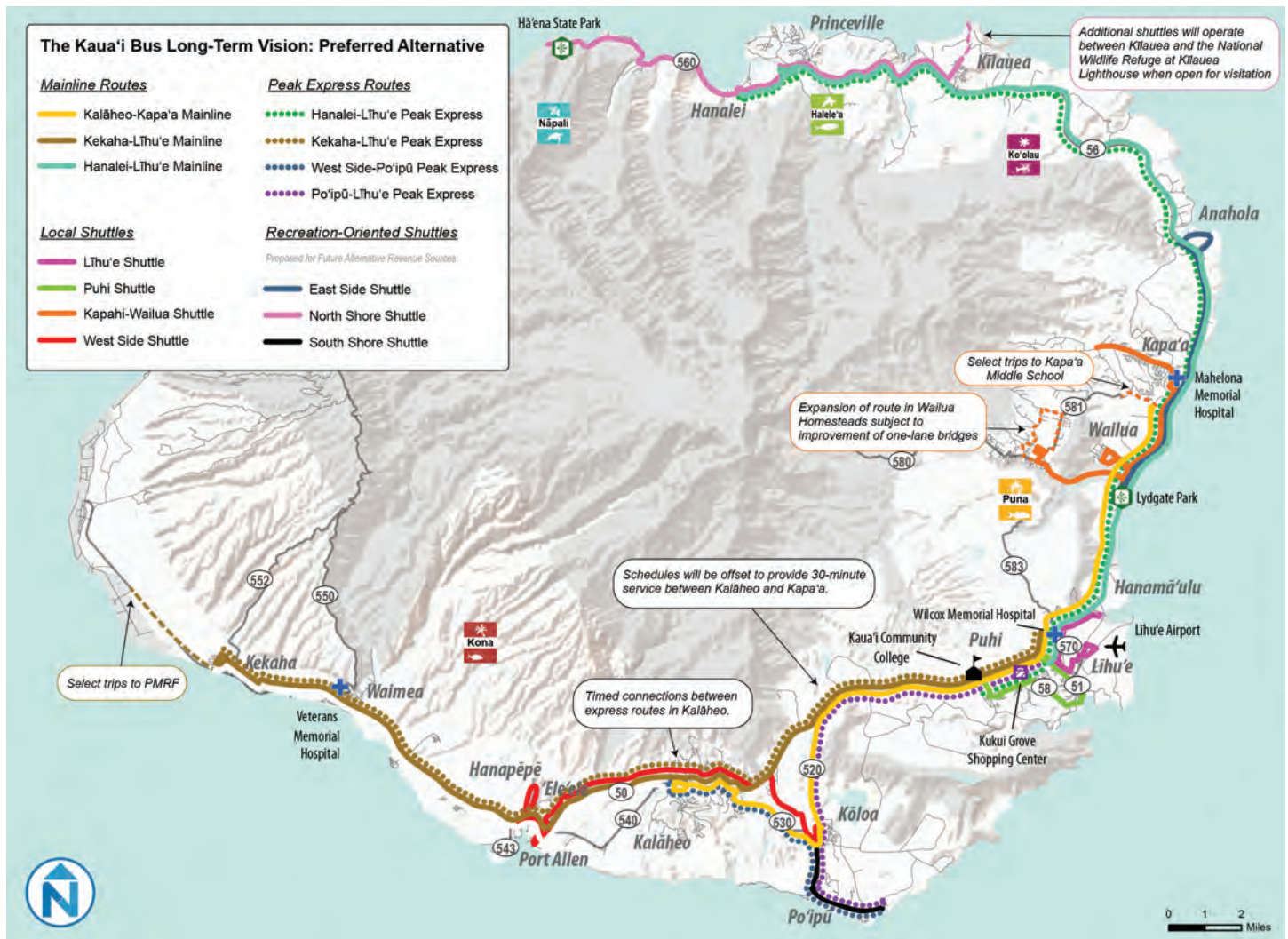
- North Shore Shuttle (Kīlauea Lighthouse to Kē'ē Beach)
- East Side Shuttle (Lydgate Park to Keālia Beach)
- Reconfigure Wailua and Kapahi Shuttles
- Reconfigure Līhu'e Shuttles
- Po'ipū-Kōloa Shuttle
- Hanapēpē to Kōloa Shuttle

TRANSIT MAINLINES

1. Reconfigure and expand service frequency for transit mainlines

Projects are not listed in order of priority.

Figure 5-37 Kaua'i Island Transit Map



Source: Kaua'i Transit Feasibility Study, Nelson\Nygaard Consulting Associates, Inc., 2017



'Anini Coastal Area and Reef, North Shore District

The maps are intended to be utilized and cross-referenced against one another when considering future land use proposals or policies.



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ONLINE VERSION

KAUA'I KĀKŌU

KAUA'I COUNTY GENERAL PLAN

APPENDICES 2018



Nāmāhōe
KAUA'I COUNTY

ONLINE VERSION



APPENDICES

The appendices are not controlling and are meant only as a courtesy guide.

- A. PROGRESS REPORT ON THE 2000 GENERAL PLAN**
- B. THE APPROACH AND PUBLIC PROCESS TO DEVELOP THIS GENERAL PLAN**
- C. GROWTH TRENDS AND PROJECTIONS**
- D. SEA LEVEL RISE MAPS**
- E. LAND OWNERSHIP AND AVAILABILITY FOR FUTURE GROWTH**
- F. ENTITLED PROJECTS BY DISTRICT**
- G. ACTION MATRIX**
- H. ISSUES AND OPPORTUNITIES**

APPENDIX A - PROGRESS REPORT ON THE 2000 GENERAL PLAN

What has happened since the last General Plan?

An important part of this General Plan Update was taking stock of what has happened, and what has not, since the 2000 General Plan.

The record on how the County has performed on implementing the 2000 General Plan is mixed. Many actions identified in the 2000 Plan have been

implemented, but others have not. Some actions are no longer relevant due to changes of circumstance. Some of those attempted did not succeed due to alternative political priorities. Others have not been initiated, or are otherwise constrained by available County resources including staffing and funding. Below is a non-exhaustive list of planning actions identified in the last General Plan that have been attempted, completed, or are currently being implemented.

County Planning Actions Since the 2000 General Plan

The many activities taken by the County Planning Staff to implement the 2000 General Plan are listed below.

Identifying Where We Fall Short

The events and meetings that have occurred over the past two years to update the General Plan

indicate that in many areas we have fallen short of our Vision. Participants wrestled with these tough questions throughout the process, with few, if any, easy answers.

While Kaua'i is still a very beautiful place to be, there continue to be threats to the environment requiring watchful diligence by its citizens and regulation by Federal, State, and County governments. There is continued degradation of water quality from urban uses, of the soil, and of sacred places (wahi pana)

ZONING AMENDMENTS	
<i>(Ordinance numbers are provided for those that passed. Those that were attempted but did not pass are italicized.)</i>	
Agricultural Cluster Subdivision Lateral Shoreline Access (777, 801) Gated Community Ban AG ADU Sunset (843) Subdivision Traffic Calming Superstore Ban (849) Shoreline Setback Bills (863) Open District Density Cap (895) Transient Vacation Rental Bills (864, 876, 904)	Small Wind Energy Conversion Farm Worker Housing Bill (903) Increase in Zoning Violation Fine (919) Land Coverage Calculation for Shared Use Paths (924) Agricultural Solar Facilities (928) CZO Update (935) Reduce Block Length (946) Homestay (987)
COMMUNITY PLANNING	
Kīlauea Town Plan (2005) Līhu'e Civic Center Improvements Master Plan (2008) Līhu'e Town Core Urban Design Plan (2009) East Kaua'i Community Plan (draft, 2015) Līhu'e Community Plan (adopted in 2015) South Kaua'i Community Plan and Form-Based Code (adopted in 2015)	
FUNCTIONAL PLANS	
Multimodal Land Transportation Plan (2012) Integrated Solid Waste Management Plan (2009) Water Plan 2020 (2001) Parks Master Plan (2013) Tourism Strategic Plan Update (2016) Important Agricultural Lands Study (2015) Affordable Rental Housing Study Update (2014) Multi-Hazard Mitigation and Resilience Plan Update (2015) Comprehensive Economic Development Strategy Update (2016)	

due to overexposure of humans. The effects of climate change, including sea level rise and extreme weather, among others, heightens the challenges and adds to uncertainty. Kaua'i citizens are serious about the environment. They do not want to just give lip service, they want everyone from individuals to government to be accountable and take real action to protect the 'āina and the ocean. They are willing to make more personal sacrifices and live with strictly enforced regulations in order to achieve the goal of protecting natural resources and upholding Kaua'i's natural beauty.

For too many residents there are challenges with the affordability of housing. People are doubled- and tripled-up, with no hope of either purchasing their own home or finding an affordable rental. Does opening up more lands for development bring about the desired outcome of having adequate housing for people to live in? Does relaxing regulations to allow for more attached, semi-detached and other types of units make a measurable difference or does it just reinforce sprawl? These are some of the questions the General Plan sought to address.

Related to this issue is the inadequacy of infrastructure. While there is plenty of water, the facilities to extract it, store it, and transfer it to where it is needed now and into the foreseeable future is not there. Recent court cases on the public trust doctrine indicate that a new thinking is required to properly allocate water against all uses. Similarly, solid waste capacity is close to being reached and a new facility is required. Wastewater has challenges, especially for those now being served through septic tanks or cesspools, which are being phased out.

Traffic congestion is at the top of everyone's list of issues. It occurs in many places, but it is especially acute through the East Kaua'i District due to having one main travel route, which is the same as the destination road, Kūhiō Highway. Peak period coning, a bypass road, and other measures have done little to relieve congestion. The State does not have sufficient resources at this time to build new roads or widen roads to provide congestion relief and add capacity. The County strategy to address this issue through mode shift has made few measurable impacts. Too few people ride the County bus, ride their bicycle, and/or walk to get around. While developments such as a TIGER grant in Līhu'e and the islandwide transit study are furthering this goal, it has been frustrating

to measure little progress year after year.

Finally, there are too many disaffected individuals on Kaua'i. The benefits that come with living in a beautiful place are elusive to people struggling to get by. The presence of homeless, runaways and lost teenagers, and a criminal element is inconsistent with Kaua'i's social and cultural mores but all too pervasive. The lack of clear strategies, programs, and resources to attack such problems frustrates and confuses the population at large.

These concerns collectively have led to disenchantment with the planning process and the General Plan itself. What is the point of having lofty goals if we make no progress on them from plan period to plan period? Which of them need to be tackled first? Which problems should get the majority of resources?

It is the premise of the General Plan that these issues, while very real, must not dissuade us from holding a forward thinking Vision, setting Goals and Policies, and identifying Actions toward realizing our goals. The work of a General Plan, therefore, requires a degree of optimism. We do so in full recognition of the challenges, and with a willingness to improve our accountability and enforce how we measure our progress, whether in small steps, or giant strides. The General Plan gives us the beacon for where to travel together. It provides us a way forward to plan Kaua'i Kākou.

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APPENDIX B - THE APPROACH & PUBLIC PROCESS TO DEVELOP THIS GENERAL PLAN

The Approach to this General Plan

Introduction

Much has changed since the 2000 General Plan was adopted. The process for updating the Plan included looking at what has changed, what has remained the same, and what new issues have emerged since the 2000 General Plan. It required looking at the policies and implementing actions in the 2000 General Plan and working with the various County agencies to take stock of which have been implemented, which have not, and which are no longer relevant and why. It involved commissioning new studies and reviewing data and new information that has become available since the last General Plan. It also involved working closely with the community to take stock of what is most important to their future.



Goals for the Planning Process

The planning process was designed to be inclusive, collaborative, innovative, and action-driven.

Inclusive means ensuring that those who are interested in participating in this General Plan are aware of the process, have multiple means to participate, and can access information readily. It means making special efforts to reach traditionally underserved segments of the community and engage people of all ages.

Collaborative means providing for all involved to contribute in a meaningful way toward shaping the vision, goals, policies, and actions contained within the General Plan. Community members should “see themselves” and their input reflected in the final product.

Innovative means applying creativity and flexibility to the planning process. It involves using technology to make participation easier and more appealing. It means consulting current best practices and adapting them to the unique needs of Kaua’i.

Action-Driven means developing General Plan policies and actions with an emphasis on implementation. It means establishing a shared kuleana for realizing the General Plan Vision, and including meaningful ways to measure progress.

Project Team & Work Products

This General Plan process commenced in the fall of 2014. SSFM International, Inc. served as the lead consultant to the County of Kaua’i Planning Department. SSFM retained several subconsultants to assist with various components of the project. These included Opticos Design, Inc., Economic and Planning Systems, Collaborative Economics, Metroquest, PBR Hawai’i, Charlier and Associates, and Marine and Coastal Solutions International (collectively, the Project Team).

The Project Team prepared several technical papers during the course of this General Plan to support development of the vision, policies, and actions. These included:



General Plan Update Community Meeting in Kapa’a, May 2015

- Updating the Vision for Kaua'i (SSFM, July 2015)
- Issues and Opportunities for the Kaua'i 2035 General Plan (SSFM, September 2015)
- Adequacy of Future Infrastructure on Kaua'i (SSFM, February 2016)
- Summary of Community Place Types and Degree-of-Change Visioning Workshops for the Kaua'i General Plan (Opticos Design, Inc., 2016)

- Kaua'i 2035 General Plan Technical Study: Land Use Buildout Analysis (PBR Hawai'i, May 2015)
- Kaua'i Community Health Improvement Plan (Kaua'i Community Health Initiative, June 2014)
- 2035 General Plan Kaua'i Infrastructure Analysis (R.M. Towill, May 2015)

Key references and plans further informed this General Plan:

- Community Plans for the Lihue District and South Kaua'i District (both adopted in June 2015)
- Kaua'i Multimodal Land Transportation Plan (2012)
- Kaua'i Tourism Strategic Plan Update (2015)
- Kaua'i Comprehensive Economic Development Strategy (2016)

Functional plans prepared by County and State agencies (Water, Parks and Recreation, etc.) were consulted, as were area-specific studies and master plans. A comprehensive listing of references is included in Chapter 6.

Population & Socioeconomic Forecasts

The General Plan process produced baseline data and assumptions on how the island is expected to grow over the next 20 years. The *Socioeconomic Analysis and Forecasts (2014)* technical report that was prepared for this General Plan provides the basis for growth projections in population, housing, employment, and other demographic and socioeconomic characteristics. A Technical Advisory Committee comprised of community members and agencies was assembled to review and provide input on this and other technical reports for the General Plan. Appendix C provides an overview of the findings.

As shown in the Table below, a great majority of population growth is planned to occur in the Lihue and South Kaua'i districts (Kōloa-Po'ipū-Kalāheo). The Lihue district had 21.9 percent of Kaua'i's population in 2010 and is expected to house 26.6 percent in 2035. The Kōloa-Po'ipū-Kalāheo area had 17.4 percent of the County population in 2010 and will have up to 18.5 percent on 2035.

Policies and actions to address this anticipated growth are reflected in this General Plan, as well as



Project Team Meeting

Baseline Data & Assumptions for Growth General Plan Technical Studies & Key References

Six technical reports were prepared prior to beginning this General Plan and were reviewed by a technical advisory committee comprised of community members and agency staff. The purpose of the technical reports were: 1) to document current conditions and needs; 2) to establish projections and assumptions about future growth to be used as a basis for planning; and 3) to provide guidance for incorporating key policy topics into this General Plan. The technical reports are listed below.

- Kaua'i 2035 General Plan Socioeconomic Analysis and Forecasts (SMS Research, February 2014)
- County of Kaua'i Important Agricultural Lands Study (University of Hawai'i Department of Urban and Regional Planning, August 2015)
- Kaua'i Climate Change and Coastal Hazards Assessment (University of Hawai'i Sea Grant College Program, June 2014)

the Community Plans for the Līhu'e and South Kaua'i Districts that were completed and adopted in 2015. The percentage of the County's population in each of the remaining districts will decrease slightly by 2035.

The Līhu'e District is expected to absorb nearly half of the island's population growth through 2035, in keeping with the County's policy of designating Līhu'e as the island's main center of population and employment.

Kaua'i County Population, Island-wide and By District (1990-2035)

Kaua'i County Population, Island-wide and By District (1990-2035)						
	1990	2000	2010	2020	2030	2035
County of Kaua'i	51,676	58,463	67,091	74,693	83,328	88,013
Līhu'e	11,169	12,507	14,683	18,017	21,595	23,456
South Kaua'i	9,600	10,545	11,696	13,623	15,737	16,855
Hanapēpē-'Ele'ele	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 Kaua'i	16,192	18,784	20,992	22,403	24,128	25,110

Source: SMS Research Kaua'i 2035 General Plan: Socioeconomic Analysis and Forecasts (2014)

Land Use Forecasts

Another key technical report prepared to inform the General Plan's growth projections was the Land Use Buildout Analysis (2015). Using the population and housing projections contained in the socioeconomic study, the land use buildout study inventoried existing land use designations and determined whether additional designated lands would be needed to accommodate projected residential, commercial, industrial, resort, and other land uses. The findings of the Land Use Buildout Analysis (2015) are contained in Chapter 2.

Approach to Policy Development

Policies and actions are included in Chapters 1 and 3. The text box below describes the principles that were followed in developing policies for this General Plan.

Policy Principles

- General Plan policies are intentionally high level and general. They provide County agencies with both guidance and flexibility in preparing functional and community plans.
- Policies replace the policies in the 2020 General Plan.
- Policies provide a framework for actions that can then be prioritized, tracked, and measured.

- Policies are flexible enough to allow for changing information, technology, and circumstances.

The approach to developing policies and actions for this General Plan is explained in the diagram below. For each key policy, the Project Team:

- Consulted existing policies and considered how they have worked to date
- Reviewed current best practices
- Interviewed agencies to identify policy opportunities
- Drafted policies for review and input from the CAC and community
- Revised policies based on agency and community input

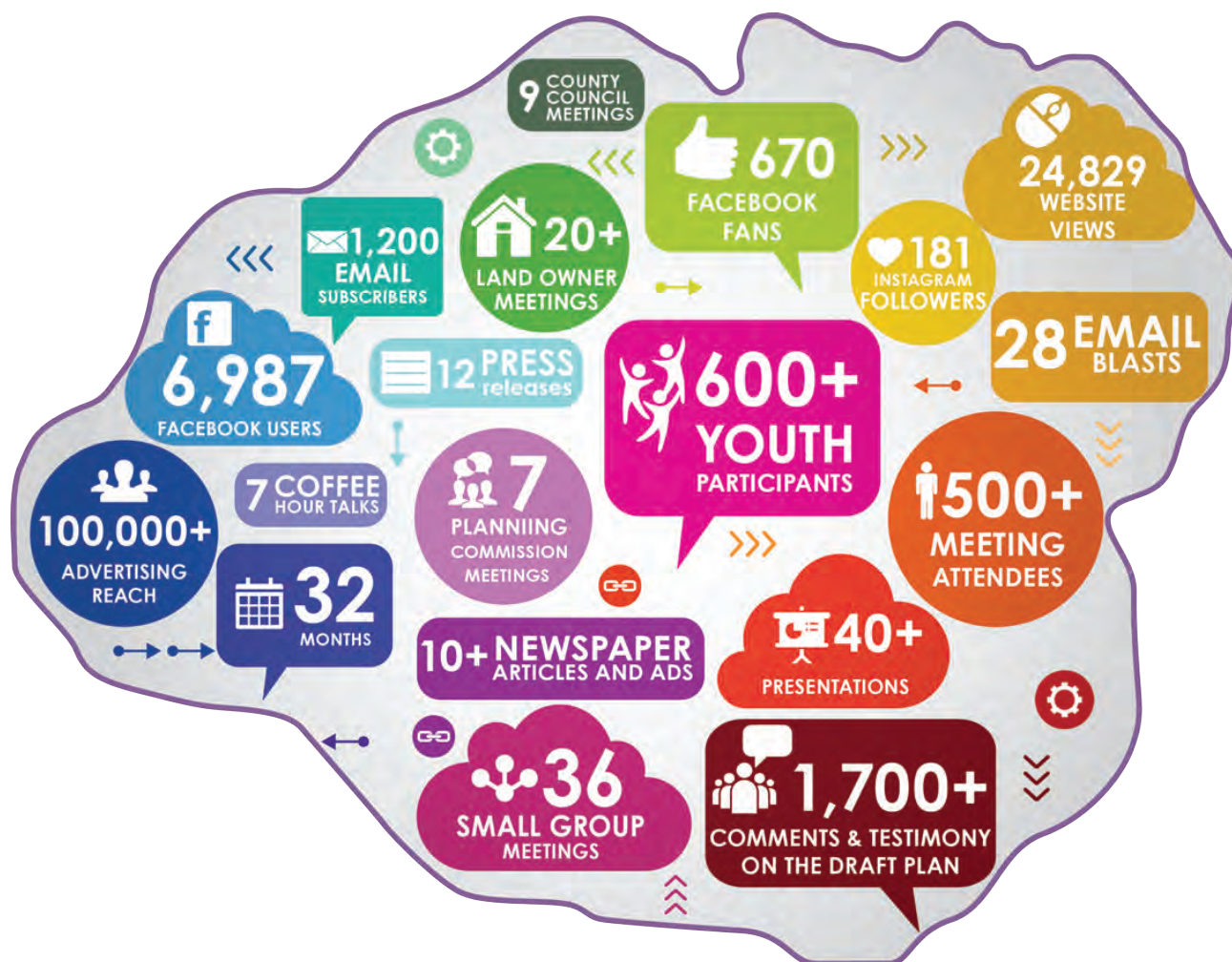
Gather Information	Incorporate Input	Develop Policies	Guide Implementation
<ul style="list-style-type: none"> - Plans & policies - Best practices - Developments since 2000 GP - Policy issues and opportunities 	<ul style="list-style-type: none"> - Agency interviews - CAC policy discussion - Community input 	<ul style="list-style-type: none"> - Developed draft policies - Tested and refined policies with input 	<ul style="list-style-type: none"> - Actions - Policy maps - Prioritization - Performance measures & indicators

Public Process for this General Plan

Community input and participation are the foundation to this General Plan Update. Much of the vision, goals, policies, and actions of this update were developed as a result of over 32 months of island-wide public input that were collected throughout the entire General Plan Update process. A major goal of the public engagement process was to reach out to as much people as possible from Hanalei to Kekaha

and from keiki to kūpuna. There were also special efforts by the team to reach out to new participants and Kaua'i's youth.

In order to make sure that all Kaua'i voices were heard and given the opportunity to comment, a robust public engagement process was created that relied on more innovative and creative forms. In addition to holding traditional community meetings in all the planning districts, the team went out into the



community and held pop-up locations at schools, farm fair, bike path, parks, public libraries, and the farmers market. Further, the use of digital platforms such as our website, e-mail address, online survey, Facebook, and Instagram accounts helped to advertise events, provide a convenient forum to provide comments, and reach out to a younger audience.

The public engagement process of this General Plan Update was broken down into three phases: (1) visioning, (2) policy and land use outreach, (3) Discussion Draft outreach. During each of the phases, public engagement efforts were conducted island-wide and at different locations to ensure a diverse range of people participated in the process. During the 32 months of public outreach, the team reached over 100,000 people.

The infographic on the prior page shows the general reach of the public process (as of February 2018). It should also be noted that our public engagement process included numerous rounds of meetings with major stakeholders (landowners, agencies, neighborhood association groups, community organizations) at different phases of the public engagement process.

The remaining section of this appendix goes into more description and detail about the different types of outreach that was conducted for this update.

Who Participated

This General Plan process enjoyed a high level of participation. Stakeholders included: Major landowners, government agencies (county, state, federal), community members, non-profit organizations, neighborhood associations, and the youth (elementary, middle school, high school, and college-aged students).

Branding & Identity

The first step in making the Update process visible and recognizable was to develop a strong brand identity, complete with a logo and messaging that clearly related the General Plan to people’s everyday lives. The theme is “Plan Kaua’i Kākou,” and the logo includes a canoe that symbolizes people working together toward a common goal for the future. Several versions of the logo were developed for different applications.

Materials were developed using the brand identity to build awareness and educate people on the GP Update process and how to get involved.

This included a fact sheet, postcard, signage, and advertisements that were run in local newspapers and publications. In addition, t-shirts, pens, stickers, and water bottles were created with the Kaua’i Kākou logo as giveaways and prizes for participation.

Spreading the Word



Website

The General Plan Update process has had an active presence online since its inception. The website, www.plankauai.com, serves as the central hub for information and updates, which are shared across the County of Kaua’i Planning Department’s social media platforms. As of February 2018, there has been nearly 25,000 website views.



The “Latest News” page of the project website, www.plankauai.com

Social Media

Social media was utilized as an engagement tool throughout the project. Platforms included the Kaua’i

County Planning Department’s Facebook page, and a dedicated Instagram account for this General Plan (@plankauai). An official hashtag was developed and promoted, #plankauai. As of February 2018, #plankauai received 181 Instagram followers and 670 Facebook fans.

E-mail List

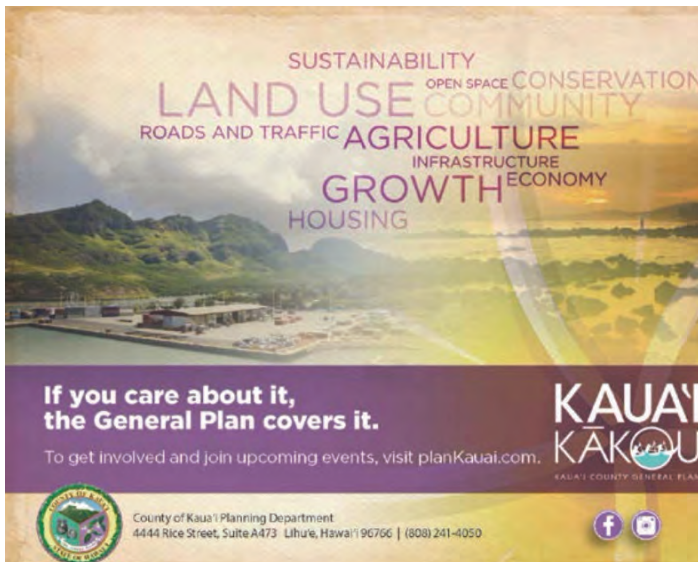
A list of e-mail contacts was compiled and maintained over the course of the project. These contacts received e-mail notices of community meetings and workshops, as well as important update announcements. This list was comprised of members of the public who either subscribed via the website or indicated their interest at meetings, and was key in the distribution of plan-related updates, meetings, and events. Mailing list signups were encouraged in print and online media, and at project meetings and events. There were 28 e-mail blasts and over 1,200 subscribers as of February 2016.

Video

A three-minute informational video was produced to introduce the GP Update process, background and history, content topics, importance to policy, and opportunities for public participation. The video included footage of Kaua’i and the public process, and was designed to raise awareness, promote the update process, and encourage public participation. It was posted on the project website, shared on social media, and screened at community meetings.

Print Advertising: Newspaper and Advertisements

The GP Update process utilized both online and print media advertising to promote public engagement in the process, and to publicize upcoming meetings.



Print advertisement designed for the General Plan Update

These took the form of print media such as notices and ads in The Garden Island, Kaua’i Magazine, Kaua’i Family Magazine, Elder Resource Magazine, and Midweek Kaua’i. Event flyers and notices were also distributed at commercial retail centers and public offices. Online notices included postings on the websites and online calendars of Mālama Kaua’i, Kaua’i Planning & Action Alliance, Heartbeat of Kaua’i, and Kaua’i Festivals, as well as regular event notices and updates on the Kaua’i GP Update project website. As of February 2018, there has been 10 newspaper articles and ads on the General Plan.

Media Campaign

Several news releases were distributed by the Kaua’i Mayor’s Office to all major local news outlets. New releases announced the launch of the project, promoted community events, and invited participation and input. Employees of The Garden Island newspaper regularly attended and reported on community events and Citizen Advisory Committee meetings. As of February 2018 there has been 12 press releases.



September 25, 2015 news article in The Garden Island publicizing the County’s call for landowner participation and input on future developments.

Opportunities for Citizen Input and Participation

This General Plan included a robust public engagement program that sought to engage the community through multiple formats over the course of the General Plan update. These included a variety of face-to-face meetings and workshops, digital engagement platforms, and youth arts and education outreach. These are illustrated in the graphic below and described in the following pages.

the Mayor and represented a diversity of viewpoints and stakeholders. CAC members are listed in the Acknowledgements at the beginning of this document.

The role of the CAC was to:

- Identify useful information and sources
- Participate in community events and advise on community and stakeholder engagement
- Help to distribute information and get the word out about this General Plan process



- Review the draft plan and policies and provide input in an advisory capacity

FACE-TO-FACE ENGAGEMENT

Citizen Advisory Committee

The Citizen Advisory Committee (CAC) for this General Plan is an advisory group that represents various geographic areas and interest groups across the island. The members were selected by

CAC meetings convened in March 2015. The CAC had 17 meetings on General Plan Policy Topics over the course of the project. In addition, the CAC participated in three workshops to review the policies, land use maps, and actions of the Draft General Plan.

CAC Schedule		
Mtg #	Month/Year	Topics Covered
1	March 2015	CAC Kickoff and Introduction to the
2	April 2015	Demographic and Socioeconomic Data
3	July 2015	Proposed Vision for Kaua'i 2035
4	July 2015	Place Typing and Form-Based Code
5	September 2015	Status of 2000 General Plan Implementation Land Use Buildout
6	October 2015	Natural, Historic, and Cultural Resources
7	November 2015	Economic Development
8	January 2016	Mid-Project Re-cap, Place Type and Land Use
9	February 2016	Infrastructure
10	February 2016	Tourism
11	April 2016	Agriculture
12	May 2016	Transportation
13	June 2016	Housing and Social Equity
14	August 2016	Draft Plan Policies and Land Use Maps
15-16	September 2016	Review of Draft Plan Actions
17	December 2016	Review CAC and Community Input on the Draft Plan

The Table below lists the topics and chronology for each CAC meeting. CAC meetings were open to the public, and time was allocated for public comment during each meeting. Public participation in CAC meetings increased throughout the process, typically drawing between 20 and 50 people from across the island. County and State agency representatives also attended and participated in CAC meetings.

Small Group Meetings with Community Organizations and Groups

The County of Kaua'i Planning Department conducted small group meetings with 34 community organizations during this General Plan. These meetings were all one-on-one meetings. Small group meetings were announced twice during the process, in May 2015 and August 2016. Requests for presentations or participation in board meetings were accepted throughout the planning process as well. The intent of the sessions was to apprise community groups of this General Plan process and gather input on the major issues and concerns for each group's constituents. Groups consulted are listed on the next page.



CAC Meeting #11, Lihu'e, April 2016

Pop-Up Events

County of Kaua'i Planners conducted a "Pop-Up Week" and deployed a traveling tent with interactive displays at various locations around the island from May 1-8, 2015. Planners talked with community members and collected input through discussion and comment boards where participants could place post-it notes with ideas and visions for Kaua'i. The intent of Pop-Up Week was to reach people that may not have otherwise heard about or engaged in the planning process, by bringing the planning process to communities and neighborhoods.

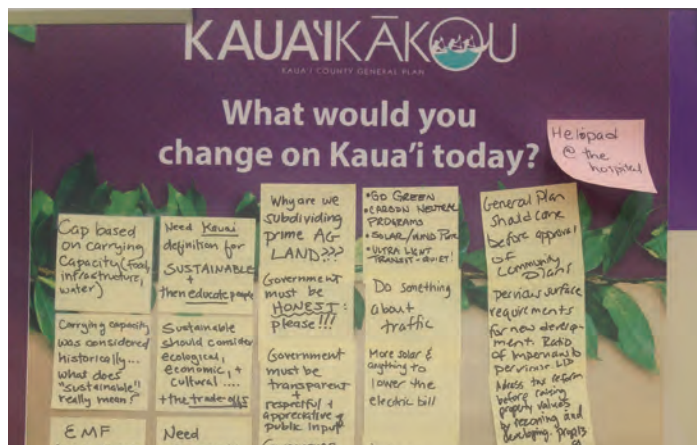
There were a total of 12 pop-up events at the following locations: Kaua'i Museum, Kaua'i Community Market at Kaua'i Community College, Kōloa Sunshine Market, Keālia Market, Kalāheo Sunshine Market, Kapa'a Sunshine Market, Truck Stop Thursday in Lihu'e, Hanapēpē Art Night, Hofgaard Park in Waimea, Ke Ala Hele Makalae coastal path, Lihu'e Civic Center, and Princeville Library.

Community Organizations Consulted

- Apollo Kaua'i
- Get Fit Kaua'i
- Hale Halawai
- Hanalei Watershed Hui
- Hanapēpē Community Association
- Hawaiian Islands Land Trust
- Kaua'i Board of Realtors®
- Kaua'i Chamber of Commerce
- Kaua'i Community Health Alliance
- Kaua'i County Sub-Area Health Planning Council
- Kaua'i Endangered Seabird Recovery Project
- Kaua'i Filipino Chamber of Commerce
- Kaua'i Filipino Council
- Kaua'i Forest Bird Recovery Project
- Kaua'i Nene Habitat Conservation Plan
- Kaua'i Path
- Kaua'i Planning and Action Alliance
- Kaua'i Seabird Habitat Conservation Program
- Kaua'i Watershed Alliance
- Kaua'i North Shore Community Foundation
- Kekaha Community Association
- Līhu'e Business Association
- Mālama Kaua'i
- Mālama Māhā'ulepū
- Na Lei Wili
- National Tropical Botanical Garden
- People Attentive to Children (PATCH)
- Phi Theta Kappa (Kaua'i Community College)
- Princeville at Hanalei Community Association
- Save Our Shearwaters
- Sierra Club
- Surfrider Foundation
- Wailua-Kapa'a Neighborhood Association
- Zonta Club

Farm Fair

The County set up a booth at the 2015 Kaua'i Farm



Responses from residents during Pop-Up Week

Fair to collect input on the draft Vision over a three-day period. A display included statements from the draft Vision and participants were asked to vote for their highest priorities. There was over 100 people that visited the booth.

Community-Wide Meetings



County of Kaua'i Display at the 2014 Kaua'i Farm Fair to seek input on the Līhu'e and South Kaua'i Community Plan Updates.

Project Kick-Off Meetings (May 2015)

Community meetings were held at Neighborhood Centers in each of Kaua'i's six planning districts during the month of May 2015 (see table on the next page). These meetings were intended to familiarize the community with this General Plan process and invite input on key issues and policy elements of the plan. Presentations included information on population projections and other data being used to inform this General Plan. The meetings used discussion, polling, interactive display boards, and written comments as mechanisms for collecting input. Attendees were polled on top issues facing the island today. They also revisited the 2000 General Plan Vision statement

and were asked to assess its relevance and how far the County had come in achieving it.

Community Place-Typing and Visioning

Date	Community
May 14, 2015	Waimea
May 15, 2015	Kōloa
May 16, 2015	Līhu‘e
May 21, 2015	Kapa‘a
May 22, 2015	Hanapēpē
May 23, 2015	Kīlauea

Workshops (November 2015 and April 2016)

Place types for the Līhu‘e and South Kaua‘i Districts were taken from the recently completed Community Plans for both districts. The remaining four districts of Hanapēpē-‘Ele‘ele, East Kaua‘i, Waimea-Kekaha, and North Shore determined place types for each main community through community place-typing and visioning workshops.

Each workshop began with a presentation explaining place types and how they are utilized in developing General Plan visions, land use designations, and policies. It also presented baseline information on population projections for each district, planned and entitled developments, and the district vision contained in the 2000 General Plan. The Project Team started by suggesting a place type based on the size of the community and place type category

descriptions contained in Chapter 2: rural crossroads, village, small town, or large town. Community members were asked at the beginning and end of the workshop to confirm whether or not this place type was accurate to describe the community today. They were also asked whether the community would remain as it is today, or undergo a transition. This future change was articulated as each community’s “degree of change.”

Determining degree of change helps to articulate how much change is appropriate in different places on Kaua‘i in order to achieve the visions for each community on the island. Three degrees of change were identified in the Kaua‘i General Plan workshops to describe community visions:

- Minimal Change, for a place that is maintained.
- Incremental Change, for a place that allows for change over time and evolves.
- Transformative Change, for a place that encourages significant change to occur.

To determine each community’s desired degree of change, Degree of Change was assessed by reviewing existing data and plans for each area and asking community members:

How will your community change to reflect your vision for it? Will it be:

- a place that experiences **minimal change** and is ***maintained***?
- a place that allows for **incremental change** over time and ***evolves***?
- a place that encourages **significant changes** to occur and ***transforms***?

In order to determine the desired degree of



Community Meeting in Kapa‘a, May 2015



Community Meeting, Hanapēpē May 2015



Attendees of the North Shore Bus Tour in Princeville.



Opticos Design marking-up preliminary land use maps based on input.

change for each community, the workshops asked participants to respond with impressions and ideas about specific changes to the following character components of their community:

- *Site Frontages*: How do structures address the street?
- *Parking*: Where is parking primarily located?

building height (in stories)? What is a desirable scale and character?

- *Destinations and Amenities*: Does the center draw people because of its uses or character?

The table below provides examples of strategies that illustrate minimal, incremental, and transformative degrees of change.

Examples of Strategies for Minimal Change	Examples of Strategies for Incremental Change	Examples of Strategies for Transformative Change
<ul style="list-style-type: none"> - Occasional infill of vacant lots - Occasional redevelopment of dilapidated properties - Minor improvements to the public realm 	<ul style="list-style-type: none"> - Encourage infill of vacant and under-utilized lots - Encourage mixed-use and medium-density where appropriate - Improvements to public realm - Upgrade infrastructure 	<ul style="list-style-type: none"> - Encourage infill of vacant and under-utilized lots - Encourage mixed-use and medium-density where appropriate - Redevelop existing opportunity sites - Maximize mobility and links to transit - Transformative improvements to public realm - Major infrastructure upgrades

- *Pedestrian Facilities*: What is pedestrians' comfort in using streets? Are community facilities well-connected by pedestrian routes?
- *Right-Sizing the Center*: Is there a defined central gathering place for the community?
- *Building Intensity*: Is the size of the center appropriate for its uses?
- *Infrastructure and Services*: What is the typical

This information was documented in presentations and maps that were shared with community members in a closing presentation. The findings formed the basis of Place Typing and Community Vision memos, and preliminary land use maps for each district that were further refined during this General Plan process. The dates and locations of the place-typing and visioning workshops are included in the table on the following page.

Date	Activities	Location
11/02/2015	Group Visioning and Bus / Walking Tour	Hanapēpē-'Ele'ele
11/03/2015	Group Visioning and Bus / Walking Tour	Waimea and Kekaha
11/04/2015	Draft Land Use Concepts for Waimea and Kekaha	Waimea
11/04/2015	Draft Land Use Concepts for Hanapēpē-'Ele'ele	Hanapēpē
11/05/2015	Group Visioning and Bus / Walking Tour	Kīlauea, Princeville, and Hanalei
11/06/2015	Draft Land Use Concepts for Kīlauea, Princeville, and Hanalei	Princeville
04/28/2016	Group Visioning and Bus / Walking Tour	Wailua, Kapa'a, and Anahola
04/28/2016	Mapping Exercise for Wailua, Kapa'a, and Anahola	Kapa'a
04/28/2016	Draft Land Use Concepts for Wailua, Kapa'a, and Anahola	Kapa'a

Discussion Draft Open Houses (November and December 2016)

There was six community open house events. The purpose of each event was to present the discussion draft plan and encourage input during the public review period, which was extended until December 2016. These meetings were held in an open house format and included agencies, stakeholders, and community members that were instrumental in developing the plan. There was a total of 239 attendees at the final six community open house events. The dates and locations of the open houses are described in the table on the following page.

Agency Coordination

There were three rounds of opportunities for agencies to provide comments on the General Plan. In addition, agencies were kept informed of updates on the General Plan process through e-mails, press releases, and several presentations to the KCT cabinet team. Agencies were invited to CAC meetings and workshops, as well as public meetings. The table below describes the engagement included in each of the three rounds of agency engagement.

Landowner Meetings

From September 2015 to November 2016, 19 landowner meetings were held, including 15 landowner participants. Landowner meetings were held in three rounds. In each round, invitations were sent via certified mail to large landowners likely to be affected by Future Land Use Map changes. The first two rounds, which included 17 meetings, allowed landowners to engage in the General Plan process. The first round was held during September 2015, and the second round was held July 2016. The last round, which included two meetings during



Coffee Hour Talk, Lihu'e District

Date	Open House #	Location
11/09/2016	Open House #1	Līhu'e
11/10/2016	Open House #2	Kīlauea
11/14/2016	Open House #3	Hanapēpē
11/15/2016	Open House #4	Kapa'a
12/05/2016	Open House #5	Waimea
12/06/2016	Open House #6	Princeville

November 2016, allowed landowners to come to the planning department to discuss proposed changes and provide comments for the public review period.

Coffee Hour Talks

There was a total of six coffee hour talks held at Hā Coffee Bar in Līhu'e, from January to June 2016. The purpose of Coffee Hour Talks were to continue the conversation on different topics from the General Plan CAC meetings. Coffee Hour Talks allowed CAC members and the public to talk story about planning issues on Kaua'i. Issues that were discussed included land use maps, infrastructure, tourism, agriculture, transportation, and housing. There were 3-4 people who attended each event, with a total of 18 attendees.

DIGITAL ENGAGEMENT

Instagram Contests

Two community-wide Instagram contests were held for the GP Update. One coincided with Plan Kaua'i Pop-Up Week, and the second was launched during the Community Meetings. The first contest challenged users to find the Plan Kaua'i pop-up tent, talk with County planners, and post a photo with hashtags #findtheplanners and #planKauai. The second contest invited community members to post photos that represent their vision for Kaua'i and to tag #myKauaivision.

Agency Coordination	
Round 1 - Late 2015	The Project team met with individual agencies to gather input on the infrastructure report as well as the Issues and Opportunities Paper.
Round 2 - July 14-15, 2016, Līhu'e Civic Center	Meetings were focused on Health and all policies, but were intended to encourage cross sector collaboration. Appx. 20 agencies participated in workshops on the following topics: 1. Active Living 2. Healthy Eating and Food Environment 3. Healthy and Safe Housing and Economic Development 4. Climate Change and Health
Round 3 - November 2016	Appx. 30 agencies were notified to participate in open houses and agency meetings. The open house was held on November 23, and 4-5 agencies attended. Two agency meetings were held on November 28 and 30. Members from the following agencies attended these meetings: (1) Water, (2) Housing, (3) Civil Defense / KEMA, (4) DOH-Wastewater, and (5) OED.



An entry in the #mykauaivision Instagram contest

Survey on Draft Policies (September 2016)

An online survey was developed and deployed during the month of September 2016. The purpose of the survey was to:

- (1) Share the draft policies.
- (2) Determine whether the community at large agreed or disagreed with each policy.
- (3) Find out whether they felt that the policies as a whole captured their concerns for the future of Kaua'i.
- (4) Identify any gaps or missing elements in the policy statements.

More than 1,000 responses were received. Results indicated strong agreement with the policies shown. Nearly 80% of respondents indicated they believe the policies captured what they thought was important (6.4% said they did not, and 14.8% were undecided). Additional details on respondents by demographics and geographic location are shown below.

Total responses: 1,018

Geographic Location (sorted from most to least respondents):

- East Kaua'i: 327 (33.4%)
- South Kaua'i: 192 (19.6%)
- Lihu'e: 169 (17.3%)
- North Shore: 160 (16.4%)
- Waimea-Kekaha 56 (5.7%)
- Hanapēpē-'Ele'ele: 55 (5.6%)
- 4 respondents do not live on Kaua'i



Winner of the #findtheplanners Instagram contest, @beaubasaur

Demographics

- Respondents had a 6:4 ratio of Women:Men
- Respondents were from all age groups. Largest number were from 50-65 (35.2%) and second highest from 35-49 (26%)
- 85 keiki ages 8-10 completed the survey
- Most respondents have lived on Kaua'i for 10 years or more (47.4% more than 10 years; 28.1% born on Kaua'i)

The policy statement "Protect Kaua'i's scenic beauty" received the most support, with 93.8% of respondents indicating agreement or strong agreement.

The policy statement "Uphold Kaua'i as a unique visitor destination" received the least support, with 13.7% disagreeing. However, 78.2% of respondents agreed with the statement.

The policies where respondents most indicated needing more information included: "Design healthy and complete neighborhoods"; "Build a balanced transportation system"; and "Help agricultural lands be productive."

When asked "What's missing from the policies? Are there any you would add?", some themes emerged from the input:

- Carrying capacity: Respondents indicated that the concept that the island has limited capacity for growth needed to come across more strongly.
- Sustainability: Respondents expressed interest in supporting more bike paths and preserving nature.
- Development: Many respondents asked for language that proposed different

ways of limiting development or stopping development completely. There was also a desire for more accountability to ensure that developments are consistent with Community Plans and provide benefit to the community. In contrast to this view, some respondents indicated that they wanted affordable housing-related development or wanted the County to embrace growth.

- Agricultural uses: Some respondents asked that policies include stopping or limiting the use of agricultural land for genetically modified organism (GMO) crops or pesticide testing.
- Small farmers: People asked for incentives to encourage small-scale farming, including allowing farm housing on agricultural lots.
- Alternative visitor accommodations: There was a clear split between those seeing bed and breakfast (B&Bs) and transient vacation rentals (TVRs) as an income-generating activity that should be allowed versus those that feel they take needed housing out of the market and increases the cost of living.
- Education: Respondents felt setting goals for education were important.
- Drugs and community safety: Some indicated they would like to see policies address these topics.

The input collected was valuable in confirming the policy statements and informed the development of the actions included in Chapter 3.

Issues and Opportunities Paper

The Issues and Opportunities Paper addressed the following policy areas:

- 1) Kaua’i Kākou
- 2) Growth Management and Land Use
- 3) Economic Development
- 4) Agricultural Lands
- 5) Tourism
- 6) Open Space
- 7) Affordable and Workforce Housing
- 8) Climate Change and Natural Hazards
- 9) Infrastructure and Public Services

- 10) Multimodal Land Transportation
- 11) Energy
- 12) Public Health
- 13) Cultural and Heritage Resources
- 14) Natural Resource Management and Conservation
- 15) Parks and Recreation
- 16) Government Operations and Fiscal Management

For each policy area the paper addressed the primary issues, and the opportunities that exist for the General Plan to address. The final report was released in September 2015. The report was made available via the General Plan website, and was sent to CAC members.

Community Voices from the Survey

“Designate areas for future residential growth within each planning region. Provide the necessary infrastructure to support areas of future growth.”

“Help small farmers. Assist in distribution of local produce/products so that retailers can order as easily and reliably as they do from off-island.”

“Find some way to house every person living on the island who wants to be housed.”

“We need to educate our children more about the drugs around Kaua’i and the choices they can make to have a healthy and happy life.”

“Complete streets needs to be retroactively applied to all main thoroughfares in Kaua’i neighborhoods such as Kuamo’o St and Kamalu Rd.”

YOUTH ENGAGEMENT THROUGH ARTS & EDUCATION

A special emphasis was placed on ensuring the voice of Kaua'i's youth is reflected in the plan. Input from youth, from elementary to college students, was obtained throughout the planning process, and is described below.

Elementary School Outreach Keiki Art Contest

More than 300 entries were received for an elementary school level Keiki Art Contest that ran from April 1-May 22, 2015. Twelve public and private

schools across the island participated, and winners were announced in June 2015. The theme was "I Love My Community Because..." Entries demonstrated what keiki treasure about Kaua'i today and what they would like to see in the future.

Top 5 Themes

1. Recreation
2. Nature
3. Development
4. Community/People
5. Sustainability

4. There should be more roads on Kauai because it depends on where the buildings are.

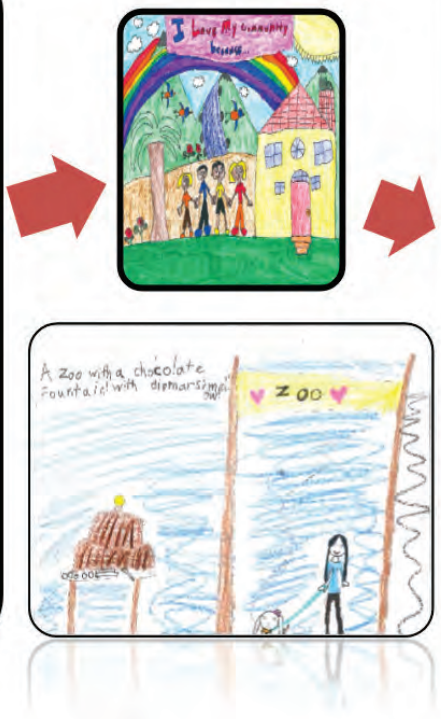
5. We should put all of the buildings in a small place so we could have more houses.

6. We should have less buildings in a big area when theres alot of space to do things.

7. They should be 3 floors tall because each floor has the own thing for example, store, food, and stay.

8. It should be a place where kids stay inside using electricity.

9. The parks should be really fun so kids will go there everytime and also to run around and get exercise.



Top 5 themes

1. Recreation
2. Nature
3. Development
4. Community/People
5. Sustainability



Poster for the "I Love My Community Because" Keiki Art Contest



Mayor Bernard Carvalho with the winner of the Keiki Art Contest, a 4th Grader at Kapa'a Elementary School

What Kaua'i's Keiki Value



More than 300 entries in the Keiki Art Contest depicted why the children of Kaua'i love their community, and what they would like to see in the future. The key themes emerged as:

Recreation - People enjoying nature at the beach, mountains, and ocean

Nature - Kauai's beauty

Development - Zoos, housing, parks, commercial, fun activities, bike paths/sidewalks/crosswalks

Community/People - Family and friends spending time together

Sustainability - Gardens, recycling

Middle & High School Outreach

Career Day

County Planning Staff presented at a Career Day event at Chiefess Kamakahelei Middle School in October of 2015.

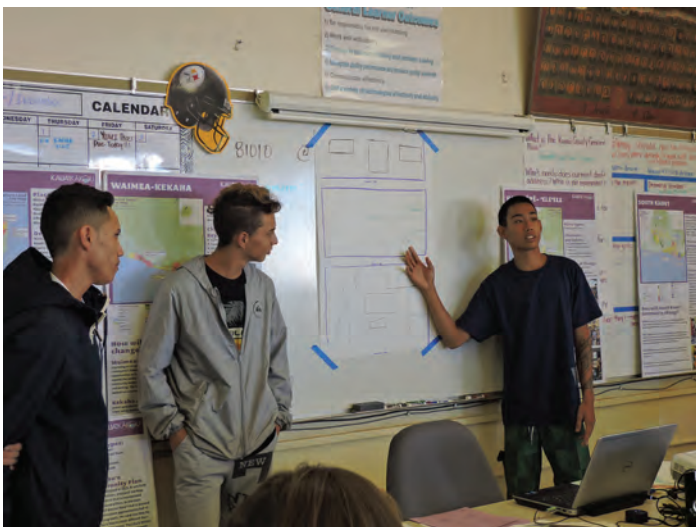
Middle School Planning Curriculum

The County Planning Department began working with The Learning Coalition (TLC) in Honolulu and the State Department of Education in the fall of 2015 to develop a classroom curriculum about Community Planning, including the General Plan. As part of this effort, an instructor at Chiefess Kamakahelei Middle School formed a Junior Planner Club. County Planning Department Staff made a presentations to the club and engaged them in an activity on this General Plan process.

High School Outreach

During December 2016 the County Planning Department engaged with 135 highschool students at three highschools, Kaua'i High School, Waimea High School, and Kapa'a High School. The County Planning Department shared discussion draft General Plan actions for housing, transportation, and climate change. At Waimea High School, the planning staff conducted a presentation specific to the watershed topic, and land use proposals for the West Side.

High school students shared their input and also provided written comments to be used as public record for the public comment period.



High school students present their ideas on the General Plan, December 2016

Boys & Girls Club

Over 100 elementary, middle, and high school students participate in the General Plan policy survey. While some students took the the survey online, the majority of students completed the paper survey. A summary of the policy survey can be found in section 1.3 of the General Plan.

Kaua'i Community College Outreach

County Planning staff engaged Kaua'i Community College (KCC) throughout the General Plan Process through several venues: a presentation to faculty, presentations and meetings with classes, and meetings with the student life and student government organizations.

The primary issues of interest among students and faculty were affordable housing, sustainability and food security, preserving open space and rural character, and public access to recreational places. In December 2016, a pop-up event was held at the Student Life Lounge for students to provide input on the discussion draft. It is estimated that over 100 students and faculty participated in the General Plan Process between September 2015-December 2016. The table on the next page lists the outreach events conducted at KCC.

How Input Was Used

Input from community members, local organizations, and government agencies provided grounded framing to this General Plan process. It helped to determine what was relevant, what needed updating, and what new issues or opportunities are emerging.

This General Plan Project Team developed a system for comment tracking and sorting early in the planning process so that comments could be saved, referenced, and cross-referenced to key policy topics. Sources of community input were drawn from:

- Written and verbal comments at CAC Meetings, community meetings, and community "pop-up" events
- E-mails sent by community members to the plankauai@kauai.gov e-mail address
- Comments received by mail
- Submissions to the project website comment form
- Notes from small group meetings with community organizations

Kaua'i Community College Outreach	
Month/Year	Event
June 2015	Small group presentation to Phi Theta Kappa
August 2015	Presentation to student government
September 2015	Presentation to a "changing world class"
September 2015	Meeting with student activists
November 2015	Presentation to philosophy class
May 2016	Presentation to sustainability class
October 2016	Presentation to GIS class
October 2016, December 2016	General Plan presentation to sustainability class
November 2016	Presentation at KCC Biological Science Week
December 2016	Pop-up event at KCC Student Life

- Comments, writing, and artwork from youth participants

All comments received through the website, e-mail, and social media were transcribed and compiled in a public comment matrix that was made available on the project website and periodically updated. More than 120 comments were received and compiled in the public comment matrix as of September 2016. These are in addition to the many comments received and recorded at CAC meetings and community events.

Comments received through all platforms were sorted into files by issue or policy topic to be referenced during the preparation of this General Plan.

Developing the General Plan Vision

The Vision for Kaua'i was developed and refined with extensive input from the community and CAC. The update of the General Plan Vision involved asking the community for their views on where Kaua'i is today, whether the vision from 2000 remains relevant, and how Kaua'i has been doing as a County and community in realizing the vision. Confirming the key issues and opportunities that should drive policies moving forward, and going out to communities to envision how they see themselves changing and which elements are most important to preserve.

The Vision for Kaua'i was a major focus of community outreach for this General Plan. Community members were asked to revisit the Vision Statement from the

2000 General Plan, provide input on its continued relevance, and suggested changes to adapt it to Kaua'i today. Comments were received from a wide variety of sources, including polls, community meetings, CAC discussions, small group meetings, e-mail comments, and comments received during the Kaua'i Farm Fair and Pop-Up Week. The great majority of participants polled formally and informally indicated that they felt the existing Vision for Kaua'i 2020 was mostly or partially accurate, but needed some updating in order to reflect the community's vision and values. Very few felt that the statement should either be accepted or

rejected in its entirety.

Approach to Updating the Vision

- Key statements and ideas from the 2000 General Plan that continue to resonate strongly have been preserved.
- For those statements that the community felt needed updating, the revised language preserves some of the same thoughts and organizational structure, but updates it with words and concepts that better capture the community sentiment.
- New ideas that were missing from the 2000 General Plan were added to existing statements where possible, and crafted into to new statements where appropriate.

People were also asked how successful Kaua'i has been in implementing the Vision of the 2000 General Plan. Most gave low marks on where Kaua'i is today with regards to achieving the vision, and asked that this General Plan strengthen accountability for implementation.

A draft Vision was prepared based on this initial input, using the approach described above. It was presented to the CAC and the community and made available online. The draft Vision was also presented in small group meetings with County agencies and community groups, and at the 2015 Kaua'i Farm Fair, where participants were asked to vote for their highest priority statement. Vision statement review

at the Kaua'i Farm Fair was done over a three-day process during August 2015 in Līhu'e. The resulting input was used to refine the Vision that approves the Draft Plan.

APPENDIX C - GROWTH TRENDS AND PROJECTIONS

Introduction

This Appendix summarizes the Socioeconomic Analysis and Forecasts (2014) technical report that was prepared for this General Plan and provides the basis for growth projections in population, housing, employment, and other demographic and socioeconomic characteristics. A Technical Advisory Committee comprised of community members and agencies was assembled to review and provide input on this and other technical reports for the General Plan. The following Sections provide an overview of the findings.

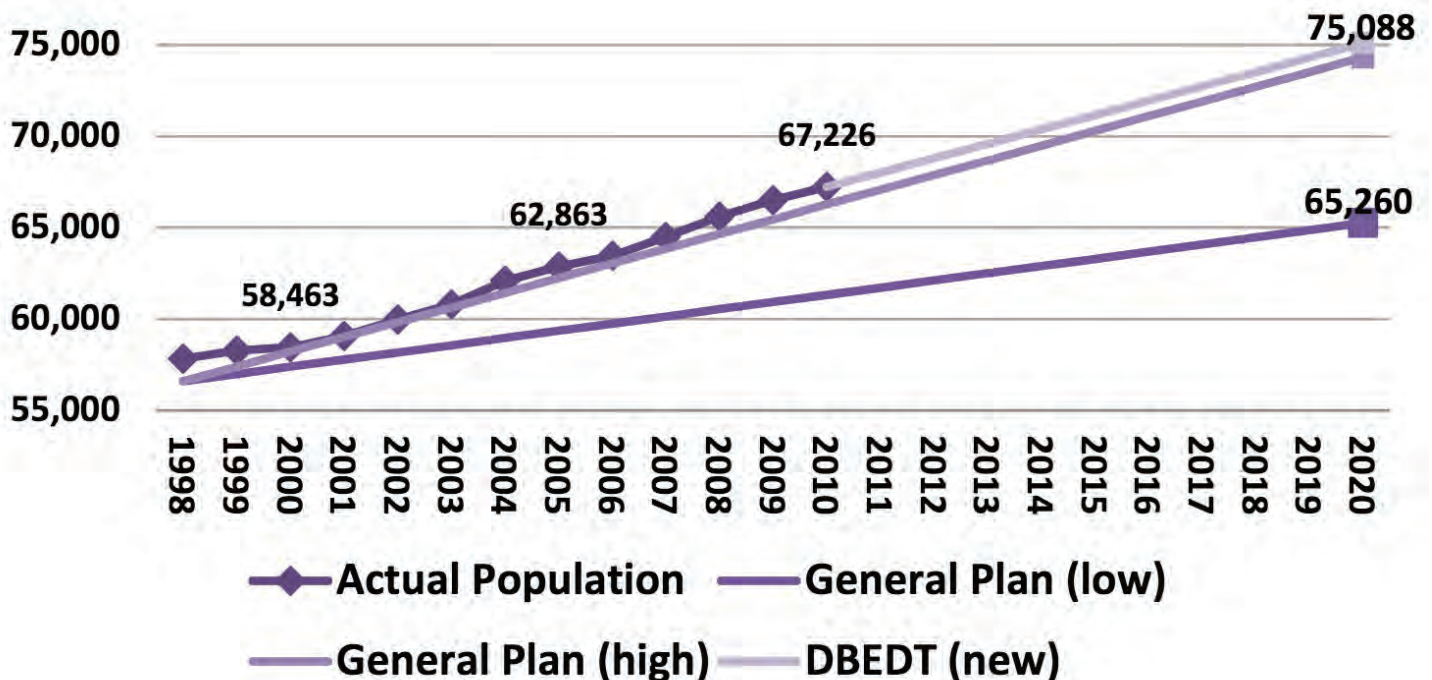
Another key technical report prepared to inform the General Plan’s growth projections was the Land Use Buildout Analysis (2015). Using the population and housing projections contained in the socioeconomic study, the land use buildout study inventoried existing land use designations and determined whether additional designated lands would be needed to accommodate projected residential, commercial, industrial, resort, and other land uses.

How the 2000 General Plan Handled Growth Projections

Projections for growth contained in the 2000 Kaua’i General Plan were derived from two technical studies: one that examined future trends based on projections of existing data from the State Department of Business, Economic Development, and Tourism (DBEDT), and a second that presented alternative, value-driven growth projections reflecting a significantly lower growth rate. The

alternative projections used the visitor population as “the most important factor in estimating Kaua’i’s future economy and population.” The projections in these two studies were presented in the 2000 General Plan as “high” and “low” growth projections for resident population, average daily visitor census, total population, and jobs. The projections were not intended to serve as targets or limits to growth, but as tools for forecasting land supply and infrastructure needs.

Figure 1. Actual vs. Projected Population Growth (1998-2010)



Population Trends and Projections Trends Since the 2000 General Plan

As shown in the figure below, the actual rate of population growth since the last count in 2010 has closely followed the “high” growth projection rate in the 2000 General Plan. The “high” projection was based on a linear projection of population data from DBEDT.

Sources of Growth

The graph in Figure 2 shows sources of population change on Kaua’i between 2000 and 2012.

Over the past 15 years, the population growth due to natural increase (rate of births to deaths) has greatly exceeded the contribution of migration.

County-Wide Projections

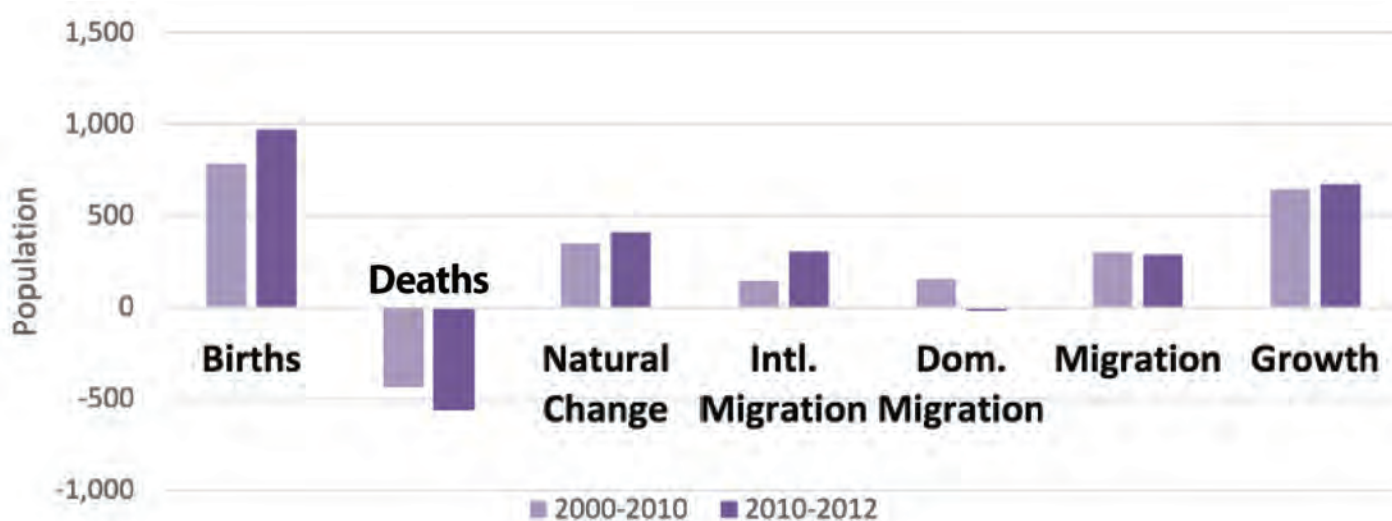
The County population forecast was developed as a linear projection from the last recorded population data released by the State Department of Business, Economic Development, and Tourism (State of Hawai’i Data Book, 2013). Historical data was taken from the State of Hawai’i Data Book published annually by the Department of Business, Economic Development, and Tourism (State of Hawai’i Data Book, 2013).

The total population for the County of Kaua’i is projected to increase from 67,091 in 2013 to 88,013 in 2035. That represents a total growth of 31.2% between 2010 and 2035, or about 1.10% per year.

SMS Research Kaua’i 2035 General Plan: Socioeconomic Analysis and Forecasts (2014)

Table 1 and Figure 3 show the population forecast for the County of Kaua’i through 2035. The line in Figure 3 tracks the population, while the bars indicate the annual population growth rate. The model assumed a moderate growth rate of 1.10% per year between 2010 and 2035.

Figure 2. Components of Population Change (2000-2012)



*Bars for 2000-2010 and 2010-2012 show average change per year.

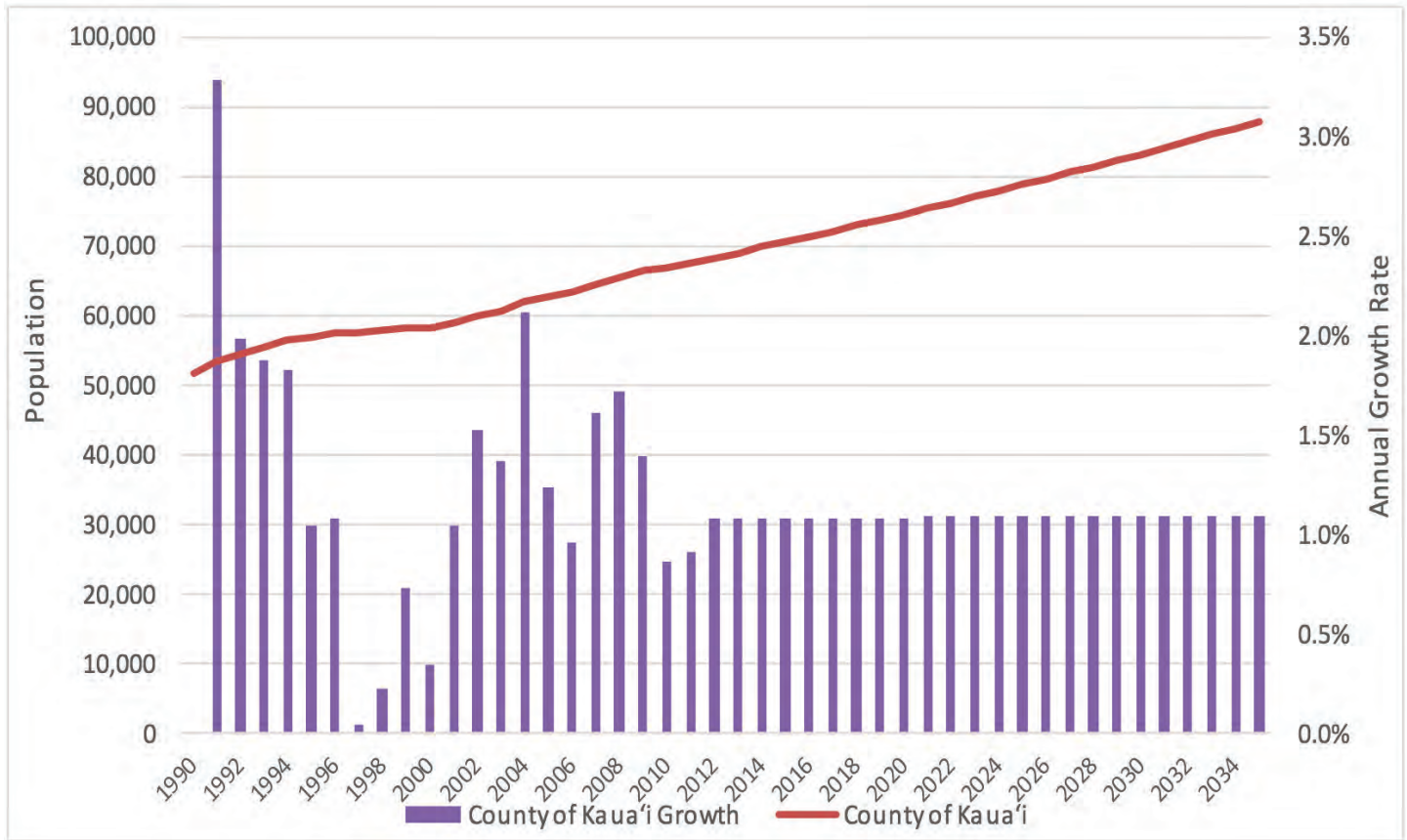
Intl. means International.

Dom. means Domestic.

Table 1. Kaua'i County Population (1990-2035)

Year	1990	2000	2010	2020	2030	2035
County of Kaua'i	51,676	58,463	67,091	74,693	83,328	88,013
Average Annual Growth Rate		1.24%	1.39%	1.08%	1.10%	1.10%

Figure 3. Kaua'i County Population (1990-2035)



Population Projections by Planning District

As shown on Table 2 and Figure 4, a great majority of population growth is planned to occur in the Līhu‘e and South Kaua‘i districts (Kōloa-Po‘ipū-Kalāheo). The Līhu‘e district had 21.9 percent of Kaua‘i’s population in 2010 and is expected to house 26.6 percent in 2035. The Kōloa-Po‘ipū-Kalāheo area had 17.4 percent of the County population in 2010 and will have up to 18.5 percent on 2035.

Policies and actions to address this anticipated growth are reflected in the Community Plans for the Līhu‘e and South Kaua‘i Districts that were completed and adopted in 2015. The percentage of the County’s population in each of the remaining districts will decrease slightly by 2035.

The Līhu‘e District is expected to absorb nearly half of the island’s population growth through 2035, in keeping with the County’s policy of designating Līhu‘e as the island’s main center of population and employment.

Table 2. Kaua‘i County Population, Island-wide and By District (1990-2035)

Year	1990	2000	2010	2020	2030	2035
County of Kaua‘i	51,676	58,463	67,091	74,693	83,328	88,013
Līhu‘e	11,169	12,507	14,683	18,017	21,595	23,456
South Kaua‘i	9,600	10,545	11,696	13,623	15,737	16,855
Hanapēpē-‘Ele‘ele	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 Kaua‘i	16,192	18,784	20,992	22,403	24,128	25,110

Jobs Trends Since the 2000 General Plan

The 2000 General Plan used a high and low estimate for jobs, as a factor of population growth. Figure 5 shows that number of actual jobs on Kaua‘i in 2010

was higher than the high estimate predicted in the last General Plan. However, the rate of job growth, indicated by the slope of the lines on the graph, is closer to the low estimate contained in the 2000 General Plan. This slower rate of growth means that if the 2000 GP estimates are projected beyond 2020, the job numbers would likely to be closer to the low estimate provided in the 2000 General Plan.

County-Wide Job Projections

According to the 2014 Socioeconomic Analysis and Forecasts technical report prepared for the GP Update, average annual job growth for the County of Kaua‘i is expected to equal 0.79% between 2015 and 2020. Between 2020 and 2030, job growth is expected to occur at an average annual rate of 0.66%. The rate is expected to dip again to 0.53% during the period between 2030 and 2035, adding less than 1,000 jobs. Economic opportunity is a key issue for Kaua‘i moving forward, to ensure that Kaua‘i’s residents not only have access to jobs, but can earn a living wage that can support housing and transportation needs.

Job Projections by Planning District

The Līhu‘e Planning District has historically been the main job center on Kaua‘i. With the policy to direct the majority of future growth to Līhu‘e, that trend is expected to continue for the next 20 years, with

more jobs and a higher growth rate. The South Kaua‘i and the East Kaua‘i Districts have the next highest volumes of jobs in the County.

Between 2010 and 2035, average annual job growth for Kaua‘i’s six planning districts is expected to range from 1.23 percent for Līhu‘e to 0.37 percent for the

Figure 4. Population by Planning District (1990-2035)

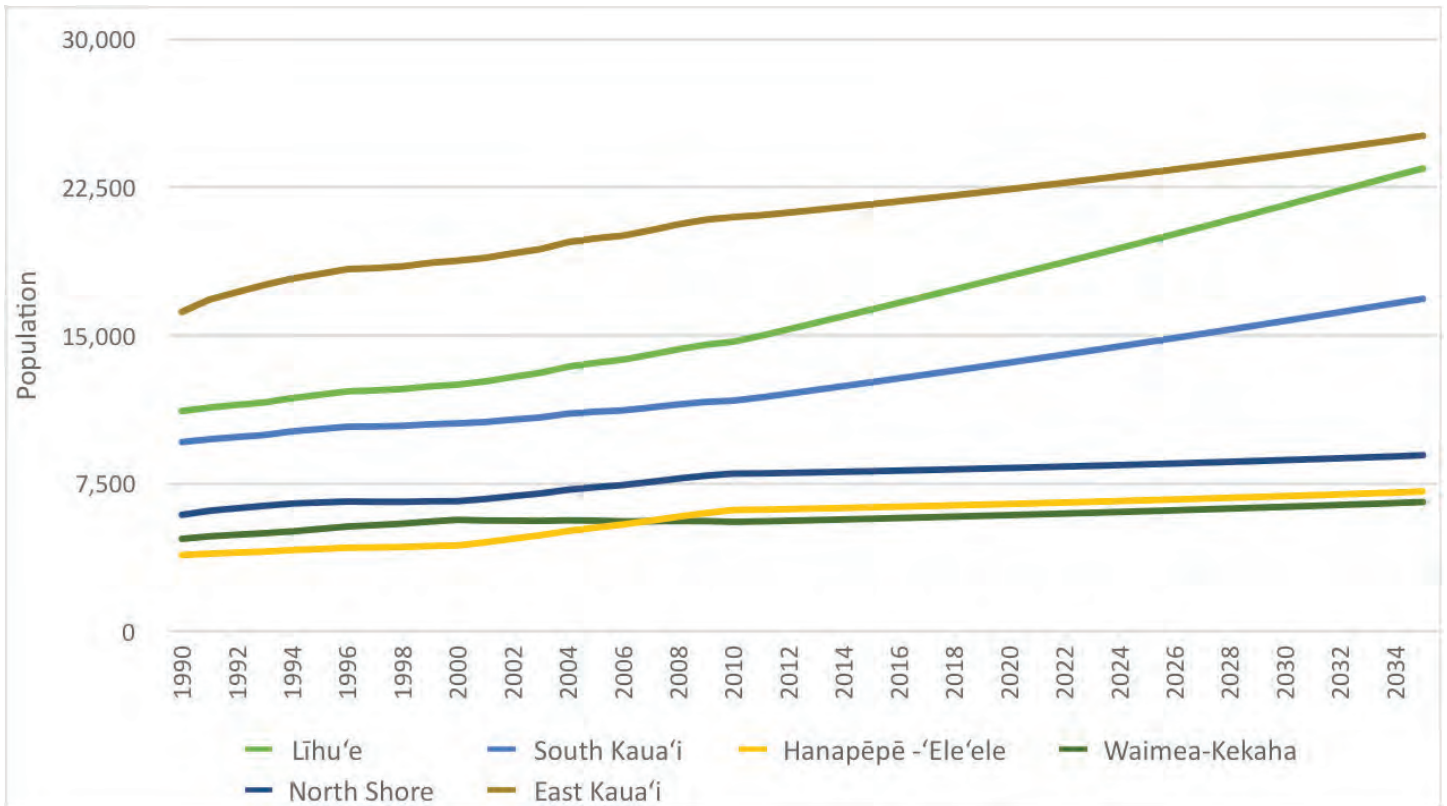


Figure 5. Actual vs. Projected Job Growth (1990-2011)

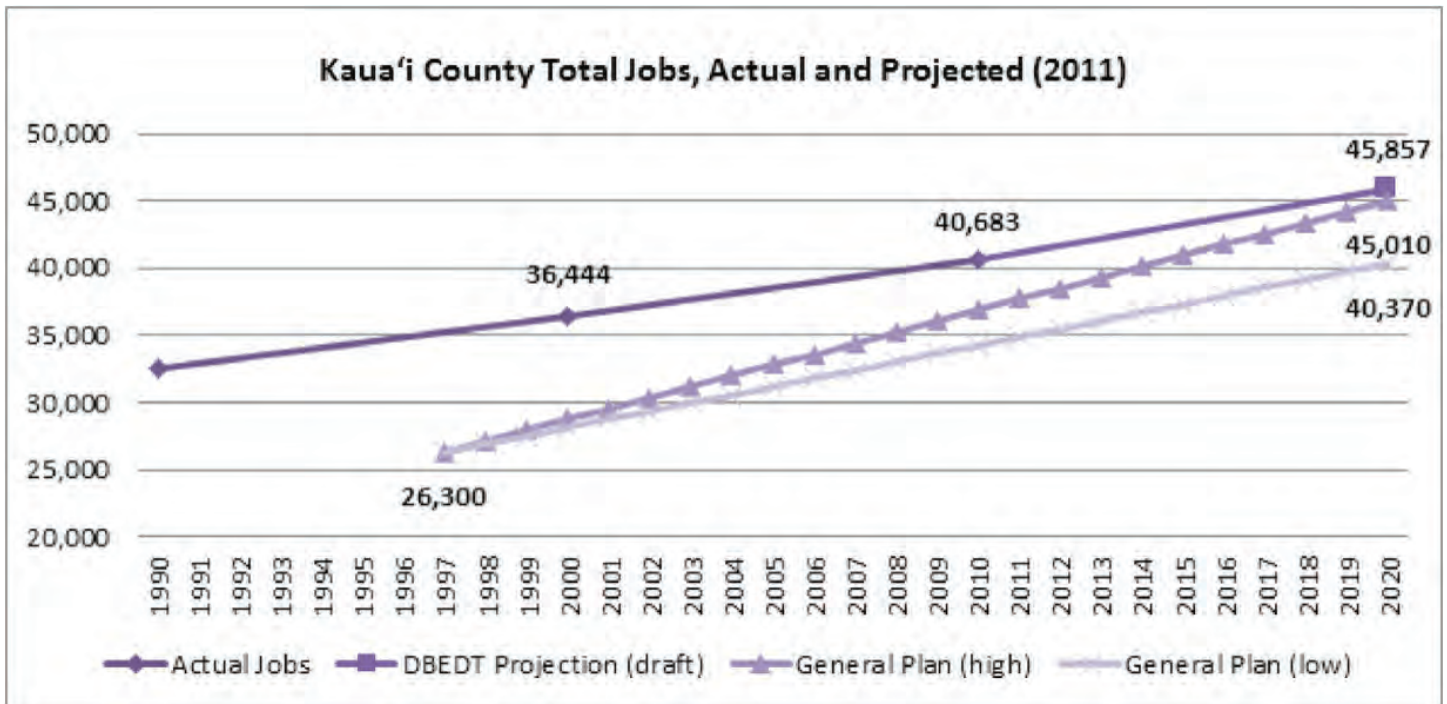


Table 3. Kaua'i County Jobs By District (1990-2035)

Year	1990	2000	2010	2020	2030
County of Kaua'i	30,350	28,150	31,900	34,000	34,900
Līhu'e	12,473	12,554	14,519	15,820	16,403
South Kaua'i	5,299	5,027	5,617	5,892	6,003
Hanapēpē-'Ele'ele	999	695	779	821	838
Waimea-Kekaha	1,888	1,791	1,986	2,064	2,094
North Shore	4,143	3,513	3,801	3,839	3,839
East Kaua'i	5,548	4,570	5,199	5,565	5,724

North Shore district. From approximately 2016-2020, Līhu'e is expected to have an average annual job growth rate of 1.06 percent. In the following decade, this rate is projected to be slightly lower (0.90% per year) and between 2030 and 2035, Līhu'e's anticipated annual growth rate for jobs is 0.74 percent.

Over the two decades preceding this General Plan, a substantial number of jobs were generated within the visitor industry (arts, entertainment, recreation, accommodations, and food services). While Līhu'e has had fewer of these jobs than the rest of the County (20% vs. 22% in 2010), the difference is not large. On the other hand, Līhu'e District has had larger shares of non-visitor industry jobs in several areas, including retail trade (18% vs. 12%); transportation, warehousing, and utilities (8% vs. 5%); finance insurance and real estate (7% vs. 5%); public administration (7% vs. 5%); wholesale trade (3% vs. 2%); and the information industry (3% vs. 1%). Most of the types of jobs projected by DBEDT to increase are included in the job types listed above. Thus, it is assumed that Līhu'e will continue to hold its position as the center for employment in the County and to increase the percentage of new jobs compared to other districts.

Households

The number of households⁵³ in the County is a function of the population in any given year and the average household size. The Census equates a household with an occupied housing unit.

Historical data for the number of households on Kaua'i was taken from the U.S. Decennial Census for Hawai'i in 1990 and 2000, and from the American Community Surveys for 2008 through 2011. Data from the Hawai'i Housing Planning Study, 1992, 1997, 2003, 2006, and 2011 were used to supplement this historical data. The same sources provide figures for household size and persons living in group quarters.⁵⁴ Persons per household data were obtained from the Decennial Census for 1990 and 2000. American Community Survey data was included for 2008 through 2011.

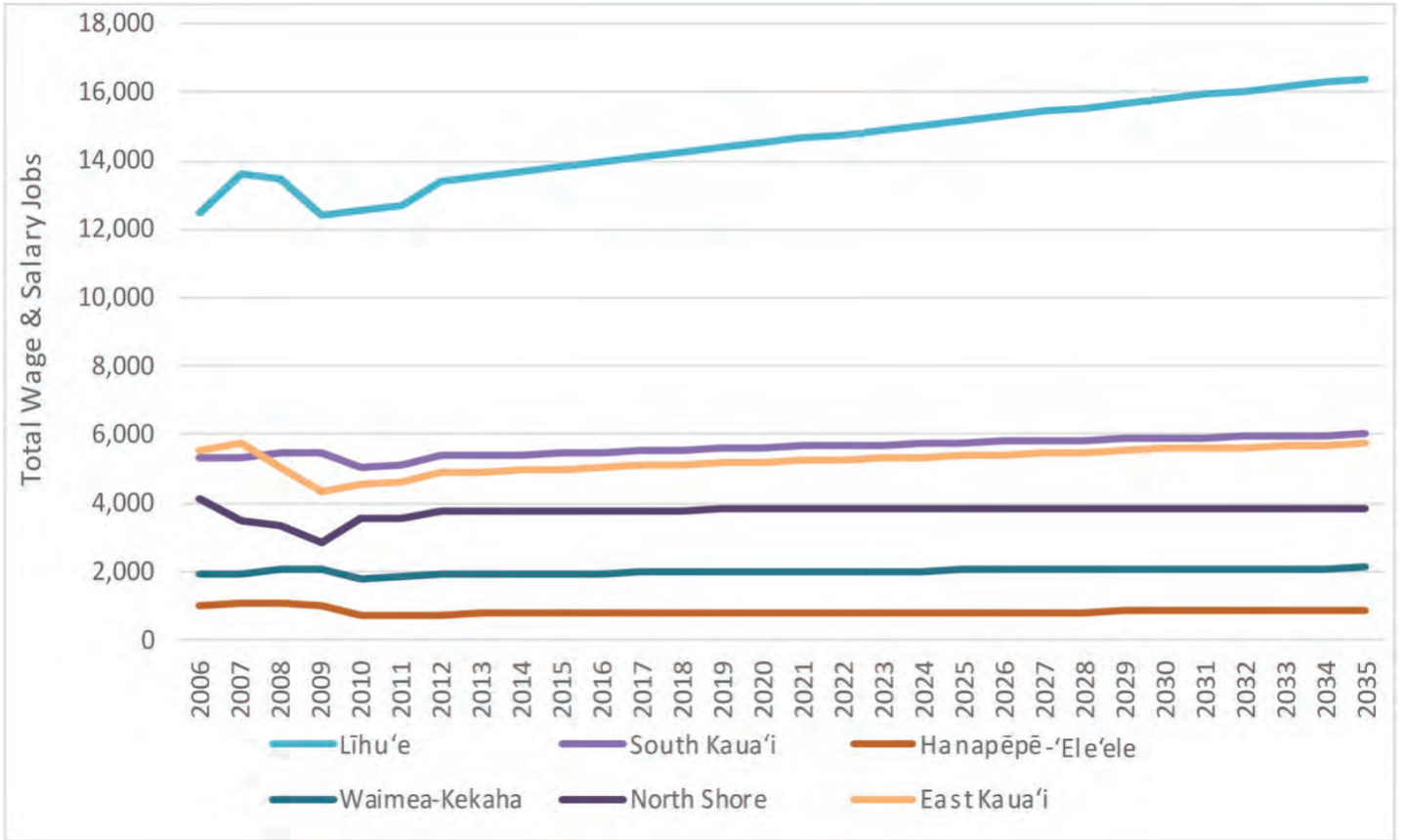
The forecast method for households employed three steps:

1. Determine the number of persons per household, defined as the ratio of total persons in the population to total households.
2. Forecast the persons per household.
3. Divide the persons living in households by the

⁵³ The U.S. Census Bureau defines a household as those persons who reside in a residential housing unit. Residents are defined as persons who report that the residence is their usual place of residence, sleep there most of the time, and take their meals there. Persons who reside at the housing unit for less than five months of the year are not considered part of the household. Households may be family households or non-family households, which can include some unrelated individuals. The household size is the number of individuals who reside in a given housing unit.

⁵⁴ Persons who do not live in households are classified as "In Group Quarters." Their number includes persons in institutionalized settings (hospitals, prisons, dormitories, nursing homes, etc.) and groups of unrelated individuals occupying a housing unit.

Figure 6. Jobs by Planning District (2006-2035)



average household size to arrive at the number of households.

County-Wide Projections

Table 4 and Figure 7 show the household forecast for the County of Kaua'i through the year 2035. The forecast is based on an assumption that the ratio of persons to households will modestly increase from 2.89 in 2010 to 2.90 in 2035. The line in Figure 7 tracks the household counts and the bars indicate the annual growth rate.

The total number of households in the County of Kaua'i is projected to increase from 23,984 in 2013 to 30,349 in 2035. That represents a total growth of 31.2 percent between 2010 and 2035, or about 1.07 percent per year.

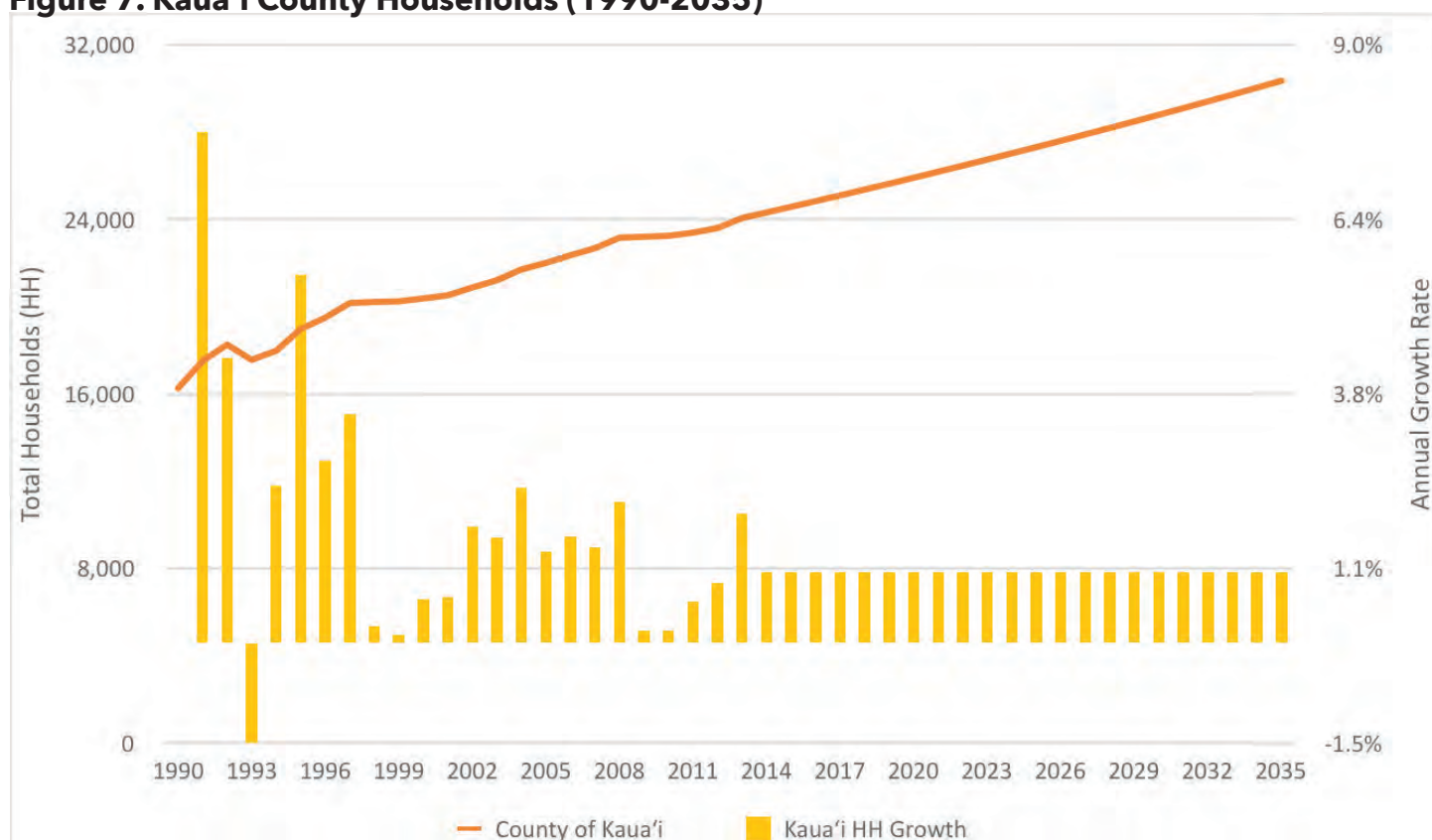
Projections by Planning District

Table 5 and Figure 8 show the forecast number of households by planning district. As with population, the Līhu'e Planning District is planned for the largest increase in total households. Līhu'e is identified by the General Plan policy as a growth center, and is expected to increase its number of households by 48 percent during the next 25 years. This equates to an average annual increase of 1.7 percent. South

Table 4. Kaua'i County Households (1990-2035)

Year	1990	2000	2010	2020	2030	2035
County of Kaua'i Households	16,253	20,370	23,240	25,902	28,788	30,349
Average Annual Growth Rate		0.66%	0.18%	1.06%	1.10%	1.06%

Figure 7. Kaua'i County Households (1990-2035)



Kaua'i (1.2 percent) is the only other district expected to exceed the County's average annual growth rate of 0.8 percent for households between now and 2035. The remaining districts are anticipated to have average annual growth rates of 0.7 percent or less.

Visitor Arrivals

Visitor arrivals are defined as the total number of individuals arriving from domestic and international points of departure by air and sea during a calendar year. Their number includes men, women, and children visiting from all ten of Hawai'i's major market areas (MMAs). Total visitor arrivals include both day-trippers and overnight or longer visitors. By convention, visitors staying for more than 365 days are considered temporary residents.

Historical data was taken from Hawai'i Tourism Authority, Annual Visitor Research Reports, 2000 to 2011 and the DBEDT Data Book historical database for years before 2000. DBEDT also has a long-range forecast for visitor arrivals at the State and County levels⁵⁵.

Trends Since the 2000 General Plan

Historically, visitor arrivals have been volatile on Kaua'i. Hurricane 'Iniki devastated the tourism infrastructure on Kaua'i, causing a deep rift in 1993 and a lengthy recovery period. At the next peak in 1999, Kaua'i had regained less than 90 percent of its former visitor count. After another drop following September 11, 2001, the count grew to its second peak in 2007, then fell sharply again in 2008-2009 and has been climbing out at a slower pace than the post-Iniki recovery.

The 2000 Kaua'i General Plan included low and high estimates for projected visitor growth, defined in Figure 9, actual ADVC growth has been variable, but as of 2010 was below the low General Plan estimate. Draft projections by the State Department of Business, Economic Development and Tourism (State of Hawai'i Data Book, 2013) predict that ADVC growth will closely track the 2000 General Plan's low estimate at least until 2020.

to 2040, DBEDT 2040 Series, Research and Economic Analysis Division, Department of Business, Economic Development and Tourism (March 2012)

55 Population and Economic Projections for the State of Hawai'i

Table 5. Households by Planning District (1990-2035)

Year	1990	2000	2010	2020	2030	2035
County of Kaua'i	16,253	20,370	23,240	25,902	28,788	30,349
Līhu'e	3,542	4,187	4,983	6,051	7,281	7,923
South Kaua'i	3,208	3,862	4,250	4,946	5,699	6,096
Hanapēpē-'Ele'ele	1,035	1,491	1,987	2,084	2,207	2,279
Waimea-Kekaha	1,460	1,893	1,962	2,165	2,253	2,306
North Shore	2,070	2,552	2,881	2,998	3,123	3,201
East Kaua'i	4,937	6,385	7,177	7,658	8,224	8,545

County-Wide Projections

Table 6 and Figure 10 show total visitor arrivals by air for the County of Kaua'i through the year 2035. The line in Figure 10 tracks visitor numbers and the bars indicate the average annual rates of change.

Figure 11 represents visitors to Kaua'i as the Average Daily Visitor Census (ADVC). This is an alternate way to assess the volume of visitors to the County.

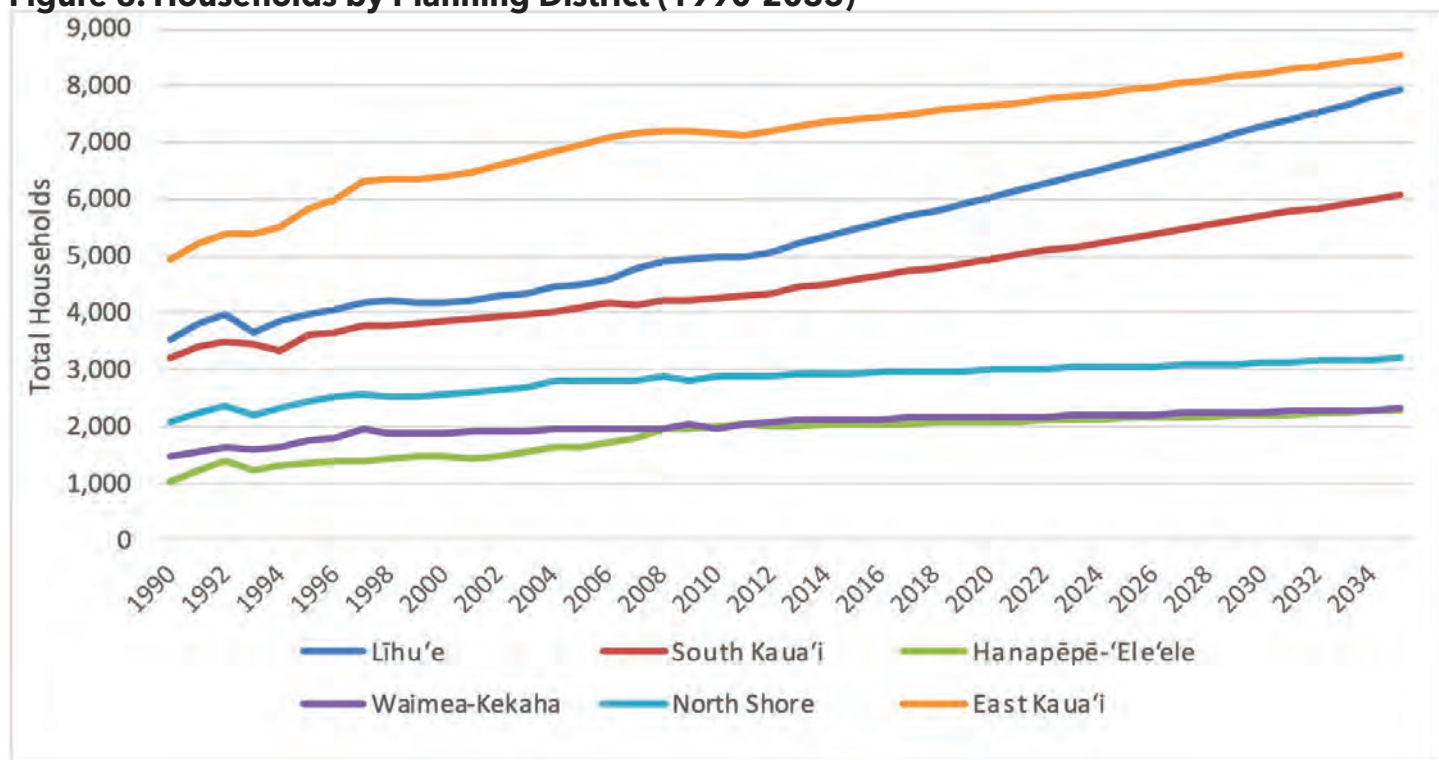
The projections show an overall growth rate of about one percent per year between 2010 and 2035, with a very slight decrease across that period. Based upon historical data, some volatility can be expected year to

year in the form of a disrupting event once every five to ten years.⁵⁶

The average length of stay (LOS) for a visitor party in Kaua'i was 7.51 days in 2011. Visitor LOS on Kaua'i was at its lowest point in 1990 at 6.14. The LOS rose to 6.8 in 2004 and then fell to 6.24 in 2007. Length of stay has increased steadily for Kaua'i visitors since 2007.

⁵⁶ Kaua'i General Plan Update: Visitor Updates, SMS Research, October 2017

Figure 8. Households by Planning District (1990-2035)



Visitor Projections by Planning District

Līhu'e has both the airport and the harbor, so all visitor "arrivals" technically occur there. Visitor accommodation units as reported in the Hawai'i Tourism Authority's (HTA) Visitor Plant Inventory were used to estimate each District's share of visitors. Table 7 and Figure 12 show the results of that method.

South Kaua'i has the highest number of visitor units and thus the largest share of visitors. East Kaua'i and the North Shore closely track one another in current and projected visitor volumes. Līhu'e District's visitor population is lower, with fewer visitor accommodations, and very few visitors stay in Waimea-Kekaha. None were assigned to the Hanapēpē-'Ele'ele District.

Figure 9. Actual vs. Projected Visitor Growth (1990-2010)

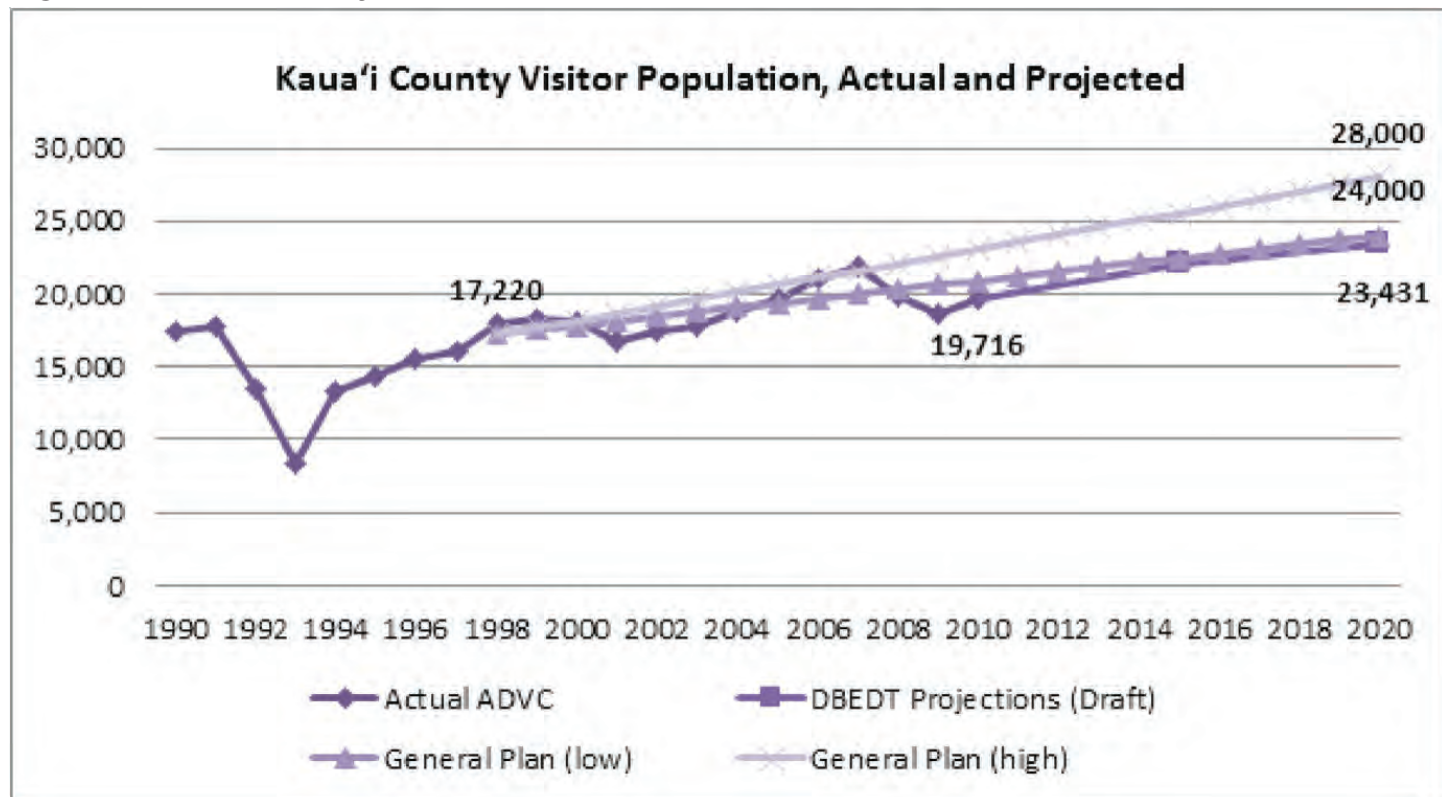


Table 6. Kaua'i County Visitor Arrivals (1990-2035)

	Year					
	1990	2000	2010	2020	2030	2035
County of Kaua'i Visitor Arrivals (x1,000)	1,229	1,075	955	1,302	1,418	1,480
Average Annual Growth Rate		-1.25%	-1.11%	3.64%	0.89%	0.87%

Figure 10. Visitor Arrivals to Kaua'i County (1990-2035)

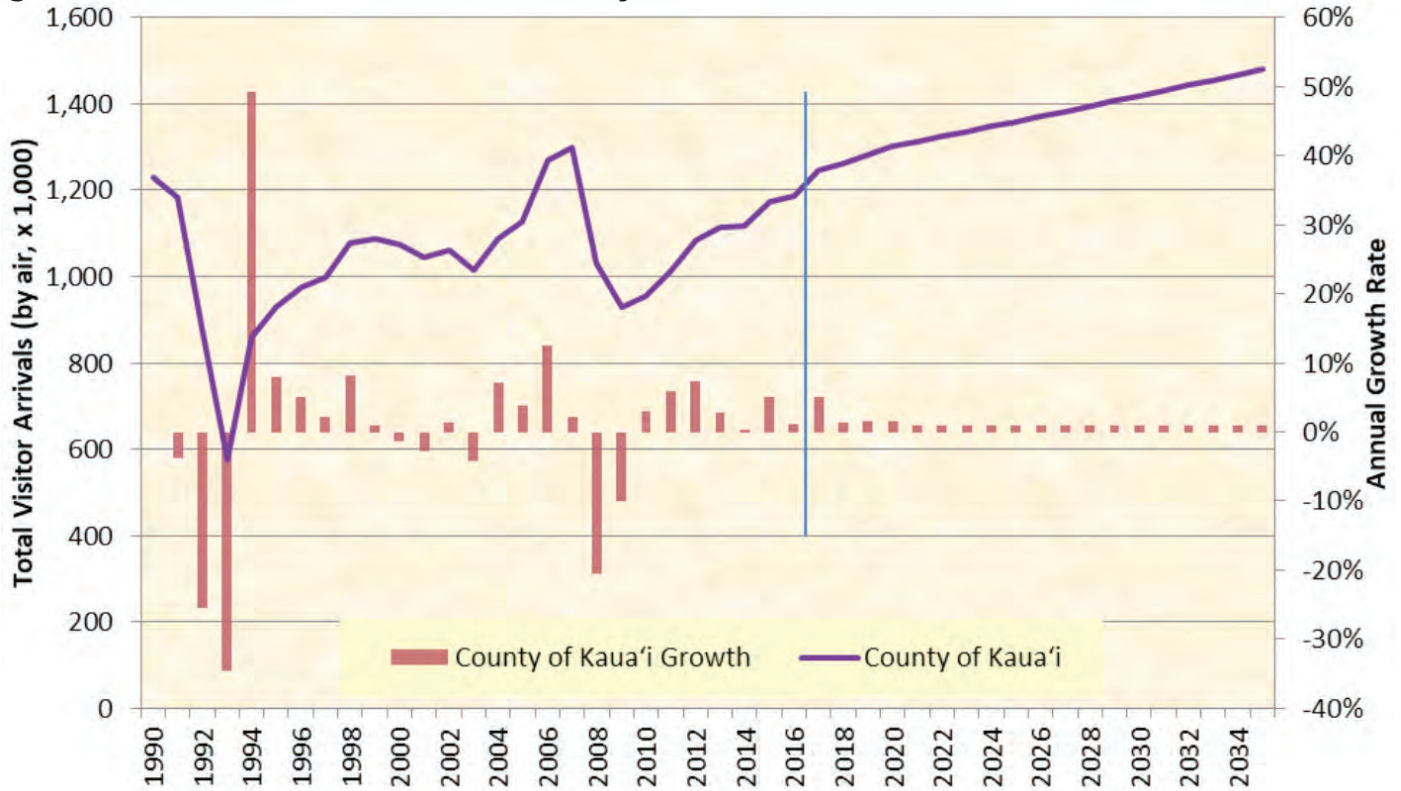


Figure 11. Average Daily Visitor Census in Kaua'i County (1990-2035)

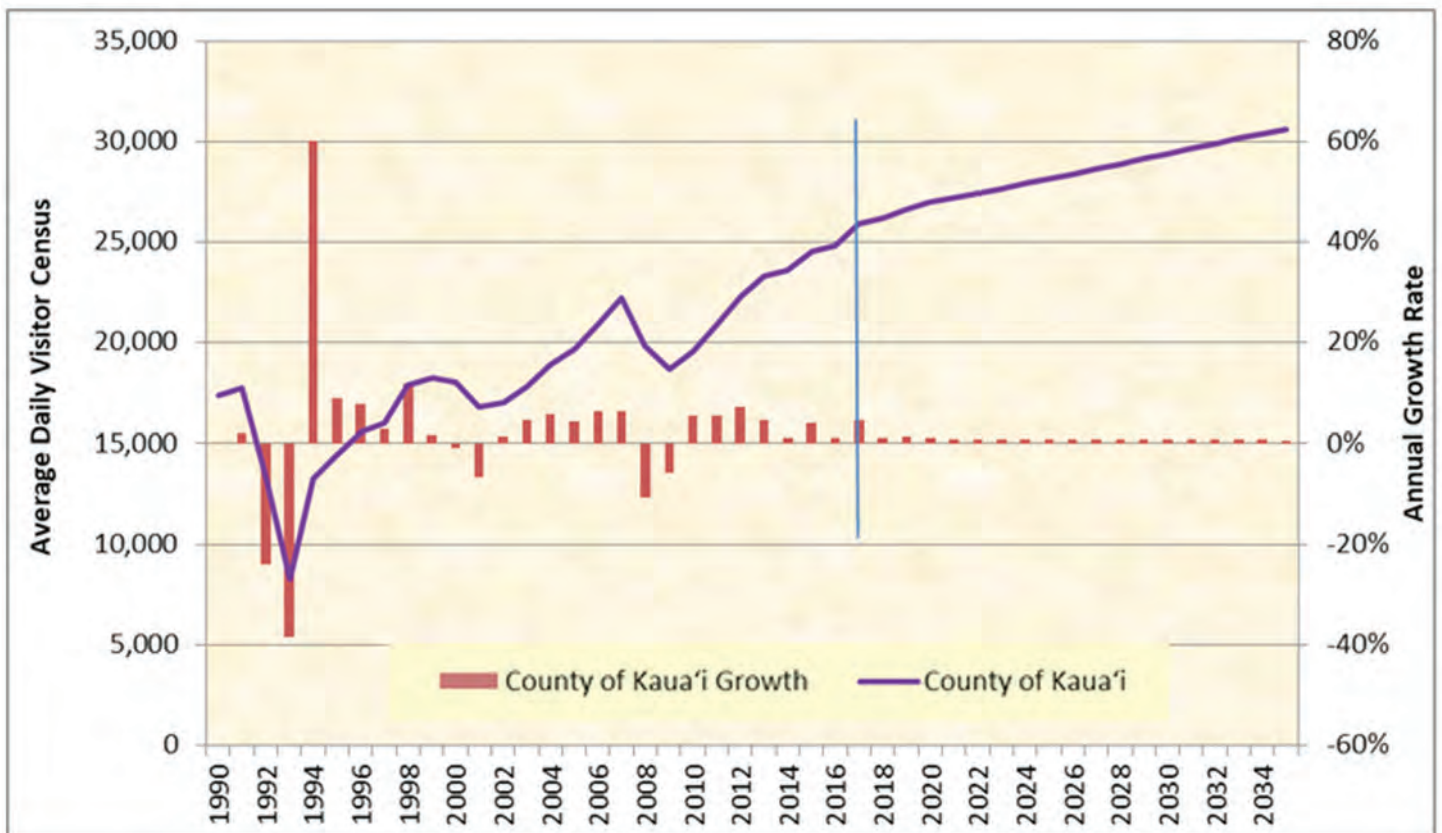
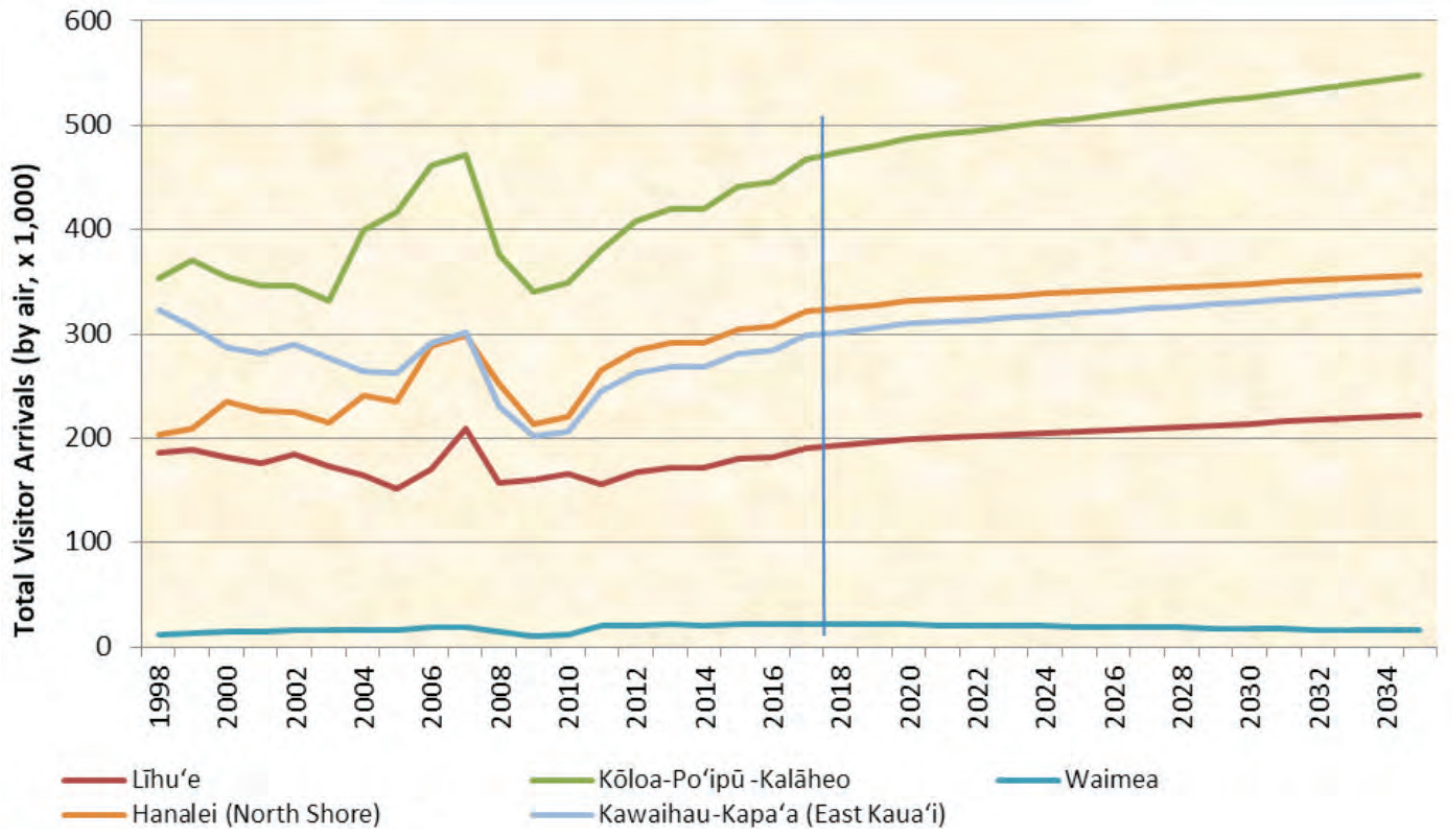


Table 7. Kaua'i County Visitor Arrivals by District (1998- 2035)

	Year					
	1998	2000	2010	2020	2030	2035
County of Kaua'i	1,078	1,075	955	1,302	1,418	1,480
Līhu'e	186	182	166	199	214	222
South Kaua'i	353	355	349	487	527	548
Hanapēpē-'Ele'ele	-	-	-	-	-	-
Waimea-Kekaha	12	15	12	21	18	15
North Shore	204	236	221	332	348	357
East Kaua'i	324	287	207	310	330	341


Figure 12. Visitor Arrivals by Planning District (1998-2035)



APPENDIX D - SEA LEVEL RISE MAPS

KAUAI CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

1 Foot Potential Sea Level Rise Scenario Hā'ena, Kaua'i



MAP CONTENTS

- Water Depth
 - Deeper
 - Shallower
- Low Lying Areas
- TMK Boundaries
- Roads


MAP DESCRIPTION


Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically disconnected from any water bodies and are shown in yellow. The map will use the elevation data contained in the state's hydrologic data. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes, nor does it consider the potential for future coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should not be used as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/sir/beta/viewer/>







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March 2014





Appendix C: Sea-level rise Inundation Assessments and Needs for Select Coastal Areas


**KAUAI CLIMATE CHANGE
AND COASTAL HAZARDS ASSESSMENT**
3 Foot Potential Sea Level Rise Scenario
Hā'ena, Kaua'i

MAP CONTENTS

Water Depth
 Deeper
 Shallower

Low Lying Areas
 Low Lying Areas

TMK Boundaries
 TMK Boundaries

Roads
 Roads


MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically connected to the ocean and are likely to be inundated. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, accretion, and sea level rise. The data does not consider future changes in coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should not be used as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/sir/beta/viewer/>



Scale:
0 250 500 1,000 1,500 2,000
Feet
1:110,000

March 2014




Appendix C: Sea level rise inundation Assessments and Needs for Select Coastal Areas

**KAUA'I CLIMATE CHANGE
AND COASTAL HAZARDS ASSESSMENT**
6 Foot Potential Sea Level Rise Scenario
Hā'ena, Kaua'i

MAP CONTENTS

Water Depth
 - Deeper
 - Shallower

Low Lying Areas
 - TMK Boundaries
 - Roads




MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low lying areas, depicted in green, are hydrologically disconnected from the ocean and are not subject to inundation. The elevation data captures the area's hydraulics. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, subsidence, or future construction. The data does not consider the susceptibility of infrastructure to coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
 The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should be used strictly as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
 National Oceanic and Atmospheric Administration (NOAA),
 Ocean Services, Coastal Services Center (November 2013)
<http://sc.noa.gov/slr/beta/viewer/>



Scale:
 0 250 500 1,000 1,500 2,000
 Feet
 1:10,000

March 2014




Appendix C: Sea level rise Inundation, Assessments and Needs for Select Coastal Areas

**KAUAI CLIMATE CHANGE
AND COASTAL HAZARDS ASSESSMENT**
1 Foot Potential Sea Level Rise Scenario
Hanalei, Kauai

MAP CONTENTS

Water Depth
Deeper
Shallower

Low Lying Areas
TMK Boundaries
Roads




MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically disconnected from the ocean and are not subject to inundation. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as accretion, subsidence, or erosion. The data does not include potential impacts from future coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by users. Maps should not be used as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/slr/beta/viewer/>

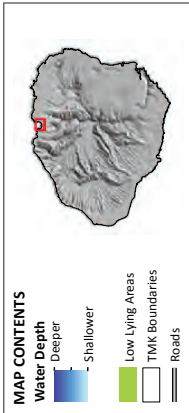


Scale: 0 250 500 1,000 1,500 2,000 Feet
1:110,000
March 2014



Appendix C: Sea level rise inundation Assessments and Needs for Select Coastal Areas

**KAUAI CLIMATE CHANGE
AND COASTAL HAZARDS ASSESSMENT**
6 Foot Potential Sea Level Rise Scenario
Hanalei, Kauai



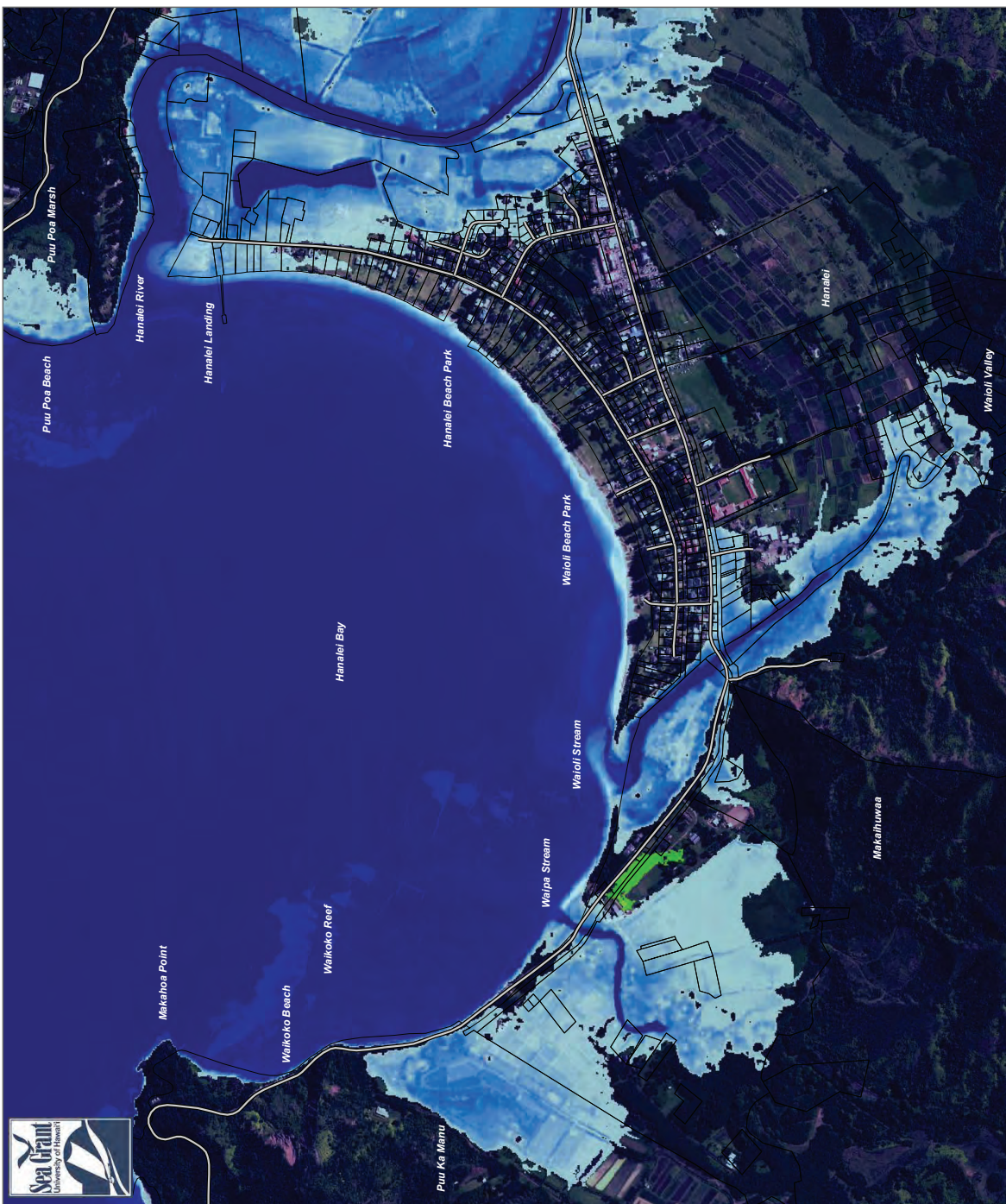
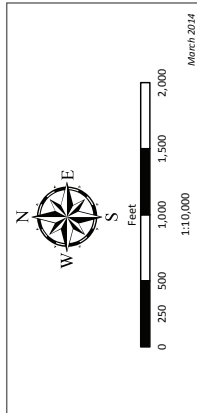
MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low lying areas, depicted in green, are highly susceptible to inundation. The map also shows the TMK boundary wall the elevation data captures the area's hydraulics. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, subsidence, or future construction. The data also does not consider the susceptibility of the area to natural hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
 The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should be used strictly as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
 National Oceanic and Atmospheric Administration (NOAA),
 Ocean Services, Coastal Services Center (November 2013)
<http://sc.noa.gov/slr/beta/viewer/>




Appendix C: Sea level rise Inundation Assessments and Needs for Select Coastal Areas

KAUA'I CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

1 Foot Potential Sea Level Rise Scenario Anahola, Kaua'i

MAP CONTENTS

- Water Depth
 - Deeper
 - Shallower
- Low Lying Areas
- TMK Boundaries
- Roads




MAP DESCRIPTION


Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically unconnected to the ocean and are shown in a lighter shade of green. The elevation data came from the U.S. Hydrologic. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, accretion, or future coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by users. These data should not be used as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/sir/beta/viewer/>





0 250 500 1,000 1,500 2,000
Feet
1:110,000

March 2014
15




Appendix C: Sea-level rise Inundation Assessments and Needs for Select Coastal Areas

KAUAI CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

3 Foot Potential Sea Level Rise Scenario Anahola, Kaua'i

MAP CONTENTS

- Water Depth
 - Deeper
 - Shallower
- Low Lying Areas
- TMK Boundaries
- Roads




MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically unconnected to the ocean and are shown in a lighter shade of green. Well the elevation data captures the island's hydrology. A more detailed analysis of these areas is required to determine the susceptibility to flooding.


Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, accretion, and subsidence. The data does not consider future changes in coastal hydrology and natural processes such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by users. These maps should not be used as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/sir/beta/viewer/>



1:110,000



0 250 500 1,000 1,500 2,000

March 2014



Appendix C: Sea level rise inundation Assessments and Needs for Select Coastal Areas

**KAUA'I CLIMATE CHANGE
AND COASTAL HAZARDS ASSESSMENT**
6 Foot Potential Sea Level Rise Scenario
Anahola, Kaua'i

MAP CONTENTS

- Water Depth
 - Deeper
 - Shallower
- Low Lying Areas
- TMK Boundaries
- Roads




MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low lying areas, depicted in green, are hydrologically disconnected from the ocean and are not subject to tidal inundation. The elevation data captures the area's hydraulics. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, subsidence, or future construction. The data also does not take into account the potential for future hurricanes, typhoons, and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should be used strictly as a planning reference and not for navigation, permitting, or other legal purposes.

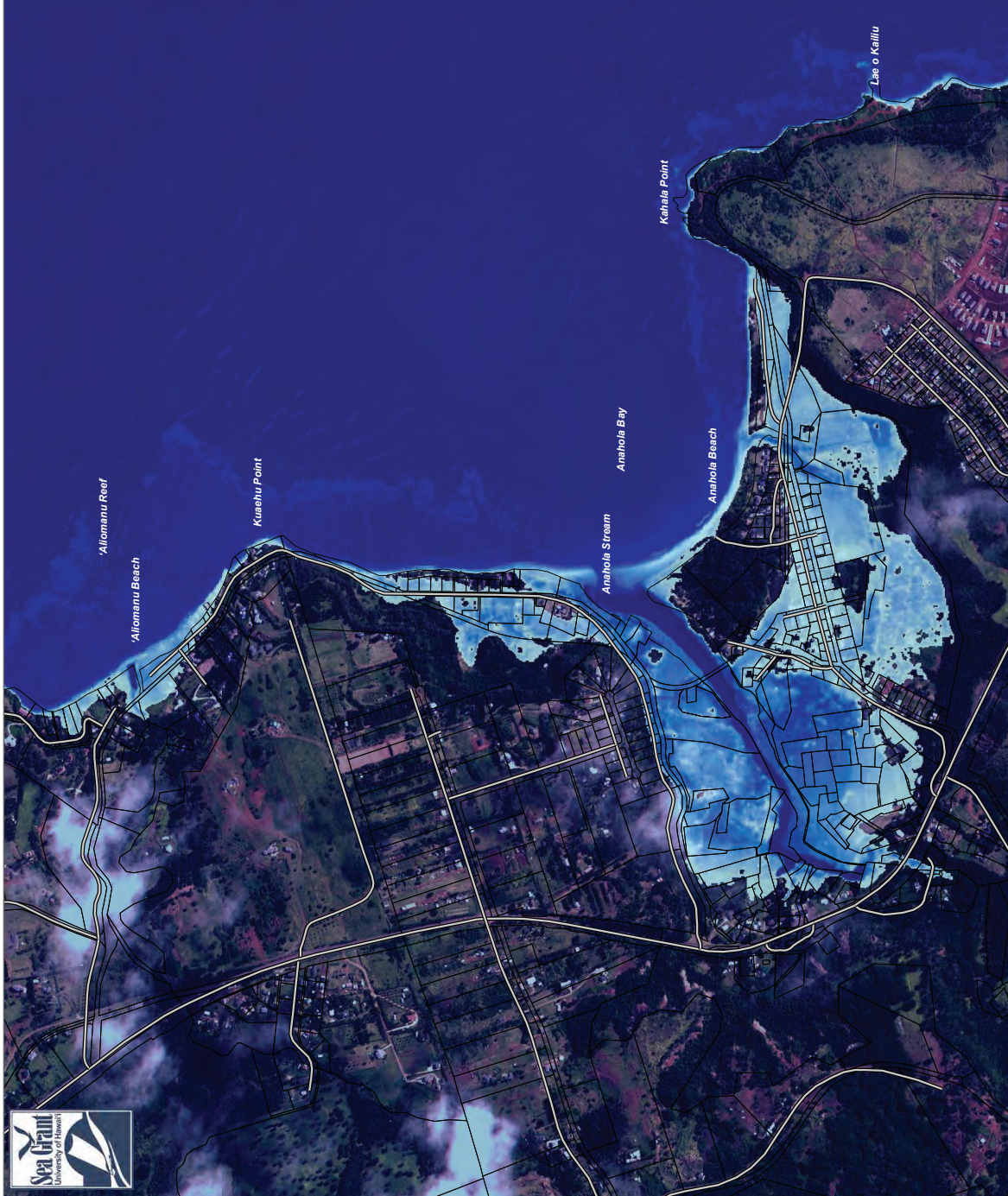
Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services, Coastal Services Center (November 2013)
<http://sc.noaa.gov/slr/beta/viewer/>



Scale in Feet: 0, 250, 500, 1,000, 1,500, 2,000

Scale in Meters: 1:10,000

March 2014



Appendix C: Sea level rise Inundation, Assessments and Needs for Select Coastal Areas

KAUA'I CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

1 Foot Potential Sea Level Rise Scenario Kapa'a, Kaua'i

MAP CONTENTS

Water Depth

- Deeper
- Shallower

Low Lying Areas

- Low Lying Areas
- TMK Boundaries
- Roads


MAP DESCRIPTION


Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically disconnected from any water bodies and are shown in a darker green. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes, such as erosion, accretion, or sea level rise caused by hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the users. The data should be used only as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/slr/beta/viewer/>





0 250 500 1,000 1,500 2,000
Feet
1:10,000


March 2014
19



Appendix C: Sea-level rise inundation Assessments and Needs for Select Coastal Areas

KAUA'I CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

3 Foot Potential Sea Level Rise Scenario Kapa'a, Kaua'i



MAP CONTENTS

- Water Depth
 - Deeper
 - Shallower
- Low Lying Areas
- TMK Boundaries
- Roads


MAP DESCRIPTION


Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically disconnected from the ocean and are shown in a lighter shade of green. The elevation data captures the island's hydrology. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes, such as erosion, accretion, and sea level rise caused by hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the users. The data should be used only as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA), Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/slr/beta/viewer/>





1:110,000


March 2014



Appendix C: Sea-level rise Inundation Assessments and Needs for Select Coastal Areas

KAUA'I CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

6 Foot Potential Sea Level Rise Scenario Kapa'a, Kaua'i



MAP CONTENTS

- Water Depth
 - Deeper
 - Shallower
- Low Lying Areas
- TMK Boundaries
- Roads


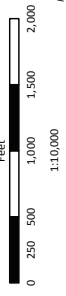
MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low lying areas, depicted in green, are hydrologically disconnected from the ocean and are shown in a lighter shade of green. The elevation data captures the area's hydraulics. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

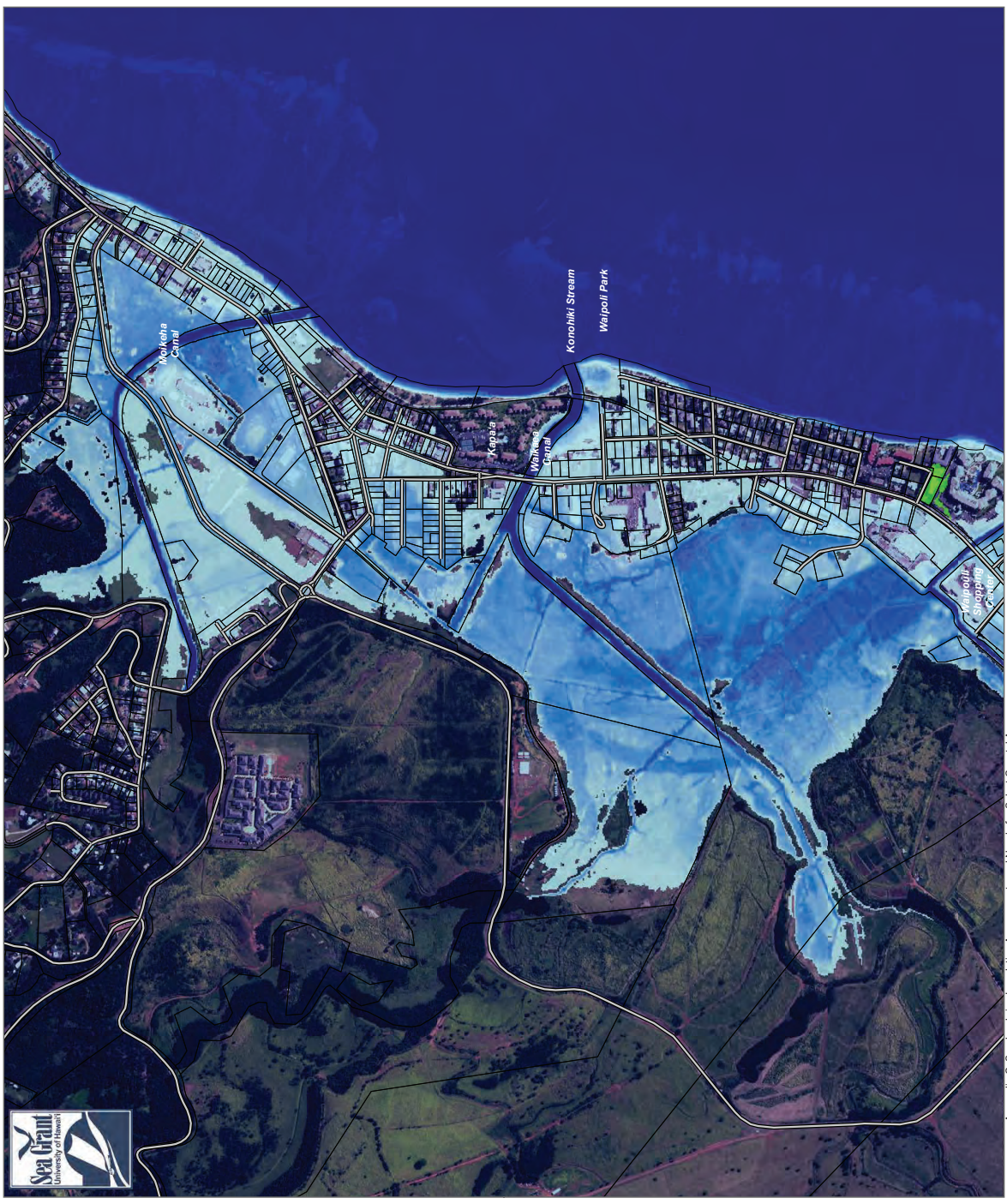
Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, subsidence, or future construction. The data does not consider the susceptibility to flooding from other causes such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should be used strictly as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services, Coastal Services Center (November 2013)
<http://sc.noa.gov/slr/beta/viewer/>


110,000
March 2014



Appendix C: Sea level rise inundation, Assessments and Needs for Select Coastal Areas

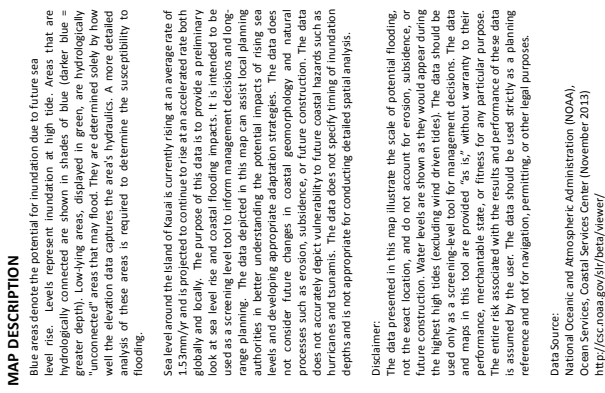
KAUA'I CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

1 Foot Potential Sea Level Rise Scenario Wailuā, Kaua'i



MAP CONTENTS

- Water Depth
 - Deeper
 - Shallower
- Low Lying Areas
- TMK Boundaries
- Roads




MAP DESCRIPTION

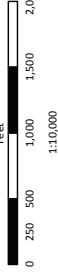
Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically disconnected from the ocean. Areas in yellow are areas that may well be the elevation data captures the area's hydrology. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, accretion, or sea level change. The data does not account for future coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the users. These data should be used only as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/sir/beta/viewer/>





0 250 500 1,000 1,500 2,000
Feet
1:110,000


March 2014



Appendix C: Sea level rise Inundation Assessments and Needs for Select Coastal Areas

KAUA'I CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

3 Foot Potential Sea Level Rise Scenario Wailuā, Kaua'i



MAP CONTENTS

Water Depth
■ Deeper
■ Shallower

■ Low Lying Areas

TMK Boundaries

Roads


MAP DESCRIPTION


Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically disconnected from any water body and are shown in green. The map will use the elevation data captured in the 3D hydrologic. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes or future changes in coastal hydrology. The data does not account for future changes in coastal hydrology due to coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
 The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the users. These data should be used only as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
 National Oceanic and Atmospheric Administration (NOAA),
 Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/sir/beta/viewer/>





1:110,000


March 2014



Appendix C: Sea level rise Inundation Assessments and Needs for Select Coastal Areas

KAUAI CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

6 Foot Potential Sea Level Rise Scenario Wailuā, Kauai



MAP CONTENTS

- Water Depth
 - Deeper
 - Shallower
- Low Lying Areas
- TMK Boundaries
- Roads

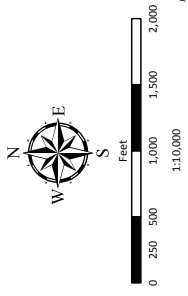
MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low lying areas, depicted in green, are hydrologically disconnected from the ocean and are not subject to inundation. The elevation data captures the area's hydraulics. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

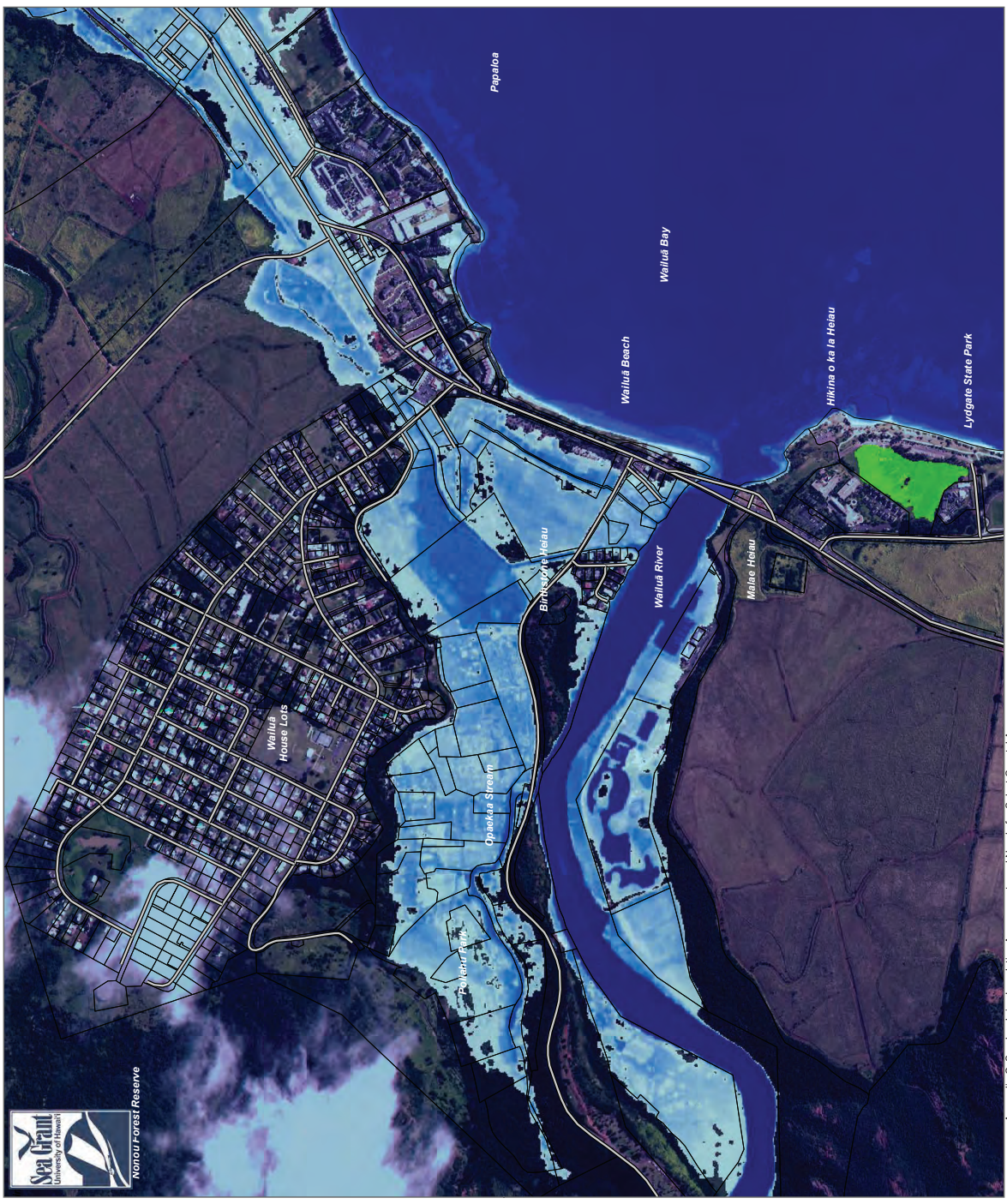
Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, subsidence, or future construction, the data does not consider the susceptibility of the area to hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should be used strictly as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services Coastal Services Center (November 2013)
<http://sc.noaa.gov/slr/beta/view/>



March 2014



Appendix C: Sea level rise Inundation Assessments and Needs for Select Coastal Areas

KAUAI CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

1 Foot Potential Sea Level Rise Scenario Nāwiliwili, Kaua'i


MAP CONTENTS

Water Depth

- Deeper
- Shallower

Low Lying Areas

- TMK Boundaries
- Roads




MAP DESCRIPTION


Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically disconnected from the ocean. Areas in yellow are areas that may be wet with the elevation data captures the island's hydrologic. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, accretion, or subsidence. The data does not provide accurate estimates of vulnerability to future coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. These data should not be used as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/sir/beta/viewer/>





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
March 2014





Appendix C: Sea level rise inundation Assessments and Needs for Select Coastal Areas


**KAUAI CLIMATE CHANGE
AND COASTAL HAZARDS ASSESSMENT
3 Foot Potential Sea Level Rise Scenario
Nāwiliwili, Kaua'i**


MAP CONTENTS

Water Depth
 Deeper
 Shallower

Low Lying Areas
 Low Lying Areas

TMK Boundaries
 TMK Boundaries

Roads
 Roads




MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically disconnected from any water bodies and are shown in a darker green. The elevation data captures the island's hydrologic. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, accretion, subsidence, or future coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
 The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by users, who should be consulted as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
 National Oceanic and Atmospheric Administration (NOAA),
 Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/sir/beta/viewer/>



Scale: 0 250 500 1,000 1,500 2,000 Feet
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 March 2014




Appendix C: Sea-level rise Inundation Assessments and Needs for Select Coastal Areas

**KAUA'I CLIMATE CHANGE
AND COASTAL HAZARDS ASSESSMENT**
6 Foot Potential Sea Level Rise Scenario
Nāwiliwili, Kaua'i

MAP CONTENTS

Water Depth
 Deeper
 - Shallower

Low Lying Areas
 TNM Boundaries
 Roads




MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low lying areas, depicted in green, are hydrologically disconnected from the ocean and are not subject to sea level rise. The elevation data captures the area's hydraulics. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, subsidence, or future construction. The data also does not take into account the potential impacts of hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

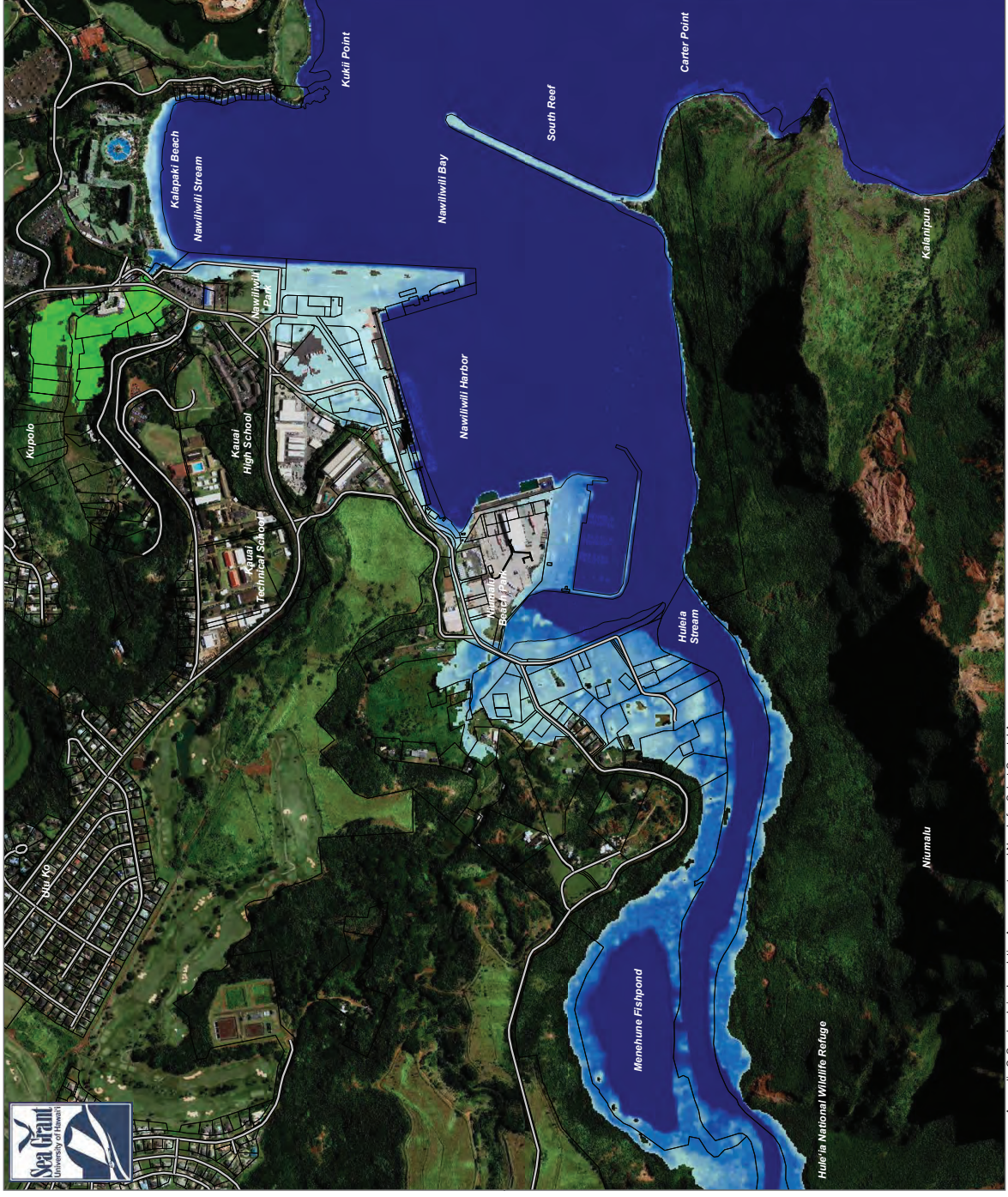
Disclaimer:
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Data Source:
 National Oceanic and Atmospheric Administration (NOAA),
 Ocean Services Coastal Services Center (November 2013)
<http://sc.noa.gov/slr/beta/viewer/>



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March 2014



Appendix C: Sea level rise Inundation Assessments and Needs for Select Coastal Areas

**KAUA'I CLIMATE CHANGE
AND COASTAL HAZARDS ASSESSMENT
1 Foot Potential Sea Level Rise Scenario
Po'ipū, Kaua'i**


MAP CONTENTS

Water Depth
 Deeper
 Shallower

Low Lying Areas

TMK Boundaries

Roads




MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically disconnected from the ocean. Areas in yellow and orange represent areas with the elevation data captures the island's hydrology. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as accretion, subsidence, or erosion. The data does not consider future changes in coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
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Data Source:
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 Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/sir/beta/viewer/>



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March 2014



Appendix C: Sea-level rise Inundation Assessments and Needs for Select Coastal Areas

KAUA'I CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

3 Foot Potential Sea Level Rise Scenario Po'ipū, Kaua'i

MAP CONTENTS

Water Depth
■ Deeper
■ Shallower

■ Low Lying Areas
 TMK Boundaries
 Roads


MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically disconnected from the ocean and may not be inundated. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

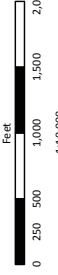
Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as accretion, subsidence, or erosion. The data does not include hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
 The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should be used only as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
 National Oceanic and Atmospheric Administration (NOAA),
 Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/sir/beta/viewer/>



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March 2014




Appendix C: Sea-level rise inundation Assessments and Needs for Select Coastal Areas

**KAUA'I CLIMATE CHANGE
AND COASTAL HAZARDS ASSESSMENT**
6 Foot Potential Sea Level Rise Scenario
Po'ipū, Kaua'i

MAP CONTENTS

Water Depth
 Deeper
 - Shallower

Low Lying Areas
 TMK Boundaries
 Roads




MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low lying areas, displayed in green, are hydrologically disconnected from the ocean and are not subject to inundation. The elevation data captures the area's hydraulics. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, subsidence, or future construction. The data does not consider susceptibility to other coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
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March 2014



Appendix C: Sea level rise Inundation Assessments and Needs for Select Coastal Areas

KAUA'I CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

1 Foot Potential Sea Level Rise Scenario Hanapepe, Kaua'i



MAP CONTENTS

Water Depth
■ Deeper
■ Shallower

■ Low Lying Areas
 TMK Boundaries
 Roads

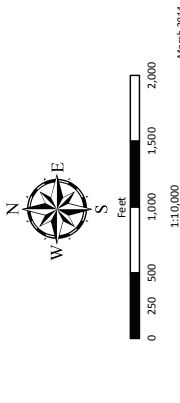
MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically disconnected from any water bodies and are shown in a lighter shade. The elevation data captures the island's hydrology. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening-level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, accretion, and sea level rise. The data also does not consider future changes in coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
 The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should be used only as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
 National Oceanic and Atmospheric Administration (NOAA),
 Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/sir/beta/viewer/>

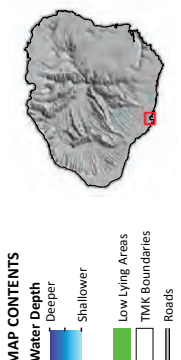




Appendix C: Sea-level rise inundation Assessments and Needs for Select Coastal Areas

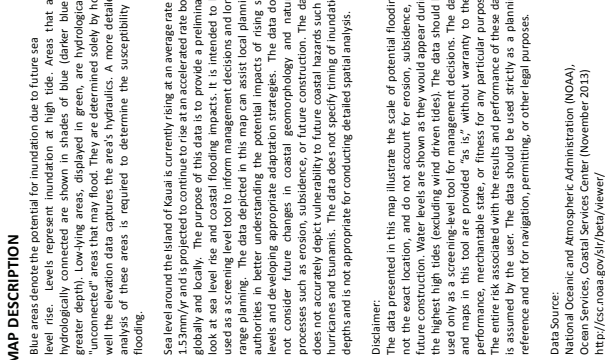
KAUA'I CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

3 Foot Potential Sea Level Rise Scenario Hanapepe, Kaua'i



MAP CONTENTS

- Water Depth
 - Deeper
 - Shallower
- Low Lying Areas
- TMK Boundaries
- Roads




MAP DESCRIPTION


Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically disconnected from any water bodies and are shown in a lighter shade. We will use the elevation data to calculate the area's hydrologic. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening-level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes, such as erosion, accretion, and sea level rise, or the effects of hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the users. The data should not be used as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services, Coastal Services Center (November 2013)
<http://csc.noaa.gov/sir/beta/viewer/>





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Appendix C: Sea-level rise Inundation Assessments and Needs for Select Coastal Areas

**KAUA'I CLIMATE CHANGE
AND COASTAL HAZARDS ASSESSMENT**
6 Foot Potential Sea Level Rise Scenario
Hanapepe, Kaua'i

MAP CONTENTS

- Water Depth
 - Deeper
 - Shallower
- Low Lying Areas
- TMK Boundaries
- Roads





MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low lying areas, depicted in green, are hydrologically disconnected from the ocean and are not subject to inundation. The elevation data captures the area's hydraulics. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, subsidence, or future construction. The data does not consider the susceptibility of infrastructure to hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should be used strictly as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services Coastal Services Center (November 2013)
<http://sc.noa.gov/slr/beta/viewer/>

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March 2014




Appendix C: Sea level rise Inundation Assessments and Needs for Select Coastal Areas

**KAUA'I CLIMATE CHANGE
AND COASTAL HAZARDS ASSESSMENT
1 Foot Potential Sea Level Rise Scenario
Waimea, Kaua'i**

MAP CONTENTS

- Water Depth
 - Deeper
 - Shallower
- Low Lying Areas
- TMK Boundaries
- Roads





MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low-lying areas, displayed in green, are hydrologically disconnected from the ocean and are not subject to inundation. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, accretion, and sea level rise. The data does not consider future changes in coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
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Data Source:
National Oceanic and Atmospheric Administration (NOAA),
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<http://csc.noaa.gov/sir/beta/viewer/>

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March 2014



Appendix C: Sea-level rise Inundation Assessments and Needs for Select Coastal Areas

**KAUA'I CLIMATE CHANGE
AND COASTAL HAZARDS ASSESSMENT
3 Foot Potential Sea Level Rise Scenario
Waimea, Kaua'i**

MAP CONTENTS

Water Depth



Low Lying Areas



TMK Boundaries



Roads



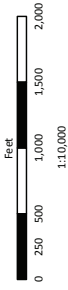
MAP DESCRIPTION

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Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, accretion, and sea level rise. The data does not consider future changes in coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

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National Oceanic and Atmospheric Administration (NOAA),
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March 2014



Appendix C: Sea level rise inundation Assessments and Needs for Select Coastal Areas

KAUA'I CLIMATE CHANGE AND COASTAL HAZARDS ASSESSMENT

6 Foot Potential Sea Level Rise Scenario Waimea, Kaua'i



MAP CONTENTS

- Water Depth
 - Deeper
 - Shallower
- Low Lying Areas
- TMK Boundaries
- Roads

MAP DESCRIPTION

Blue areas denote the potential for inundation due to future sea level rise. Levels represent inundation at high tide. Areas that are hydrologically connected are shown in shades of blue (darker blue = greater depth). Low lying areas, depicted in green, are hydrologically disconnected from the sea and are not subject to inundation. The elevation data captures the area's hydraulics. A more detailed analysis of these areas is required to determine the susceptibility to flooding.

Sea level around the island of Kauai is currently rising at an average rate of 1.53mm/yr and is projected to continue to rise at an accelerated rate both globally and locally. The purpose of this data is to provide a preliminary look at sea level rise and coastal flooding impacts. It is intended to be used as a screening level tool to inform management decisions and long-range planning. The data depicted in this map can assist local planning authorities in better understanding the potential impacts of rising sea levels and developing appropriate adaptation strategies. The data does not consider future changes in coastal geomorphology and natural processes such as erosion, subsidence, or future construction. The data also does not consider the potential for future coastal hazards such as hurricanes and tsunamis. The data does not specify timing of inundation depths and is not appropriate for conducting detailed spatial analysis.

Disclaimer:
The data presented in this map illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excluding wind driven tides). The data should be used only as a screening-level tool for management decisions. The data and maps in this tool are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. The data should be used strictly as a planning reference and not for navigation, permitting, or other legal purposes.

Data Source:
National Oceanic and Atmospheric Administration (NOAA),
Ocean Services, Coastal Services Center (November 2013)
<http://sc.noa.gov/slr/beta/viewer/>



Appendix C: Sea level rise Inundation Assessments and Needs for Select Coastal Areas

APPENDIX E - LAND OWNERSHIP AND AVAILABILITY FOR FUTURE GROWTH

Land Ownership

Kaua'i's population is expected to grow by 31.2% between 2010 and 2035 (see Appendix C). An important part of this General Plan process was to inventory lands that can accommodate future development and to gather information on planned and entitled projects. The purpose of the analysis was to determine whether land use designations needed to change to accommodate anticipated growth, and whether current land use designations support sustainable growth.

A *Land Use Buildout Analysis (2015)* prepared for this General Plan to examine Land supply compared to County growth projections. Data on land ownership patterns and planned and entitled projects was compiled and mapped. The following sections summarize the findings of this study.

Major Landowners

Land ownership on Kaua'i is highly concentrated. A dozen or so large landowners own much of the island, as shown on the Figures that follow. The State of Hawai'i is the largest landowner, with management of most State lands split between the Departments of Land and Natural Resources, Agriculture, and Hawaiian Homelands. Other major landowners include the Robinson Family (which also owns all of Ni'ihau), Grove Farm Company, and Alexander & Baldwin. Within towns and villages, land ownership is more fragmented.

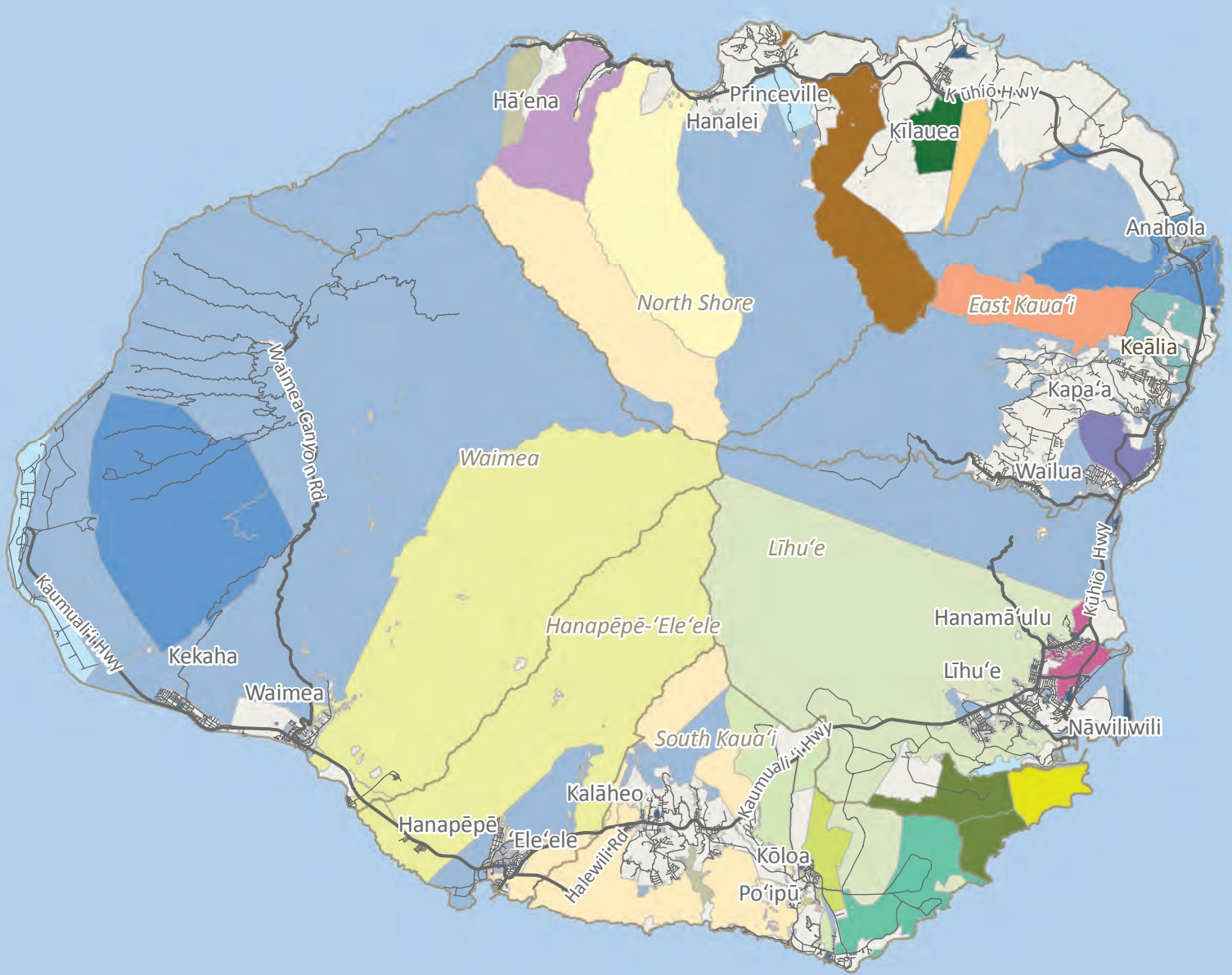
The County included major landowners and developers in the General Plan update process. The purpose of this outreach was to obtain the status of known projects and to identify future plans that may be considered during this General Plan planning horizon.

State & Federal Landowners

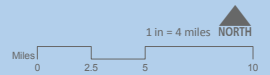
Department of Hawaiian Home Lands
Pacific Missile Range Facility

Private Landowners & Developers

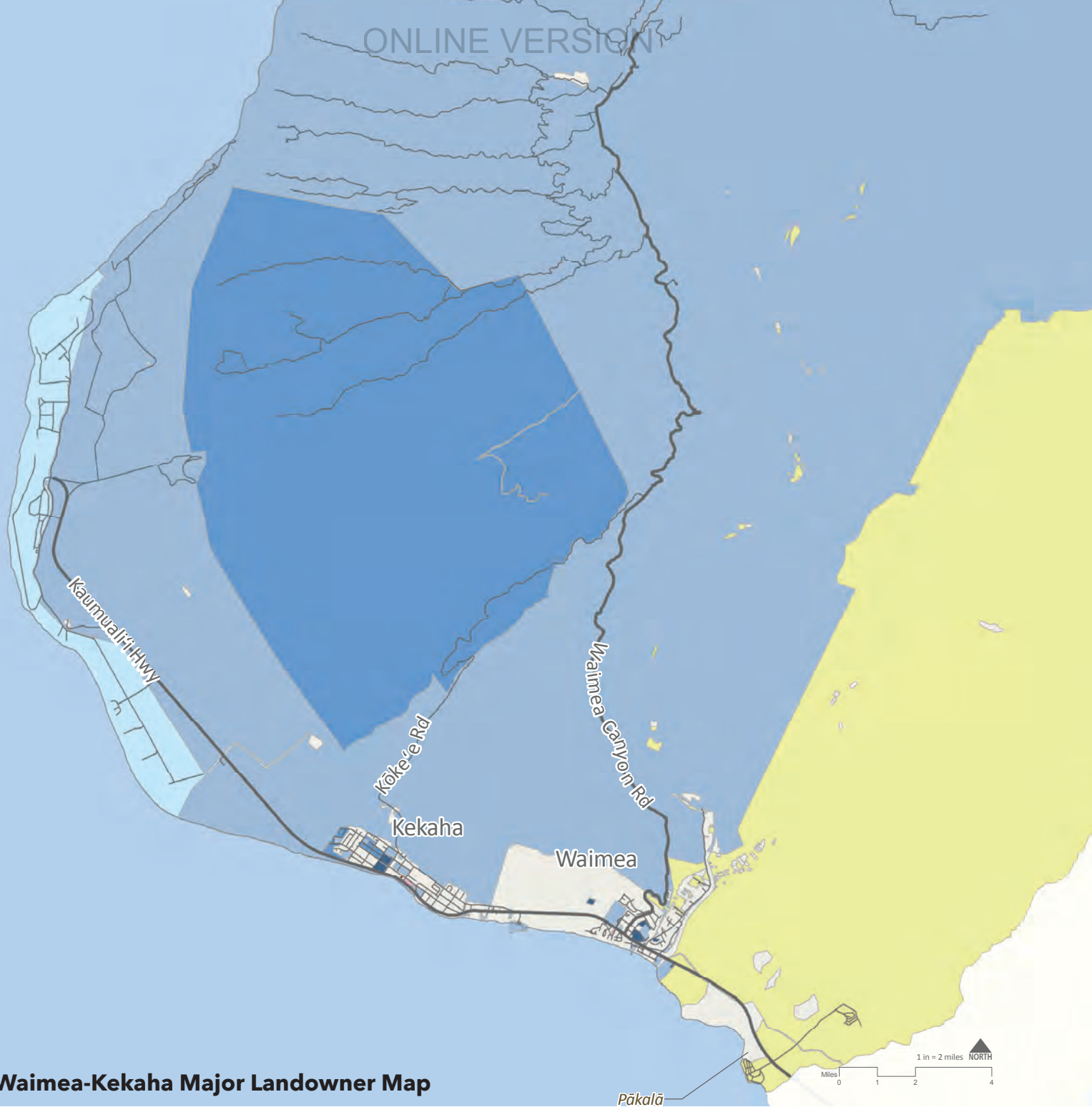
Alexander & Baldwin
Anaina Hou Land, LLC
Cornerstone Hawai'i
Discovery Land Company
Grove Farm Company
HG Kaua'i Joint Venture, LLC
Kikiaola Land Company
Leland R. Bertsch
My Kapa'a, LLC
Princeville Mauka Village, LLC
Robinson Family
Thane, Inc.



Kaua'i Island Major Landowner Map

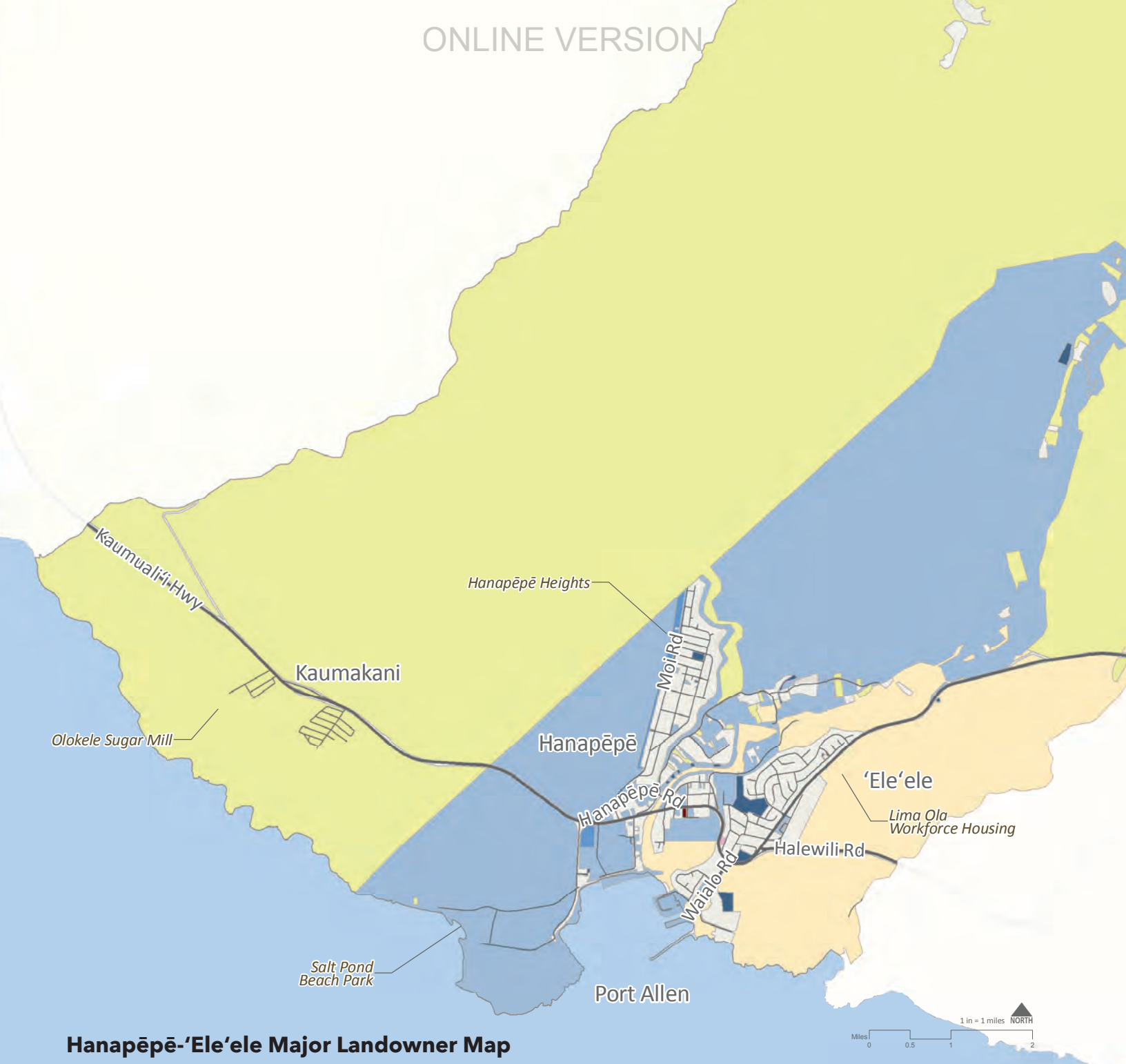


- | | |
|------------------------------|--------------------------|
| — Major Roads | ■ E.A. Knudsen Trust |
| — Roads | ■ Govt. County of Kaua'i |
| □ Planning District Boundary | ■ Govt. Federal |
| ■ Alexander & Baldwin | ■ Govt. State |
| ■ Bette Midler | ■ Govt. State DHHL |
| ■ Canpartners Realty | ■ Grove Farm |
| ■ Cornerstone Hawai'i | ■ HRT Realty, LLC |
| ■ D.R. Campion | ■ Halaulani Condominium |
| ■ Haupu Land Co. | ■ Robinson B.B. |
| ■ Hawaii Conf. Foundation | ■ Robinson Family |
| ■ Jurassic Kahili Ranch | ■ Roman Catholic Church |
| ■ Kamehameha Schools | ■ Share No. 1 |
| ■ Mahaulepu Farm, LLC | ■ Visionary, LLC |
| ■ Nat'l Trop. Bot. Garden | ■ W.H. Rice |
| ■ Princeville Dev. LLC | |
| ■ Queen Liliuokalani Trust | |



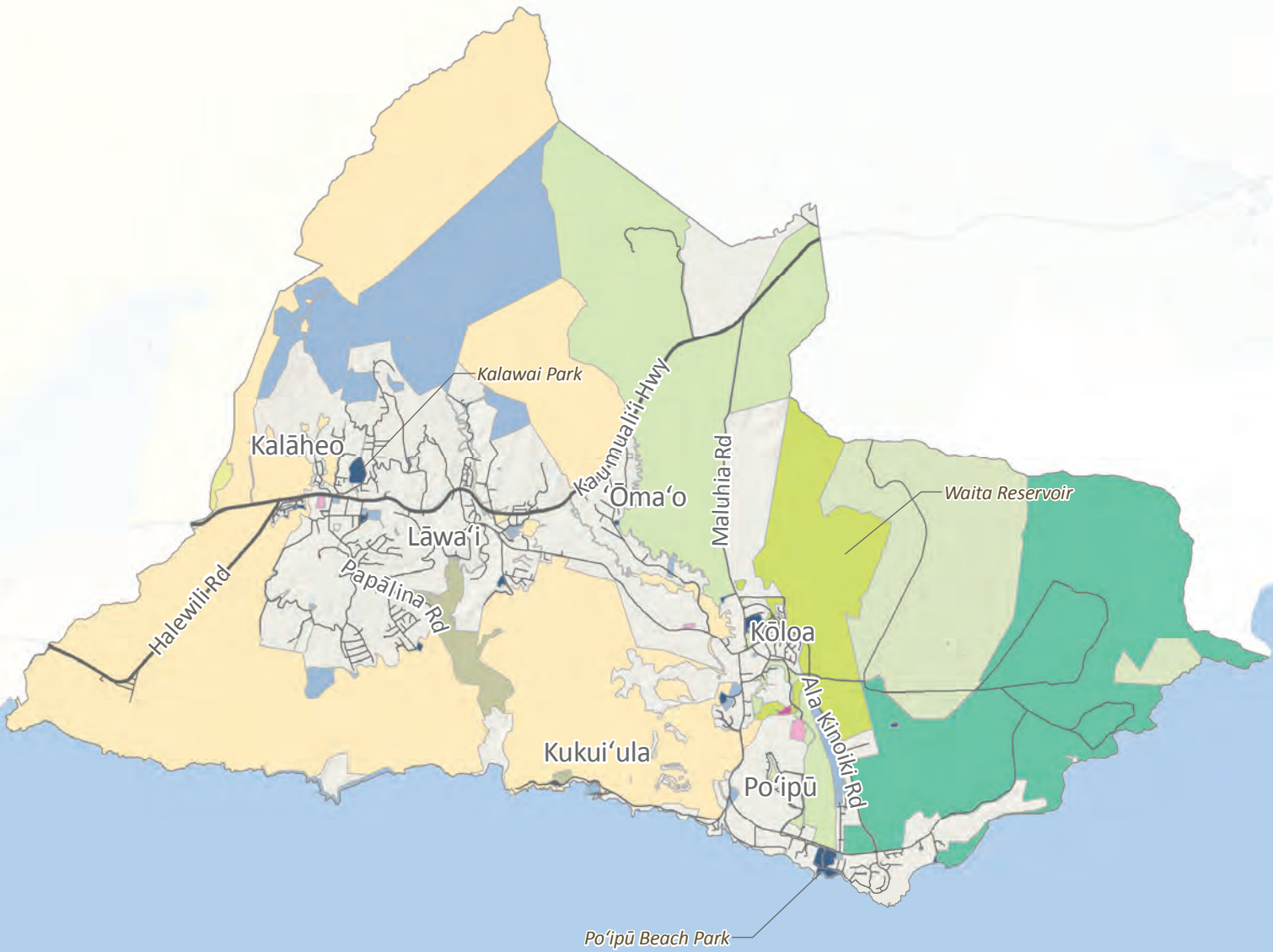
Waimea-Kekaha Major Landowner Map

- Govt. County of Kauaʻi
- Govt. Federal
- Govt. State
- Govt. State DHHL
- Hawaiʻi Conf. Foundation
- Robinson Family
- Roman Catholic Church
- Planning District Boundary
- Major Roads
- Roads

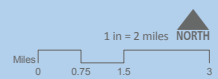


Hanapēpē-'Ele'ele Major Landowner Map

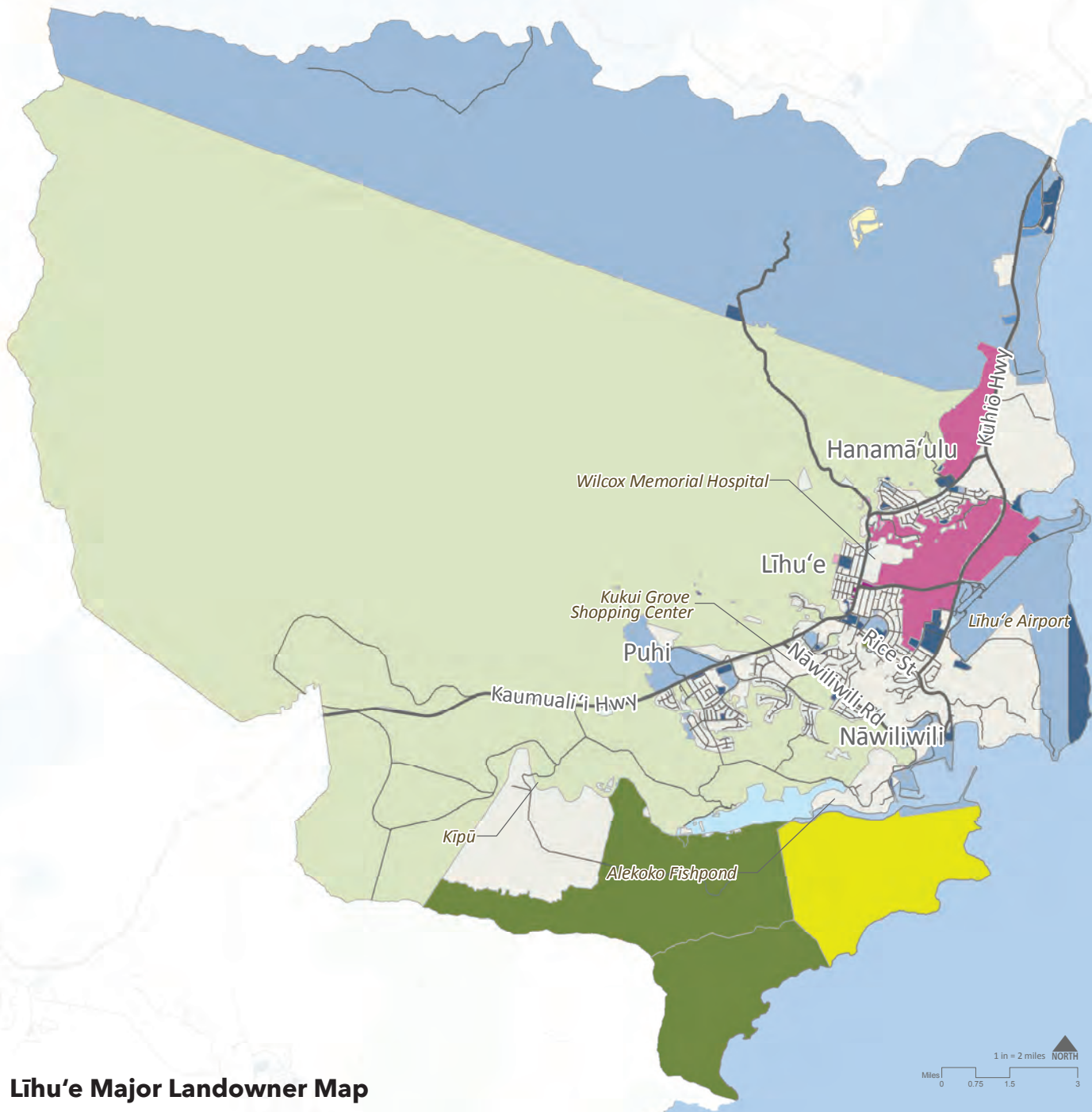
- Alexander & Baldwin
- Govt. County of Kaua'i
- Govt. Federal
- Govt. State
- Govt. State DHHL
- Hawai'i Conf. Foundation
- Robinson Family
- Roman Catholic Church Planning District Boundary
- Major Roads
- Roads



South Kaua'i Major Landowner Map

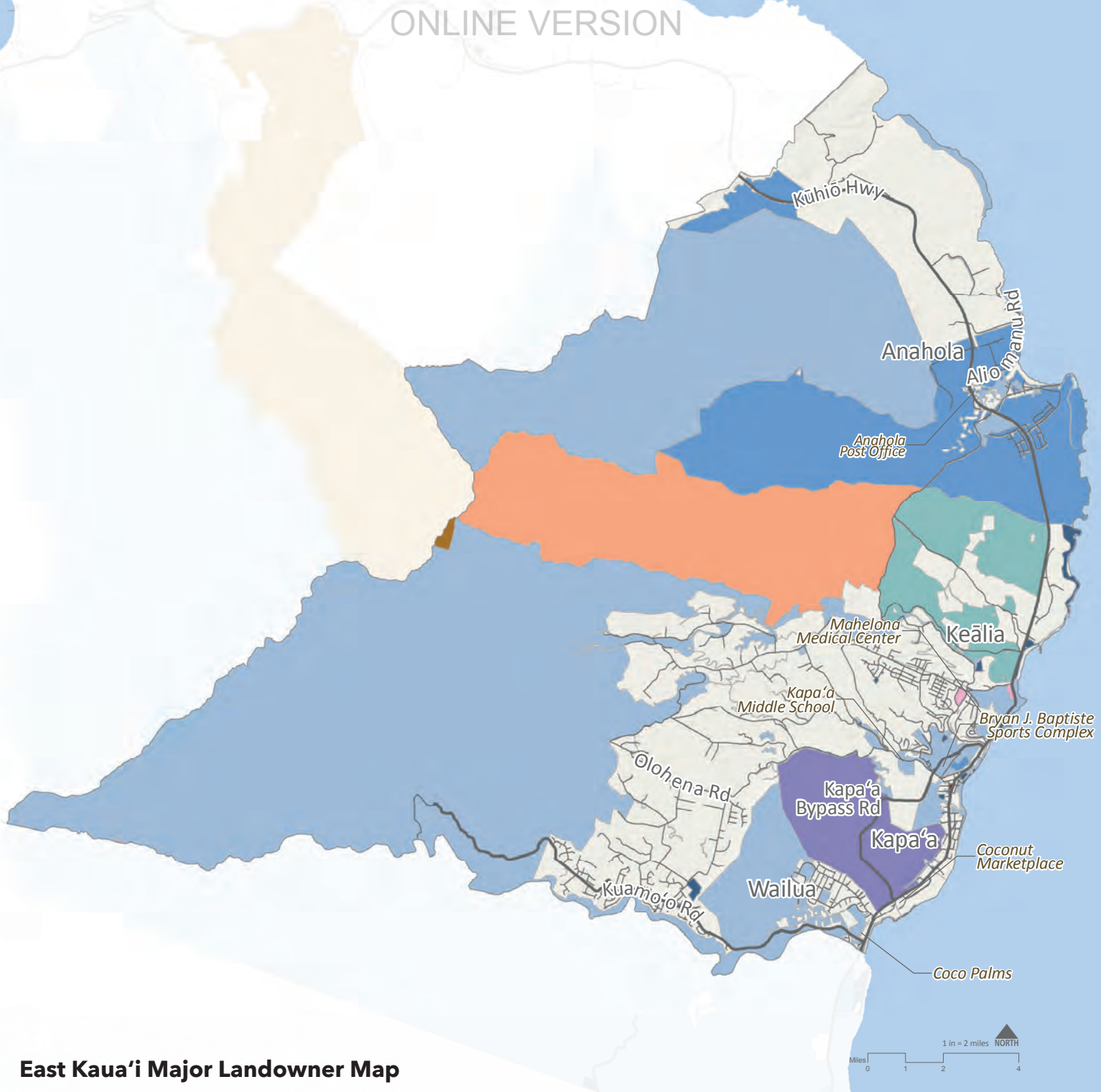


- | | | |
|------------------------|----------------------------|-------|
| Alexander & Baldwin | Mahaulepu Farm, LLC | Roads |
| E.A. Knudsen Trust | Nat'l Trop. Bot. Garden | |
| Govt. County of Kaua'i | Robinson Family | |
| Govt. Federal | Roman Catholic Church | |
| Govt. State | Visionary, LLC | |
| Grove Farm | Planning District Boundary | |
| Haupū Land Co. | Major Roads | |

















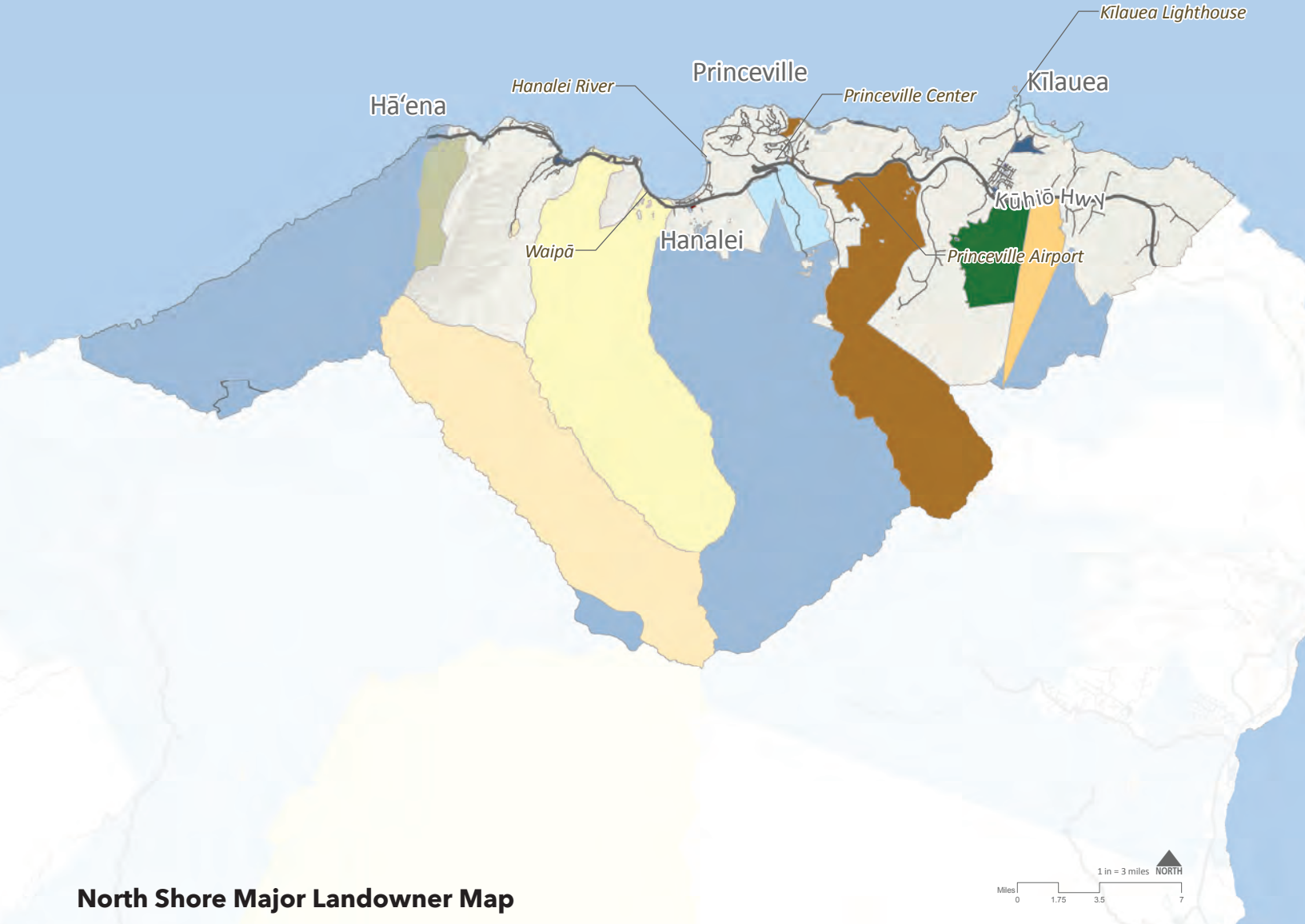
Līhu'e Major Landowner Map

- | | | |
|------------------------|----------------------------|---------|
| D.R. Campion | Kamehameha Schools | — Roads |
| Govt. County of Kaua'i | Queen Liliuokalani Trust | |
| Govt. Federal | Roman Catholic Church | |
| Govt. State | Visionary, LLC | |
| Govt. State DHHL | W.H. Rice | |
| Grove Farm | Planning District Boundary | |
| HRT Realty, LLC | Major Roads | |



East Kaua'i Major Landowner Map

- | | |
|--|--|
|  Bette Midler |  Hawai'i Conf. Foundation |
|  Canpartners Realty |  Princeville Dev., LLC |
|  Cornerstone Hawai'i |  Roman Catholic Church |
|  Govt. County of Kaua'i |  Planning |
|  Govt. Federal |  District Boundary |
|  Govt. State |  Major Roads |
|  Govt. State DHHL |  Roads |



North Shore Major Landowner Map

- | | | |
|--------------------------|----------------------------|-------|
| Alexander & Baldwin | Kamehameha Schools | Roads |
| Govt. County of Kauai | Nat'l Trop. Bot. Garden | |
| Govt. Federal | Princeville Dev., LLC | |
| Govt. State | Robinson Family | |
| Halaulani Condominium | Roman Catholic Church | |
| Hawai'i Conf. Foundation | Planning District Boundary | |
| Jurassic Kahili Ranch | Major Roads | |

Availability of Lands for Future Growth

Residential Lands

According to the *Land Use Buildout Analysis (2015) Technical Report*, if all existing and projected residential dwellings were located entirely on Residential-zoned parcels, the supply of existing Residential-zoned parcels cannot accommodate the entire 2035 projected population. As a reminder, the projected population is conservative, as it does not factor in allowable residential uses on existing Agriculture and Open zoned parcels. An analysis of vacant residential-zoned parcels indicates that these lands could come close to accommodating the 2035 population, with possible shortages in the Līhu'e and East Kaua'i Districts. The analysis notes that deficiencies could be made up through higher density mixed use areas in existing town centers, which is the policy adopted by this General Plan.

A key consideration in residential land supply is how to provide residents with housing they can afford and build equity through. The *2015-2020 Consolidated Plan* prepared by the Kaua'i Housing Agency suggests that more residential lands that can support low-income housing could be needed. According to the *Homeless Utilization Report (2014)*, Kaua'i has a homeless population of nearly 400 people. The *2011 Hawai'i Housing Planning Study* (prepared by SMS for the Hawai'i Housing Finance and Development Corporation) suggests that 36% of total households on Kaua'i are at-risk for homelessness as a result of factors that include high housing costs and low wages. The "hidden demand" for housing to serve populations that are already houseless or threatened with homelessness needs to be factored into projections of future housing needs.

Another key indicator of housing needs is overcrowding in existing dwellings. After the burden of cost, the most common housing problem is severely overcrowded conditions (>1.51 people per room), with overcrowding concentrated among extremely-low and very-low income households (based on annually updated HUD income categories). Overcrowding is a result of both housing supply and affordability. Increasing the supply of homes will result in lowering housing costs. At the same time, residents are concerned that new housing supply will simply increase housing options for those off-island and not serve existing in-need households.

Lands that are currently entitled or planned for development can contribute substantially to the island's projected housing needs. According to County Planning Department records, projects that are partially or currently entitled for future development could add nearly 6,000 housing units to the island during the GP Update's planning horizon. These projects are at various stages of approvals, land use re-designations, and construction, and are shown in tables and maps contained in Appendix F.

Supply of Industrial Lands

Most of the island's industrial lands (81%) are within the Līhu'e District. That district is the location of the planned Ahukini Makai development, which will provide an additional 146 acres (approximately 6.4 million square feet) of industrial lands near Līhu'e airport. A new "Industrial" designation included in the South Kaua'i Community Plan adds another 160 acres around the Old Kōloa Mill site. While this amount of floor space theoretically meets the per capita need for industrial space as outlined in the *Land Use Buildout Analysis (2015)*, it is less clear whether the distribution of industrial lands island-wide and their associated zoning designations can accommodate the desired range of industrial uses.

Supply of Commercial Lands

The Comprehensive Zoning Ordinance (CZO) defines "'Commercial Use' as the purchase, sale or other transaction involving the handling or disposition of any article, substance or commodity for profit or a livelihood, including in addition, public garages, office buildings, offices of doctors and other professionals, public stables, recreational and amusement enterprises conducted for profit, shops for the sale of personal services, places where commodities or services are sold or are offered for sale, either by direct handling of merchandise or by agreements to furnish them but not including dumps and junk yards." Commercial uses are permitted in the General and Neighborhood Commercial zoning districts (C-G, C-N). Between 2015 and 2035, there is a projected need for another 2,716,416 square feet of commercial space (Table 4-1). Currently planned and entitled projects will contribute, as shown in Appendix F.

Neither the 2000 General Plan nor this General Plan have a Commercial land use designation. Commercial uses are to be mixed with other uses in the Neighborhood Center, General Edge Areas, Urban Center, or Resort designations. Based on

population-ratio methodology, existing commercial zoned lands are adequate to accommodate future population projection. Light industrial can also be accommodated within commercial districts.

Table 8. Ratio of Commercial Floor Area to Resident Population (2013)

Planning District	Total Existing Square Feet	% of the County	2010 Pop.	Square Feet Needed by 2035	Increase Required to meet 2035 need
County of Kaua'i	3,203,654	49%	14,683	5,117,817	1,914,163
Līhu'e	838,018	13%	11,696	1,207,660	369,642
South Kaua'i	525,826	8%	6,157	605,849	80,023
Hanapēpē-'Ele'ele	402,239	6%	5,561	474,933	72,694
Waimea-Kekaha	307,751	5%	8,002	343,557	35,806
North Shore	1,244,271	19%	20,992	1,488,360	244,089
East Kaua'i	6,521,759	100%	67,091	9,238,175	2,716,416

Supply of Resort Lands

The *Land Use Buildout Analysis (PBR, 2015)* used the Hawai'i Tourism Authority's 2012 Visitor Plant Inventory to analyze resort lands. Kaua'i County had 8,289 transient accommodation units in 2012. This number includes 98 bed and breakfast units on 27 properties. All Planning Districts have Visitor Destination Areas (VDA), except Hanapēpē-'Ele'ele. The Planning District with the largest VDA in terms of acreage is South Kaua'i, followed by North Shore, Līhu'e, Kapa'a-Wailua, and Waimea-Kekaha. In terms of units, South Kaua'i ranks first, however, the order changes with Kapa'a-Wailua second, followed by North Shore, then Līhu'e. The Buildout Analysis suggests that there is more than enough Resort zoned land to accommodate projected visitor growth.

Factoring in planned resort development, which amounts to approximately 4,500 new units (*Visitor Plant Inventory, 2013*), all Planning Districts except the North Shore and Līhu'e are projected to have an excess visitor unit supply. Waimea-Kekaha will have the most excess followed by Kapa'a-Wailua and South Kaua'i. The North Shore has an extensive supply of potential single-family transient vacation rentals within the VDA that could respond to market demand.

Conclusions

The major conclusions regarding Kaua'i's land use inventory are:

- More land is needed to accommodate residential growth and generate housing affordable for residents.

- Some growth will be needed in every district. The majority of the growth will be directed to Līhu'e and to existing town centers.
- Resort lands are more than adequate to meet demand.

Commercial and Industrial lands may be adequate in acreage, but distribution may be an issue to explore further.

APPENDIX F - ENTITLED PROJECTS BY DISTRICT

Entitled Projects on Kaua'i

Kaua'i has a number of projects that have been entitled or are at various stages of approval. These planned projects may accommodate projected future demand of certain land uses. Many have been "on the books" for years with little to no progress. Because many permits run with the land in perpetuity, the County must take its development potential into account when planning for future land use patterns.

An analysis of existing entitled lands on Kaua'i was undertaken as part of the General Plan process to identify and quantify these lands that may be subject to future development. This Appendix describes the methodology and results of that analysis.

Methods

Data on entitled projects was collected from the COK Planning Department:

- Major projects with an existing PDU or Class IV Zoning Permit; and
- Large zoned projects, with or without subdivision approvals, but with a master plan.
- Projects at the Land Use Commission, requesting SLUD Boundary Amendment

Entitled projects were mapped and tabulated by district and project type (Housing, Commercial, Resort)

Caveats

- Many of these projects have been on the books for years and their current status is uncertain.
- Build-out is subject to multiple factors not within County's control: the market, construction costs, landowner willingness, State DOT infrastructure requirements, etc.
- There are no expirations on certain types of County permits, meaning that once projects are entitled, there are limited options for modifying or preventing them from proceeding.

How the Analysis was Used

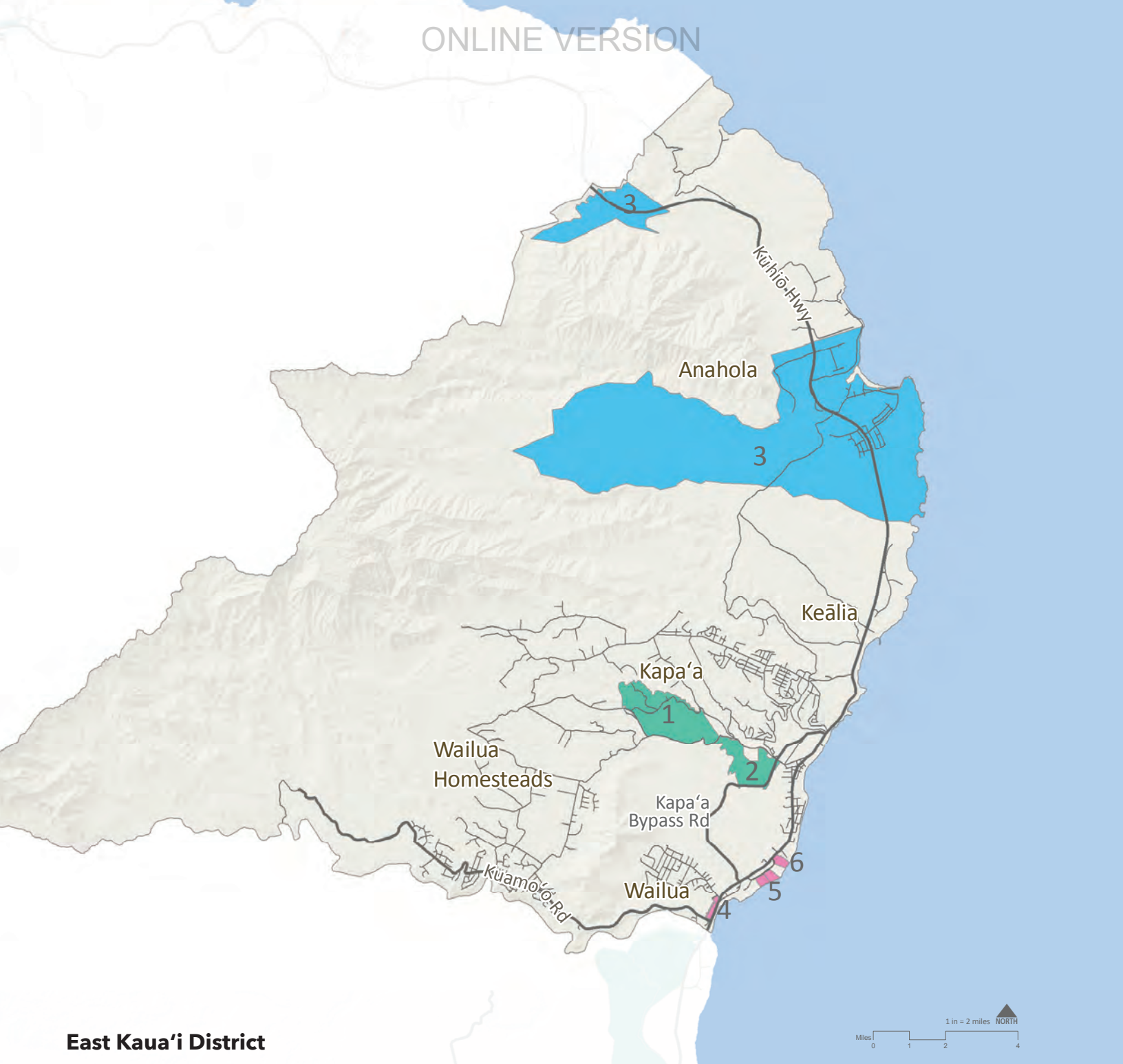
- This analysis, along with the Land Use Buildout Analysis, represent key pieces of information that tell us how Kaua'i will grow over the next twenty years and identify opportunities that exist for shaping that growth to meet the vision.
- The understanding of where growth is planned and desired to occur informed the development of land use policy and maps.

Entitled Residential Projects by District

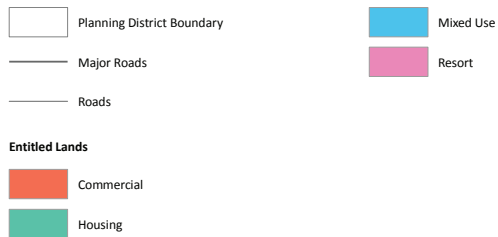
District	Project Name	Housing Units
East Kaua'i	Pi'ilani Mai He Kai (DHHL Anahola)	49%
	Kulana	
	Kapa'a Highlands, Phase 2	
	TOTAL	1,122
'Ele'ele	A&B 'Ele'ele Residential	201
	Lima Ola (Affordable)	450
	TOTAL	651
Lihu'e	DHHL Wailua, Phase 1	188
	Kohea Loa - D.R. Horton	444
	Pikake Subdivision	146
	Grove Farm Wailani Residential	1,450
	Koamalu	220
	Waiola Phase I	47
	Waiola Phase II	56
	Waiola Phase II	93
	TOTAL	2,644
North Shore	Kolopua (Princeville Affordable)	44
	TOTAL	
South Kaua'i	Brydeswood Ranch (A&B)	24
	Kōloa Creekside	72
	Kukui'ula Employee Housing	100
	Kukui'ula	750
	The Village at Kōloa Town	34
	Kōloa Camp - Waihononu	50
	CIRI (CLDC) Subdivision	10
	TOTAL	1,040
Waimea	Kekaha lots	40
	Kikīaola Mauka	270
	Kikīaola - Field 14	56
	TOTAL	366
	TOTAL	5,867

Entitled Commercial Projects by District

District	Project Name	Commercial Square Footage
Kōloa	Kōloa Rum Company Store and Café	9,000
	TOTAL	9,000
Līhu‘e	Hokulei Village	222,000
	Grove Farm Wailani Commercial	1,132,299
	Weinberg Foundation Renovation	24,250
	Kukui Grove Commercial Buildout	96,000
	Weinberg Foundation/Ahukini	20,000
	TOTAL	1,494,549
North Shore	Kīlauea Crossings	6,070
	Kīlauea Town Center	46,800
	Hanalei Halelea Office	2,000
	TOTAL	54,870
South Kaua‘i	Village at Kōloa Town	96,000
	Kukui‘ula ABC Store	21,000
	Kōloa Marketplace	76,000
	Old Glass Warehouse	7,200
	TOTAL	200,200
	ISLAND TOTAL	1,758,619



East Kaua'i District

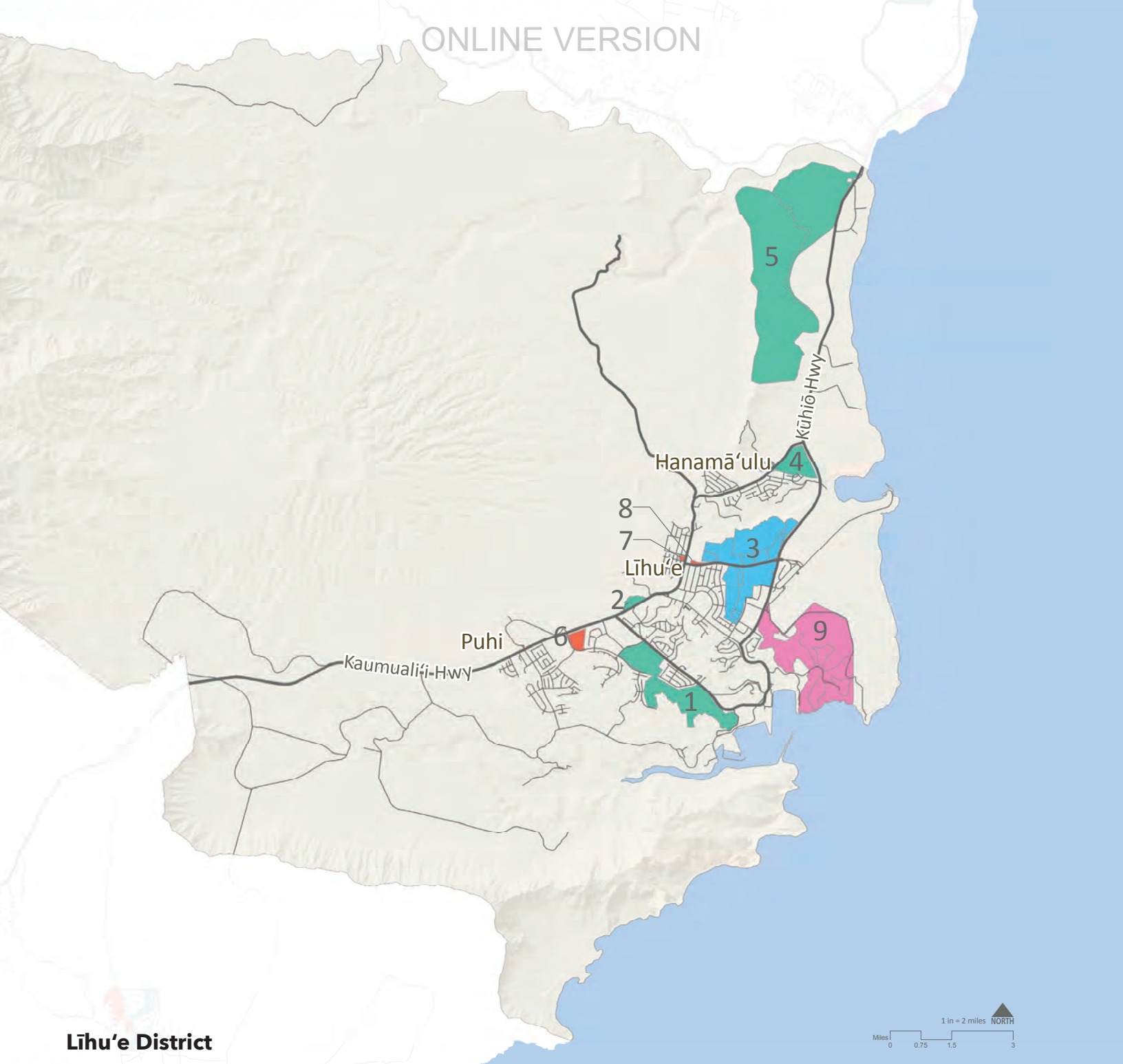


Residential

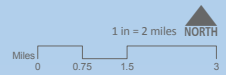
Map #	Project Name	Housing Units	GP Land Use Designation	Status
1	Kūlana	172	Agriculture	Permitted as Agricultural Development
2	Kapa'a Highlands Phase II	769	Urban Center, Agriculture, Open	Seeking SLU Amendment
3	Pi'ilani Mai He Kai (DHHL Anahola)	181	Urban Center, Agriculture, Open	Phase II Began 2012
	TOTAL	1,122		

Resort

Map #	Project Name	Housing Units	GP Land Use Designation	Status
4	Coconut Plantation	192	Resort	Submitted annual status report (2/8/11)
5	Coco Palms	350	Resort	Approved March 2015
6	Coconut Beach Resort	335	Resort	Construction to start 2015
	TOTAL	1,122		



Līhu'e District



- Planning District Boundary
- Major Roads
- Roads
- Entitled Lands**
- Commercial
- Housing
- Mixed Use
- Resort

Residential

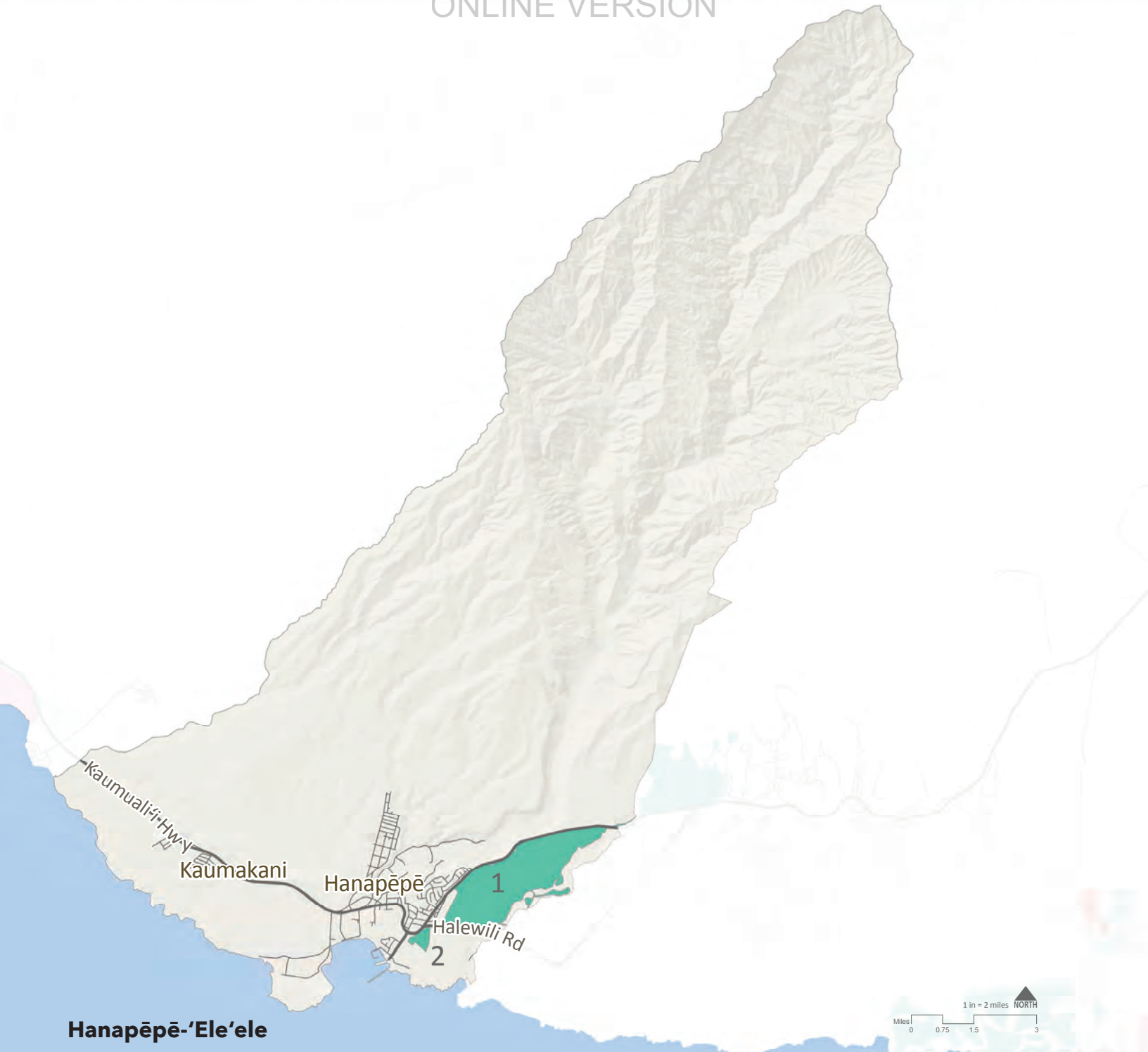
Map #	Project Name	Housing Units	GP Land Use Designation	Status
1	Waiola Phases I-III	196	Urban Center, Open, Residential	Final Approvals
2	Koamalu	220	Urban Center	Submitted Annual Status Report
3	Grove Farm Wailani Residential	1,450	Urban Center	Negotiating infrastructure and access issues
4	Kohea Loa - D.R. Horton	444	Urban Center	Submitted 2013 Status Report
5	DHHL Wailua, Phase I	188	Agriculture	No plan for development within GP timeframe
	TOTAL	2,498		

Resort

Map #	Project Name	Housing Units	GP Land Use Designation	Status
9	Kaua'i Lagoons	700	Resort	Submitted annual status report (2/8/11)
	TOTAL	700		

Commercial

Map #	Project Name	Sq. ft.	GP Land Use Designation	Status
3	Grove Farm Wailani Commercial	1,132,299	Urban Center	Unknown
6	Hokulei Village	220,000	Urban Center	Under Construction
7	Weinberg Foundation Renovation	24,350	Urban Center	Phase I complete
8	Weinberg Foundation/Ahukini	20,000	Urban Center	Seeking building permits
	TOTAL	1,398,549		



Hanapēpē-'Ele'ele








- Planning District Boundary
- Major Roads
- Roads
- Entitled Lands**
- Commercial
- Housing
- Mixed Use
- Resort

Residential

Map #	Project Name	Housing Units	GP Land Use Designation	Status
1	Lima Ola (affordable)	450	Agriculture, Open	Master Plan Complete, requires GP/SLU Amendment
2	A&B 'Ele'ele Residential	201	Urban Center	Unknown
	TOTAL	2,498		



Waimea-Kekaha

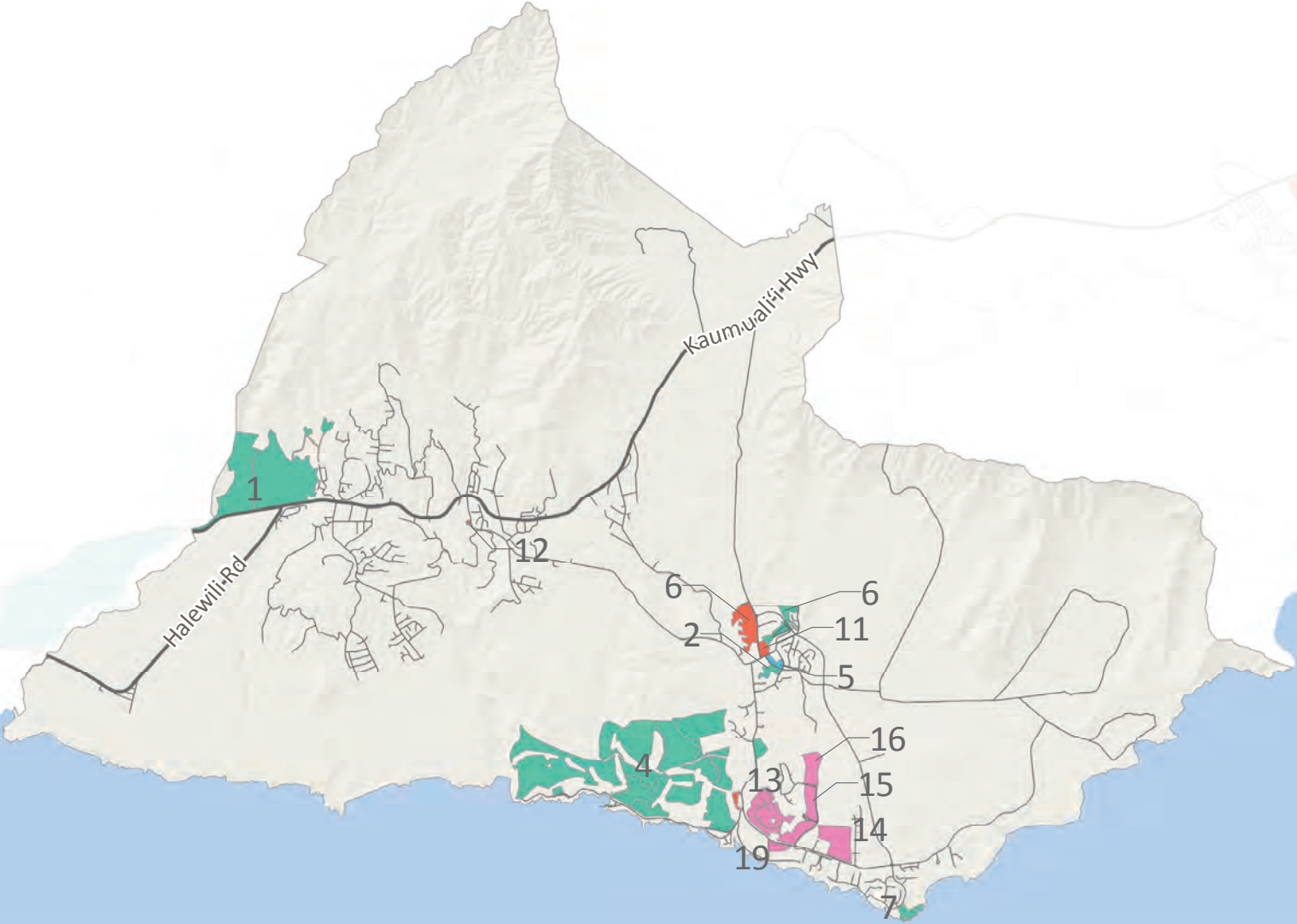
-  Planning District Boundary
-  Major Roads
-  Roads
- Entitled Lands**
-  Commercial
-  Housing
-  Mixed Use
-  Resort

Residential

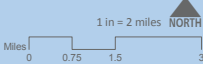
Map #	Project Name	Housing Units	GP Land Use Designation	Status
1	Kīkīāola Mauka	270	Residential	Unknown
2	Kīkīāola Field 14	56	Open, Residential	Not Constructed
	TOTAL	326		

Resort

Map #	Project Name	Housing Units	GP Land Use Designation	Status
3	Kapalawai Resort, LLC	250	Resort	Unknown
	TOTAL	1,122		



South Kaua'i



- Planning District Boundary
- Major Roads
- Roads
- Entitled Lands**
- Commercial
- Housing
- Mixed Use
- Resort

Residential

Map #	Project Name	Housing Units	GP Land Use Designation	Status
1	Brydeswood Ranch (A&B)	24	Open, Agriculture	Unknown
2	Kōloa Creekside	72	Residential	Ongoing
3	Kukui'ula Employee Housing	100	Residential, Open	Land deeded to County
4	Kukui'ula	750	Residential, Resort	Final subdivision map approval for parcels M1,M4,Y
5	The Village at Kōloa Town	34	Residential	Unknown
6	Kōloa Camp - Waihononu	50	Residential	Underway
7	CIRI (CLDC) Subdivision	10	Resort	Planning commision approved 8/26/14
	TOTAL	1,040		

Resort

Map #	Project Name	Housing Units	GP Land Use Designation	Status
12	Po'ipū Beach Estates	110	Resort	Several lots are built out
13	Village at Po'ipū	51	Resort	Moving forward
14	Pilimai at Po'ipū	191	Resort	Under construction
15	Kiahuna Po'ipū Golf Resort	282	Resort	Unknown
4	Kukui'ula	750	Residential, Resort	Final subdivision map approval for parcels M1,M4,Y
16	Palms at Po'ipū	56	Resort	Unknown
17	Sheraton Kaua'i Expansion	173	Resort	Unknown
	TOTAL	1,613		

Commercial

Map #	Project Name	Sq. ft.	GP Land Use Designation	Status
5	Village at Kōloa Town	96,000	Residential	Unknown
8	Kōloa Rum Company Store and Cafe	9,000	Residential, Agriculture, Open	Approved Planning Commision (Nov. 2014)
9	Kukui'ula ABC Store	21,000	Residential, Open	Approved Planning Commision (Nov. 2014)
10	Kōloa Marketplace	76,000	Residential	Unknown
11	Old Glass Warehouse	7,200	Residential	Approved Planning Commision (Nov. 2014)
	TOTAL	209,200		



North Shore

- Planning District Boundary
- Major Roads
- Roads
- Entitled Lands**
- Commercial
- Housing
- Mixed Use
- Resort

Residential

Map #	Project Name	Housing Units	GP Land Use Designation	Status
1	Kolopua (Princeville Affordable)	44	Resort	Under Construction
	TOTAL	44		

Commercial

Map #	Project Name	Sq. ft.	GP Land Use Designation	Status
2	Kīlauea Crossings	6,070	Residential	Unknown
3	Kīlauea Town Center	46,800	Residential	Commercial Shopping Center
4	Hanalei Halelea Office	2,000	Residential	Approved by Commission 2013
	TOTAL	54,870		

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APPENDIX G - ACTION MATRIX

Label Key

The following matrix lists actions included in Chapter 2.1 and Chapter 3. The first column of the matrix lists the action’s label, which corresponds to its section in the General Plan. The action matrix label key is listed below.

LABEL FULL NAME

WA	The Watershed	SS	Shared Spaces
WA A	Wao Nahele - The Upper Watershed	SS A	Town Centers
WA B	Kahawai - Middle Watershed, Drainage, and Freshwater Resources	SS B	Parks
WA C	Kahakai - Coastal Areas and Shorelines	SS C	Linear Parks and Trails
WA D	Threatened and Endangered Species	SS D	State Parks
HO	Housing	EC	Economy
HO A	Affordable Housing	EC A	Tourism
HO B	Infill Housing	ECB	Agriculture
HO C	New Communities	ECC	Small Business & Promising Economic Sectors
HO D	Agriculture Worker Housing	HR	Heritage Resources
HO E	Hawaiian Home Lands	HR A	Historic Buildings, Structure, and Places
HO F	Elderly Housing and Assisted Living Facilities	HR B	Wahi Pana, Cultural Sites, and Resources
HO G	The Houseless Population	HR C	Landmarks and Scenic Resources
HO H	Impact of Resort Uses on Housing Inventory	ES	Energy Sustainability & Climate Changes Mitigation
LT	Land Transportation	ESA	Energy Sustainability
LT A	General	ESB	Reduction of Greenhouse Gas Emissions
LT B	County Roads	PS	Public Safety & Hazards Resiliency
LT C	Transit Program	PSA	Police, Fire, Ocean Safety, Emergency Services
LT D	Pedestrian Program	PSB	Hazard Resiliency
LT E	Bicycle Program	PSC	Global Warming and Climate Change Adaptation
LT F	Parking Management	OH	Opportunity & Health for All
CI	Critical Infrastructure	OH A	Social Equity
CI A	Domestic Water	OH B	Access to Quality Education and Training
CI B	Wastewater, Septic Systems, and Cesspools	OH C	Community Health
CI C	Solid Waste Disposal and Recycling	OH D	Access to Recreation and Subsistence Activities
CID	Airports and Harbors	LU	Future Land Use

Action Objectives

The last column of the matrix lists the action's corresponding objective number. Objective numbers are listed below.

The Watershed

- 1: To conserve the upper watershed and restore native habitat and forested areas.
- 2: 1) To protect, restore, and enhance freshwater resources to support aquatic, environmental, and cultural resources; and, 2) to recognize and mitigate impacts from the built environment to the mid-watershed area.
- 3: To protect and enhance coastal resources and public access to the shoreline.
- 4: To protect the flora and fauna unique to Kaua'i and Hawai'i and to mitigate the impact of invasive species.

Housing

- 5: To increase housing opportunities for low to moderate income households.
- 6: To support mixed use, higher density, and walkable development in existing towns.
- 7: To develop compact, walkable communities consistent with the Future Land Use Map.
- 8: To expand housing opportunities for workers on farms.
- 9: To support the Department of Hawaiian Homelands in their mission to provide housing to their beneficiaries.
- 10: To accommodate the needs of an aging population through age-friendly community design and assisted living facilities.
- 11: To reduce Kaua'i's population of those houseless and at risk for houselessness.
- 12: To reduce the impact of resort uses on communities outside the Visitor Destination Area.

Land Transportation

- 13: To safely and efficiently move people and goods about Kaua'i by creating a more multimodal land transportation system. As a percentage of total trips, increase transit trips to 3.6%, walking trips to 11.5%, and bicycle trips to 7.6% by 2035 using 2010 data as a baseline.
- 14: To provide a safe and accessible County road network that supports the Future Land Use Map.

- 15: To enhance the viability of transit as a transportation choice for residents and visitors.
- 16: To provide connected and convenient pedestrian facilities in communities.
- 17: To create connected and safe bicycle networks that accommodate all riders.
- 18: To implement parking strategies that support community needs.

Critical Infrastructure

- 19: To ensure water for Kaua'i's water needs under the Public Trust Doctrine and integrate traditional ahupua'a methods of preserving water for future generations—not taking more than is needed and leaving enough for everyone.
- 20: To preserve and protect our fresh and ocean waters and other water resources from wastewater and other pollutants.
- 21: To provide environmentally-sound waste disposal and collection services with a goal to reduce the solid waste stream by 70 percent.
- 22: To support the modernization and user-friendliness of Kaua'i's airports and harbors.

Shared Spaces

- 23: To develop town centers as attractive places to work, live, and play.
- 24: To provide a variety of quality and accessible parks and recreational facilities.
- 25: To expand and improve access to Kaua'i's shared-use paths and trails.
- 26: To improve the resident and visitor experience at Kaua'i's State Parks.

Economy

- 27: To focus new resort development in areas designated for visitor use.
- 28: To ensure the long-term viability and productivity of agricultural lands.
- 29: To promote opportunities for small business and emerging economic sectors to thrive.

Heritage Resources

30: To preserve and enhance historic buildings, structures and places.

31: To recognize and protect the resources and places important to Kaua'i's history and people.

32: To preserve important landmarks and protect scenic resources.

Energy Sustainability & Climate Change Mitigation

33: To increase energy sustainability and maintain a reliable, resilient, and cost-efficient energy system.

34: To expand strategies and mechanisms to reduce greenhouse gas emissions on Kaua'i.

Public Safety & Hazards Resiliency

35: To ensure adequate coverage of public safety and emergency services as Kaua'i grows.

36: To ensure that Kaua'i is prepared for natural disasters and other emergencies.

37: To prepare for and adapt to the impacts of climate change on the natural and built environments.

Opportunity & Health for All

38: To recognize and address inequities in health and well-being among Kaua'i's diverse ethnic, racial, and income groups.

39: To support educational programs that foster cultural knowledge, employability, and civic participation of local residents.

40: To encourage healthy lifestyles and accessible health care.

41: To actively protect, restore, and increase access to the places where recreational and subsistence activity occurs.

Future Land Use

42: 1) To accommodate Kaua'i's projected population growth and housing needs. 2) To meet future housing needs through "missing middle" housing types that are affordable by design and located near jobs centers. 3) To protect rural character by ensuring new growth is designed to be compact and focused around existing town cores. 4) To manage land use and development in a manner that respects the unique character of a place. 5) To locate residential growth in and near major jobs centers. 6) To increase overall community health through design that supports safe and accessible parks, streets, and other shared spaces. 7) To encourage the development of Līhu'e as Kaua'i's primary urban center within an urban edge boundary. 8) To increase resiliency by limiting development in areas impacted by future sea level rise.

1. PERMITTING ACTIONS AND CODE CHANGES				
#	Label	Action	Lead Agency	Objective
1	WA 1.A.1	Review State DLNR Forest Reserve Plans when development is adjacent to Forest Reserves.	Planning	1
2	WA 1.A.2	Require best management practices for resource management.	Planning	1
3	WA 2.A.1	Avoid impacts to natural hydrologic recharge areas, stream corridors, floodplains, and wetlands through standards that: a. Guide development to avoid disturbance of natural drainage features, preserve wetlands and streams, and provide riparian buffer areas to prevent land disturbance and filter runoff. b. Require best management practices designed to control stormwater and polluted runoff. c. Ensure drainage systems are properly sized, built, and maintained. d. Incorporate trees, rain gardens, swales, green roofs, and other features that mimic natural systems.	Public Works / Planning	2
4	WA 2.A.2	Reduce erosion and retain sediment onsite during and after construction.	Planning / Public Works	2
5	WA 2.A.3	Ensure that Good Agricultural Practices and other runoff reduction measures are addressed when reviewing agricultural grading permit exemptions.	Planning	2
6	WA 2.A.4	Review and update drainage regulations and the drainage constraint district to incorporate and encourage green infrastructure concepts.	Planning	2
7	WA 2.A.5	If large detention basins are required to control drainage, design them for multiple uses and treat them as an important tool.	Planning	2
8	WA 2.A.6	Utilize existing Water Management Plans as examples of best management practices.	Planning	2

#	Label	Action	Lead Agency	Objective #
9	WA 2.A.7	<p>Expressly and consistently condition development and subdivision approvals, building permits, and other discretionary approvals for actions that may impact surface water resources, on at least one of the following:</p> <p>a. The prior implementation of updated instream flow standards and a monitoring plan for any surface water sources that are needed for any permitted project or development, when there is a reasonable possibility that public trust purposes are or may be harmed.</p> <p>b. Ground- or surface- water management area designation for any aquifer area where new or expanded water sources will need to be developed, when there is a reasonable possibility of harm to public trust purposes in either ground or surface waters.</p> <p>c. The explicit application and execution of the “framework” of analysis set forth by the Hawai’i Supreme Court in the <u>Kaua’i Springs</u> case, prior to the issuance of any permit or other discretionary approval by the County Planning Department, Planning Commission, or County Council.</p>	Planning	2
10	WA 2.A.8	Provide for the crossing of water courses by spanning rather than by culverts when possible, so that natural streambeds will not be altered.	Public Works / Planning	2
11	WA 2.A.9	Support the protection, restoration, and enhancement of surface and subsurface water resources, stream habitats, and watershed areas to support: groundwater aquifer recharge; aquatic and environmental processes; riparian, scenic, recreational, and Native Hawaiian cultural resources; and constitutionally-protected Native Hawaiian traditional and customary practices.	Planning	2
12	WA 2.A.10	Support mauka to makai streamflow, which is essential to the survival of native stream life.	Planning	2
13	WA 2.A.11	Support mediated agreements, such as that in Waimea, to restore streamflows to meet public trust purposes for Wailua River, Hule’ia River, and others, while avoiding costly litigation.	Planning	2

#	Label	Action	Lead Agency	Objective #
14	WA 3.A.1	<p>Minimize coastal hazard risks through planning and development standards that:</p> <ul style="list-style-type: none"> a. Ensure the safety of individuals, families, and communities within coastal hazard areas and communicate the dangers to residents and tourists. b. Discourage development or redevelopment (including tourist uses) within hazardous areas, while preserving adequate space for expected future growth in areas located outside these areas; c. If hazard risks are unavoidable, minimize hazard risks to new development over the life of authorized structures. d. Ensure property owners assume the risks associated with new development in hazardous areas; e. Limit development near vulnerable water supplies; and, f. Manage water supply issues resulting from saltwater intrusion, such as limits on groundwater withdrawal or diversification of water supplies. 	Planning	3
15	WA 3.A.2	<p>Avoid or minimize coastal resource impacts through development standards that:</p> <ul style="list-style-type: none"> a. Protect public beach, rocky coasts, dune, wetland, river, and stream resources in all coastal planning and regulatory decisions. b. Protect the quality of coral reefs through standards that address, prevent, and minimize impacts from development. c. Minimize impacts to view corridors from roads or public places to the ocean and from mauka to makai. d. Preserve and protect Kaua'i's sandy beaches and shorelines from erosion and degradation while ensuring continued public access to them. e. Ensure adequate parking and convenient public access to coastal lands in all zoning and subdivision permits. 	Planning	3
16	WA 3.A.3	Promote strategic beach nourishment in public use areas.	Planning	3
17	WA 3.A.4	Seek to preserve natural beach processes and avoid the construction of shoreline protection structures.	Planning	3
18	WA 3.A.5	Do not allow permanent armoring of the shoreline.	Planning	3

#	Label	Action	Lead Agency	Objective #
19	WA 3.A.6	<p>Include the following guidelines for coastal development in the CZO:</p> <p>a. For resorts and other multi building complexes, transition from low building heights along the shoreline to taller buildings on the interior of the property.</p> <p>b. Provide an open, vegetated visual buffer between the shoreline and buildings.</p> <p>c. Protect community accessways laterally along the coast in the buffer zone mauka of the shoreline.</p> <p>d. 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.</p>	Planning	3
20	WA 3.A.7	Update the Shore District in relation to the SMA regulations.	Planning	3
21	WA 3.A.8	Continually incorporate new information on climate change into shoreline policies and regulations.	Planning	3
22	WA 4.A.1	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.	Planning	4
23	WA 4.A.2	Require the use of noninvasive plant species for landscaping of newly developed areas, public lands, and roadways.	Planning	4
24	WA 4.A.3	<p>Require future development to address potential impacts on threatened or endangered flora and fauna:</p> <p>a. Evaluate potential loss of habitat.</p> <p>b. Identify all endangered and threatened species present.</p> <p>c. List minimization efforts.</p> <p>d. If mitigation is needed, join an established Habitat Conservation Plan or develop one.</p>	Planning	4
25	WA 4.A.4	Encourage new development to implement voluntary actions to encourage a net gain in protection efforts of our threatened and endangered species.	Planning	4
26	WA 4.A.5	Minimize risks to threatened and endangered species in construction and development activity.	Planning	4
27	HO 1.A.1	Update the County's Housing Ordinance into a workable law requiring all developers to contribute a fair share of resources to build affordable housing in a "win-win" manner.	Housing	5

#	Label	Action	Lead Agency	Objective #
28	HO 1.A.2	Design and locate affordable housing projects in or near job centers to minimize household transportation costs, community and household fossil fuel usage, and traffic congestion.	Housing	5
29	HO 1.A.3	Support economically integrated communities by requiring affordable housing mandates to be met on site.	Housing	5
30	HO 1.A.4	Amend Ordinance 860, Workforce Housing, to incentivize the creation of affordable housing development.	Mayor's Office / County Council	5
31	HO 1.A.5	Preserve the affordable housing stock by adopting a policy that any units built with taxpayer moneys or required under the Housing Ordinance for the general welfare shall be perpetually affordable to allow the inventory of affordable homes to grow rather than contract (which happens when such units are allowed to be sold on the open market).	Housing	5
32	HO 1.A.6	When possible, encourage the design of affordable, energy-efficient residential projects with civic spaces, shade trees, and pedestrian/bicycle amenities to enhance livability, equity, and safe transit options, especially for children.	Housing	5
33	HO 1.A.7	For county-sponsored housing subsidized with public money, the County shall require the units to be affordable for the life of the building and the land to remain in county ownership in perpetuity.	Housing	5
34	HO 2.A.1	Allow for multi-family 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.	Planning	6
35	HO 2.A.2	Facilitate the development of small-footprint homes or "tiny homes" on small lots.	Planning	6
36	HO 2.A.3	Update zoning in and around town centers to facilitate mixed use and infill development, such as units above commercial space.	Planning	6
37	HO 2.A.4	Streamline permit approvals for infill development and housing rehabilitation by removing barriers, such as administrative delays.	Planning	6
38	HO 2.A.5	Incentivize infill development by reducing or eliminating tipping fees, wastewater and water facility charges, permit review fees, and park and environmental assessment fees.	Planning	6
39	HO 2.A.6	Update the building code to reduce construction costs and facilitate cost-saving materials and technology while maintaining health and safety.	Planning	6

#	Label	Action	Lead Agency	Objective #
40	HO 2.A.7	Reevaluate the definition of “kitchen” to provide flexibility for multi generational housing.	Planning	6
41	HO 2.A.8	Increase lot coverage allowances to provide for more ADUs within the residential district.	Planning	6
42	HO 3.A.1	Locate new communities only in areas designated for growth in the Land Use Map.	Planning	7
43	HO 3.A.2	Avoid sprawl development patterns and inefficient infrastructure and service delivery by maximizing density in new communities.	Planning	7
44	HO 3.A.3	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.	Planning	7
45	HO 3.A.4	Increase opportunities for moderate- and low-income households to become homeowners by providing a range of housing types.	Planning	7
46	HO 3.A.5	Build housing in proximity to jobs, parks, community resources, and services.	Housing / Planning	7
47	HO 3.A.6	Ensure subdivisions are designed to support housing type diversity, maximize density, provide safe pedestrian/bicycle connections, and slow speed on roads.	Planning	7
48	HO 3.A.7	Take a proactive role in supporting zoning amendments and redistricting consistent with the General Plan and updated Community Plans.	Planning	7
49	HO 3.A.8	Allow higher density to increase profitability for developers, resulting in a cheaper housing per unit cost.	Planning	7
50	HO 3.A.9	New communities should incorporate green infrastructure into their design and be water and energy efficient.	Planning	7
51	HO 3.A.10	Require non-entitled new communities in this General Plan to attain full State and County district and zoning approvals by 2027. Require short-duration expiration dates should development not be constructed as permitted, unless stated otherwise.	Planning	7
52	HO 3.A.11	Prohibit future subdivision and development from restricting construction of ADUs in their deed and covenants.	Planning	7

#	Label	Action	Lead Agency	Objective #
53	HO 4.A.1	<p>Support the development of a limited amount of housing on agricultural land for farm workers and their families by:</p> <p>a. Improving the existing process to obtain Farm Worker Housing Permits and remove barriers to participation.</p> <p>b. Providing outreach on the Farm Worker Housing Law to increase participation.</p>	Housing / Economic Development	8
54	HO 5.A.1	<p>Prior to the issuance of development and subdivision approvals, building permits, and other discretionary approvals for actions that may impact water sources that could also serve or impact the water needs of DHHL, consult with DHHL regarding their projected water needs and other rights to water under the public trust, such as those described or referenced under Hawai'i State Constitution Art. XII § 1; Hawai'i Revised Statutes §§ 168-4, 171-58, and 174C-49; Hawaiian Homes Commission Act §§ 220 and 221; and interpretive case law.</p>	Planning / Housing	9
55	HO 6.A.1	<p>Provide additional housing and assisted living facilities for Kaua'i's increasing elderly population by:</p> <p>a. Increasing the supply of housing that is affordable, accessible to services, and promotes aging-in-place.</p> <p>b. Allow multi-generational housing that accommodates family home care situations.</p> <p>c. Revising development standards to facilitate approval of assisted living units and continuing care communities.</p>	Planning	10
56	HO 6.A.2	<p>Integrate universal design standards into Kaua'i's building code.</p>	Planning	10
57	HO 7.A.1	<p>Allow managed micro-housing developments or camp sites for the houseless.</p>	Housing	11
58	HO 7.A.2	<p>Allow development of Single Resident Occupancy unit projects.</p>	Housing	11

#	Label	Action	Lead Agency	Objective #
59	HO 8.A.1	Reduce the impact and number of transient vacation rentals and similar uses, such as Bed & Breakfasts, in the communities outside the VDA by: a. Continuing aggressive enforcement against illegal TVRs. b. Supporting attrition and amortization of non-confirming TVRs, especially in high hazard areas. c. Monitoring and enforcing laws against new types of transient rentals facilitated by sharing economy websites, such as Airbnb and VRBO. d. Creatively exploring ways to use the tax code for enhanced compliance of non-confirming TVRs.	Planning	12
60	HO 8.A.2	Set fines and taxes on illegal and legal vacation rentals respectively that remove homes from the local residential market supply. The penalties should be high enough to deter illegal use.	Planning / County Council	12
61	LT 1.A.1	Coordinate land use planning with transportation 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.	Planning / Transportation	13
62	LT 1.A.2	Require that transportation impact analysis reports and other traffic studies analyze a project's potential to encourage mode shift.	Planning / Transportation	13
63	LT 2.A.1	Complete new street design standards to address all users.	Public Works	14
64	LT 2.A.2	Amend the zoning and subdivision codes to support multimodal transportation options and safety for all users.	Planning / County Council	14
65	LT 2.A.3	Develop a traffic calming toolkit and update the County Traffic Code to allow for traffic calming features.	Public Works	14
66	LT 2.A.4	Designate, sign, and enforce truck routes.	Public Works / Police	14
67	LT 2.A.5	Update the school zone ordinance and signage.	Planning	14
68	LT 3.A.1	Provide density bonuses for workforce housing near transit.	Planning	15
69	LT 4.A.1	Identify high-priority pedestrian safety projects based on crash data.	Planning / Public Works	16
70	LT 5.A.1	Incorporate bicycle parking requirements into the Comprehensive Zoning Ordinance.	Planning	17
71	CI 1.A.1	Prioritize increasing domestic water supply, storage, and distribution systems to meet projected needs while encouraging conservation.	Water	19

#	Label	Action	Lead Agency	Objective #
72	CI 1.A.2	Prioritize water infrastructure improvements in infill development areas.	Water	19
73	CI 1.A.3	Encourage alternatives for non-potable water usage, such as rainwater catchment and greywater recycling.	Water	19
74	CI 1.A.4	Support water savings through land use practices like low impact development (LID), <i>Ahwahnee Water Principles for Resource Efficient Land Use</i> , new green building programs, and onsite and offsite conservation land use practices.	Water	19
75	CI 1.A.5	Conduct an audit of the County's dependency on surface water regarding future development, based on legal availability and water regulations.	Planning	19
76	CI 2.A.1	Require large-scale developers to contribute funds toward improved recycled water production and distribution, or to construct their own wastewater reclamation facility.	Planning / County Council	20
77	CI 2.A.2	Manage wastewater treatment and disposal in a manner that safeguards human and environmental health, accommodates future growth, is efficient and cost effective, and uses recycled water from treatment where possible.	Public Works	20
78	CI 2.A.3	Improve the quality of effluent discharged into injection wells, especially those in the Special Management Areas.	Public Works	20
79	CI 2.A.4	Support innovative treatment systems that produce effluent at appropriate water quality levels to encourage reuse such as irrigation, industrial uses and other non-potable use.	Public Works	20
80	CI 3.A.1	Reduce construction and demolition debris disposal in landfills by requiring recycling, particularly for large contractors and construction projects.	Public Works	21
81	CI 4.A.1	At airports, accommodate shuttles that transport visitors to resort destinations.	State DOT	22
82	CI 4.A.2	Do not expand the Princeville Airport, except for use as a parking hub and gateway for visitors to the North Shore.	Planning	22

83	SS 1.A.1	Encourage vibrant shared space and destinations in town centers by: a. Implementing design standards to ensure the aesthetic character of buildings blends in and matches the desired scale and character of the town. b. Allowing historic buildings on small lots to redevelop without the imposition of new setbacks or off-street parking requirements. c. Siting new commercial development contiguous to towns, within walking distance of residential development. d. Supporting the creation of and improvement of venues for art and culture. e. Providing comfortable and safe walking environments, including context-sensitive sidewalks along main roads. f. Enhancing shade resources, including trees on streets and in public parks, and improving criteria for species selection and programs for tree maintenance. g. Providing more on-street parking.	Planning	23
84	SS 2.A.1	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.	Parks & Recreation	24
85	SS 2.A.2	Provide a range of civic space and functional parks in large residential projects and in new communities.	Planning	24
86	SS 2.A.3	Streamline permitting of public facilities to efficiently coordinate the development and expansion of parks.	Planning	24
87	SS 2.A.4	Allow in-lieu funding expenditure on facility capital improvements through the Park Dedication Ordinance.	Parks & Recreation / County Council	24
88	SS 3.A.1	Provide safe and convenient access to beaches and inland resources through the park system.	Parks & Recreation	25
89	SS 3.A.2	Identify and design new shared use paths to provide safe corridors for pedestrians and cyclists.	Public Works	25
90	SS 3.A.3	Encourage the development of access ways to the path, when development is adjacent to or near a shared use path.	Planning	25
91	SS 3.A.4	Increase opportunities for public access to mountainous and forested areas in a way that is ecologically sustainable.	DLNR	25

#	Label	Action	Lead Agency	Objective #
92	EC 1.A.1	Revitalize—rather than expand—the existing Visitor Destination Areas in Po’ipū, Līhu’e, Wailua, and Princeville.	Planning	27
93	EC 1.A.2	Focus visitor uses, services, facilities, and accommodation in the Visitor Destination Area.	Planning / Economic Development	27
94	EC 1.A.3	Do not expand existing Visitor Destination Area boundaries beyond resort-designated areas.	Planning	27
95	EC 1.A.4	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 2027, or within ten years of Community Plan approval if an area is conditionally designated.	Planning	27
96	EC 1.A.5	Require short-duration expiration dates should development not be constructed as permitted.	Planning	27
97	EC 1.A.6	Where appropriate, negotiate with entitled resort projects to reduce unit count if discretionary permits are sought again.	Planning	27
98	EC 1.A.7	Create a regulatory system that ensures resort developers pay their own way by paying their fair share of system expansion for all public systems, including but not limited to land transportation improvements, housing, water, sewer, cables, and parks.	Planning	27
99	EC 2.A.1	Ensure agriculture-designated lands are used for agriculture and related activities, including aquaculture, commercial forestry, and animal husbandry.	Planning	28
100	EC 2.A.2	Use urban growth boundaries or other land preservation easements to limit conversion of agriculture-designated lands to non-agricultural uses.	Planning	28
101	EC 2.A.3	Control the subdivision and alteration of agriculturally-zoned land to prevent the dissipation of agricultural potential, the loss of rural character, and the conversion of land use to urban land use designations.	Planning	28
102	EC 2.A.4	Provide criteria to allow clustering of allowable density for landowners of Important Agricultural Land (IAL).	Planning	28

103	EC 2.A.5	To the extent that public trust purposes would not be impacted or continue to be impacted, or where serviced agricultural operations constitute a reasonable and beneficial use that furthers the interests of the public, require preservation of viable irrigation systems – both government owned and privately owned – to support the supply of irrigation water to farms, provided that mitigation measures are taken to minimize any impacts to public trust purposes.	Planning	28
104	EC 2.A.6	Support landowner and farmer-initiated designations of important agricultural lands that at least meet criterion number five of Act 183 (SLH 2005), “land with sufficient quantities of water to support viable agricultural production.”	Planning	28
105	EC 2.A.7	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.	Planning	28
106	EC 2.A.8	Revise the agricultural property tax regime, including but not limited to the Agricultural Dedication program, to increase incentives to lease land for productive farms.	Economic Development / Finance	28
107	EC 2.A.9	Clarify rules and authority related to permitting of agricultural structures and uses on IAL.	Planning	28
108	EC 2.A.10	Include community gardens as a permitted use in residential areas.	Planning	28
109	EC 2.A.11	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 205-4.5.	Planning	28
110	EC 3.A.1	Lessen zoning restrictions for home-based businesses.	Planning	29
111	EC 3.A.2	Reduce the costs and regulatory hurdles associated with starting a business.	Economic Development	29
112	EC 3.A.3	Increase inventory of industrial zoned lands.	Planning	29
113	HR 1.A.1	Broaden the types of uses allowed in historic structures.	Planning	30
114	HR 1.A.2	Support the reuse and renovation of historic structures through building code amendments.	Planning	30
115	HR 1.A.3	Update and create Special Planning Areas in towns to ensure new development and redevelopment of existing sites or structures is done in a “historically sensitive” manner.	Planning	30

#	Label	Action	Lead Agency	Objective #
116	HR 2.A.1	Preserve, restore, and maintain customary access to important archaeological and cultural sites.	Planning	31
117	HR 2.A.2	Create natural, landscaped buffers between archaeological sites and adjacent uses.	Planning	31
118	HR 2.A.3	In the case of development where burials are known to exist, ensure an Archaeological Inventory Study (AIS) is prepared and Kaua'i Island Burial Council recommendations are adhered to before final approvals are given.	Planning	31
119	HR 2.A.4	Require developers to provide archaeological and cultural assessments prior to clearing or development of land in areas of historical significance.	Planning	31
120	HR 2.A.5	Promote, encourage, and require the correct use of traditional place names.	Planning	31
121	HR 2.A.6	Establish archaeological districts where high concentrations of sites exist.	Planning	31
122	HR 2.A.7	Encourage restoration, management, and practitioner access for significant cultural sites on private land, as allowed by law.	Planning	31
123	HR 2.A.8	Encourage the restoration, management, and use of Kaua'i's fishponds and lo'i kalo.	Planning	31
124	HR 2.A.9	Preserve Māhā'ulepū, a wahi pana, where scenic landmarks, natural resources, archaeological sites (including Waiopili Heiau), and burials are found along with subsistence fishing and gathering, agriculture, research and education, and recreation.	Planning	31
125	HR 2.A.10	Movement of kuleana lands through the subdivision process is inconsistent with their intrinsic cultural and historic value and negatively impacts traditional and customary Native Hawaiian rights and practices, which are protected by the Hawai'i State Constitution. Prior to any decision, any movement requires proper due diligence to ensure any historic value relating to the kuleana's past land use is identified and protected to the fullest extent possible consistent with Article XII, Section 7 of the Hawai'i State Constitution, the <u>Ka Pa'akai</u> test, and HRS Chapter 6E. In addition, proper notice must be afforded to the State Office of Hawaiian Affairs and beneficiaries and heirs of the kuleana at issue before any movement is approved.	Planning	31

#	Label	Action	Lead Agency	Objective #
126	HR 3.A.1	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, view planes, and landmarks in the siting of new development.	Planning	32
127	HR 3.A.2	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.	Planning	32
128	ES 1.A.1	Promote increased energy conservation and renewable energy production.	Mayor's Office	33
129	ES 1.A.2	Optimize the mix of energy crops that can provide fuel for power production on Kaua'i.	Mayor's Office	33
130	ES 1.A.3	Streamline and expedite planning and permitting processes involving renewable energy facilities.	Planning	33
131	ES 1.A.4	Require new buildings to incorporate economically feasible design and equipment for energy sustainability, including but not limited to: solar hot water capacity and proper insulation.	Public Works	33
132	ES 1.A.5	Conduct an audit of the County's development standards to identify regulations that are obstacles to or could be altered to better encourage or require green building practices.	Planning	33
133	ES 2.A.1	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.	Planning	34
134	ES 2.A.2	Reduce the carbon footprint of both new and existing buildings and infrastructure by maximizing energy efficiency and minimizing the use of fossil fuel resources on the grid.	Planning	34
135	ES 2.A.3	Accelerate the transition to alternative, carbonfree fuels in the ground transportation sector with regulations and policies that support electric vehicle adoption and other alternative fuel infrastructure, and support electric groundskeeping and farming equipment/machinery.	Transportation / Economic Development	34
136	ES 2.A.4	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.	Planning	34

#	Label	Action	Lead Agency	Objective #
137	ES 2.A.5	Support continued reductions in emissions from local energy production.	Mayor's Office	34
138	PS 1.A.1	Maintain effective levels of public safety services to protect the growing population.	Mayor's Office / County Council	35
139	PS 1.A.2	Upgrade and enhance facilities to address existing vulnerabilities and support necessary growth in emergency response personnel.	Emergency Management	35
140	PS 2.A.1	Minimize coastal development in areas of high risk of erosion, flooding, tsunami inundation, and sea level rise.	Planning	36
141	PS 2.A.2	Provide for adequate emergency shelters and communication systems in all planning districts.	Emergency Management	36
142	PS 2.A.3	Periodically review building codes and permitting standards for alignment with disaster risk reduction (DRR) efforts.	Emergency Management	36
143	PS 2.A.4	Designate areas to serve as public shelters when designing and constructing new public buildings.	Planning	36
144	PS 2.A.5	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, hurricanes, or flooding. Require disclosure of hazards prior to reserving or booking.	Planning	36
145	PS 3.A.1	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 suggests a planning target of three feet of sea level rise.	Planning	37
146	PS 3.A.2	Regularly review and refine relevant policies, rules, and regulations based on the most currently available climate and hazard science and projections.	Planning	37
147	PS 3.A.3	Identify lands/areas that may serve as buffers from coastal hazards and restrict development within them.	Planning	37
148	PS 3.A.4	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.	Planning	37
149	PS 3.A.5	Update the Floodplain Management Program to incorporate sea level rise planning information, utilizing options detailed in the <i>Kaua'i Climate Change and Coastal Hazards Assessment</i> or other relevant resources.	Planning	37

#	Label	Action	Lead Agency	Objective #
150	PS 3.A.6	<p>Within the Special Management Area (SMA) and Zoning Permit program:</p> <p>a. Require applicants to analyze coastal hazard impacts and include mitigation in permit applications.</p> <p>b. Impose development conditions upon permits that minimize the impacts of exacerbated flooding, storm surge, and erosion due to sea level rise.</p> <p>c. Strengthen rebuilding restrictions for non-conforming structures such that these structures are relocated a safe distance from the shoreline in hazardous areas.</p> <p>d. Evaluate conditions that prohibit shoreline armoring.</p>	Planning	37
151	PS 3.A.7	<p>Update the subdivision standards to:</p> <p>a. Restrict residential subdivisions in areas prone to current and future coastal hazards, including sea level rise.</p> <p>b. outside of these natural hazards areas, provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources.</p>	Planning	37
152	PS 3.A.8	Periodically update the building codes 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.	Planning / Public Works	37
153	PS 3.A.9	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.	ALL	37
154	OH 1.A.1	Limit the proliferation of predatory lending establishments through licensing and zoning powers.	Planning	38
155	OH 1.A.2	Expand and preserve affordability in neighborhood centers around the island through zoning, incentives, and development.	Planning	38
156	OH 1.A.3	Provide affordable housing in proximity to community resources and services.	Planning	38
157	OH 1.A.4	Mitigate impact to Native Hawaiian traditional and customary practices and the resources they rely upon through district boundary amendments and zoning amendments.	Planning	38

#	Label	Action	Lead Agency	Objective #
158	OH 2.A.1	For large residential projects and in new communities, ensure the development of adequate school facilities, either at existing schools or at new school sites.	Planning	39
159	OH 2.A.2	Have developers pay their share of all costs needed to provide adequate school facilities for the children anticipated to live in their development.	Planning	39
160	OH 2.A.3	Support the use, expansion, and development of family childcare homes, preschools, parent/child kindergarten readiness programs, and charter schools.	Planning	39
161	OH 3.A.1	Provide access to frequent and convenient public transit near major job centers and health care facilities.	Transportation	40
162	OH 3.A.2	Ensure community design supports healthy and active lifestyles.	Planning	40
163	OH 3.A.3	Consider zoning options that limit new fast-food restaurants close to schools, daycare centers, or parks.	Planning	40
164	OH 3.A.4	Support the built environment and land use recommendations provided by the Native Hawaiian Health Task Force and similar community health initiatives.	Planning	40
165	OH 4.A.1	Require a minimum accessway width of 10 feet and locate accessways at convenient intervals.	Planning	41
166	OH 4.A.2	Protect and preserve mauka and makai access for traditional Hawaiian cultural practices.	Planning	41
167	OH 4.A.3	Require identification and mitigation of potential impacts of subsistence activities and resources when reviewing development permits.	Planning	41
168	LU A.1	Implement a zoning program to comprehensively redistrict and rezone lands consistent with the Future Land Use Map and updated Community Plan and map designations.	Planning	42
169	LU A.2	Build upon place types in future Community Plans and update zoning and development standards to be place-based.	Planning	42
170	LU A.3	Support State Land Use Boundary Amendment Petitions for new Urban District consistent with the Future Land Use Map.	Planning	42
171	LU A.4	Given that the Future Land Use Map is conceptual, the size of future amendments to the State Land Use District Urban District should consider the General Plan's population allocations, housing projections, and the objectives for New Communities.	Planning	42

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2. PLANS AND STUDIES				
#	Label	Action	Lead Agency	Objective
1	WA 1.B.1	Utilize the Forest Reserve and Natural Area Reserve Plans in community planning processes and share information regarding forest management activities with the public.	Planning	1
2	WA 1.B.2	Through appropriate county departments, support KWA members in the development of future watershed management plans and appropriate studies as needed for the health of the upper native forests.	Planning	1
3	WA 2.B.1	In Community Plans, include protection actions for streams and inland water bodies to prevent degradation of water quality and address non-point source pollution.	Planning	2
4	WA 2.B.2	Establish a drainage system database to better understand the drainage network on Kaua'i and to assist with water quantity and quality impacts.	Public Works	2
5	WA 2.B.3	Periodically review the County's flood control measures and plans using updated information and forecasts on climate change.	Planning / Public Works	2
6	WA 2.B.4	Develop drainage master plans for flood-prone areas such as Hanalei, Nāwiliwili, Kapa'a, Wailua, Po'ipū, and Kekaha.	Planning / Public Works	2
7	WA 3.B.1	Restore lost and unrecorded beach accesses by identifying, recording, and demarcating accessways for public use.	Planning	3
8	WA 3.B.2	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 and inform stakeholders including tourists of these dangers.	Planning	3
9	WA 3.B.3	Recognize scientific uncertainty by using scenario planning and adaptive management techniques that adjust policies and rules based on monitoring efforts.	Planning	3
10	WA 3.B.4	Analyze options and criteria for relocation of development outside of hazardous areas along the coast and incorporate findings into a long-term relocation plan.	Planning	3
11	WA 3.B.5	Support studies to assess impacts to coastal and cultural resources at Salt Pond Beach and Pū'olo Point in collaboration with community members, including but not limited to the salt making practitioners.	Planning	3

#	Label	Action	Lead Agency	Objective #
12	HO 1.B.1	Find ways to insulate affordable housing units from the market, whether rentals or for ownership, to preserve the affordability of units.	Housing	5
13	HO 1.B.2	Review existing affordable housing requirements in plans and zoning amendments to assess impediments to affordable housing creation.	Planning	5
14	HO 1.B.3	Assess the County's affordable housing needs and priorities through the five-year Consolidated Plan and one-year Action Plans.	Housing	5
15	HO 1.B.4	Establish a ratio for the housing needs for workforce, elderly, and disabled households, and amend existing laws and plans as needed.	Housing	5
16	HO 2.B.1	Prevent displacement of vulnerable renters through rent stabilization policies and tax incentives for long-term rentals.	Housing/Finance	6
17	HO 5.A.1	Integrate the recommendations of DHHL plans into community planning.	Planning	9
18	HO 7.B.1	Support the implementation and update of the <i>Kaua'i Houseless Solutions Summit Plan</i> .	Mayor's Office	11
19	LT 1.B.1	In all Community Plans, incorporate planning of roadway, transit, bike and pedestrian facilities, and transportation needs to support economic revitalization.	Planning	13
20	LT 1.B.2	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.	Planning	13
21	LT 1.B.3	In all Community Plans, develop a regional traffic circulation plan that includes all modes of transportation.	Planning	13
22	LT 3.B.1	Implement the <i>Short-Range Transit Plan</i> .	Transportation	15
23	LT 3.B.2	Complete a Mid-Range (4-7 year) Transit Plan for longer-term transit planning.	Transportation	15
24	LT 3.B.3	Address the feasibility and practicality of accommodating luggage, surfboards, and other large objects on County and private buses.	Transportation	15
25	LT 4.A.1	Identify high-priority pedestrian safety projects based on crash data.	Transportation	16
26	LT 5.B.1	Establish an islandwide bikeways plan with priorities for implementation through the community planning process.	Planning / Public Works	17
27	LT 6.A.1	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.	Planning	18

#	Label	Action	Lead Agency	Objective #
28	LT 6.A.2	In partnership with the State, develop and implement a Parking Management Plan for the Līhu'e Civic Center.	Planning	18
29	CI 1.B.1	Implement and update the County Water Plan to guide system expansion, improvement, rehabilitation, and rate structures to support growth consistent with the General Plan and Community Plans.	Water	19
30	CI 1.B.2	Reduce potable water usage through recycled water and alternative individual water systems such as rainwater catchment and greywater recycling, and incorporate these into the County Water Plan Update.	Water	19
31	CI 1.B.3	Update sustainable yield of aquifers, incorporating most recent United States Geological Survey (USGS) low-flow studies and surface water data into the County Department of Water budget, with appropriate reservations for public trust purposes including environmental protection, traditional and customary Native Hawaiian rights, appurtenant rights, domestic water uses, and the needs of the Department of Hawaiian Home Lands.	Water	19
32	CI 1.B.4	Reconcile water service areas with County planning districts to integrate facilities with Community Plans.	Water	19
33	CI 2.B.1	Develop and update wastewater facility plans to guide decisions regarding the allocation of treatment capacity, the expansion of wastewater systems, and system improvement priorities.	Public Works	20
34	CI 2.B.2	Coordinate public and private planning, development, operation, and management of wastewater treatment and disposal systems.	Public Works	20
35	CI 3.B.1	Update and implement the <i>Solid Waste Integrated Management Plan</i> to set policies for solid waste programs, facility planning, capital improvements, operations, user fees, and financing facilities and operations.	Public Works	21
36	CI 3.B.2	Plan and prepare for emergency debris management and disposal due to future major storms and tsunamis.	Public Works	21
37	SS 1.B.1	Acknowledge the important role of town squares and other civic space in town centers and seek to improve usability of such venues.	Planning	23
38	SS 1.B.2	Establish or update urban design standards through Community Plans.	Planning	23
39	SS 1.B.3	Identify public art opportunities and funding in community and facility planning.	Planning	23
40	SS 2.B.1	Plan for safe routes to parks, especially in areas with high concentration of youth.	Parks & Recreation	24

#	Label	Action	Lead Agency	Objective #
41	SS 2.B.2	Utilize vacant or underused County-owned land for community purposes.	Mayor's Office	24
42	SS 2.B.3	Update and implement the <i>Kaua'i Parks & Recreation Master Plan (2013)</i> .	Planning	24
43	EC 1.B.1	Implement and update the <i>Kaua'i Tourism Strategic Plan</i> .	Economic Development	27
44	EC 1.B.2	Explore the development of the carrying capacity for various sites around the island and a monitoring system that tracks visitor impacts within the context of "limits of acceptable change" or other metric.	Economic Development	27
45	EC 1.B.3	Create a comprehensive incentive and disincentive plan to address visitor numbers and impacts in specific areas.	Economic Development	27
46	EC 2.B.1	Consider the relationship and proximity of other land uses to agricultural land in planning efforts. Define "rural" and include its relationship to agriculture.	Planning	28
47	EC 2.B.2	Update and implement the <i>Agricultural Water Use and Development Plan</i> .	Water	28
48	EC 2.B.3	Improve upon or develop a system for local and export marketing of food and primary resources.	Economic Development	28
49	EC 2.B.4	Create an agriculture database of key information and indicators that would enable the monitoring of agricultural progress and growth.	Economic Development	28
50	EC 2.B.5	Increase access to healthy food in underserved neighborhoods and build more equitable food systems, from cultivation to disposal.	Economic Development	28
51	EC 2.B.6	Update and implement the <i>Kaua'i Agriculture Strategic Plan</i> .	Economic Development	28
52	EC 3.B.1	Implement and update the Comprehensive Economic Development Strategy (CEDs).	Economic Development	29
53	EC 3.B.2	Develop business improvement districts and Main Street programs to fund revitalization efforts.	Economic Development	29
54	HR 1.B.1	Update and maintain the inventory and management plan for historic resources.	Planning	30
55	HR 2.B.1	Inventory and acknowledge the importance of archaeological sites and wahi pana during community planning processes.	Planning	31
56	HR 2.B.2	Create an inventory of kuleana lands and describe their vulnerability to sale and development.	Planning	31
57	HR 2.B.3	Create a county-level tax break for ancestral family lands that do not qualify for kuleana tax breaks for situations such as hanai (adoption), families without birth and death certificates, and other circumstances.	Planning	31
58	HR 3.B.1	Identify key landmarks, exceptional trees, and scenic resources through Community Plans.	Planning	32

#	Label	Action	Lead Agency	Objective #
59	HR 3.B.2	Develop an inventory of scenic resources/views, view planes, visual resources, and key landmarks through joint collaboration of the Kaua'i Historic Preservation Review Commission and the Open Space Commission.	Planning	32
60	HR 3.B.3	Support creation and implementation of corridor plans for historic and scenic roadways.	Planning	32
61	ES 1.B.1	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.	University of Hawai'i / Economic Development	33
62	ES 2.B.1	Develop a climate plan that focuses on key sectors and their interrelationships with respect to emissions reductions, to be updated every five years. Include intermediate year emissions reductions for all major sectors.	Mayor's Office	34
63	ES 2.B.2	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.	Public Works	34
64	ES 2.B.3	Conduct a greenhouse gas emissions inventory for the County.	Economic Development	34
65	PS 2.B.1	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.	Emergency Management	36
66	PS 2.B.2	Develop an inventory of Critical Infrastructure and Key Resources, according to the standards of the National Incident Management System (NIMS), which can be used for mitigation and disaster recovery efforts.	Emergency Management	36
67	PS 2.B.3	Work with the State Office of Conservation and Coastal Lands (OCCL) to update the <i>Coastal Erosion Mitigation Plan for Kaua'i</i> .	State DLNR	36
68	PS 2.B.4	Identify and index communities that have existing disaster resilience plans. Provide support to current and ongoing community hazard risk reduction, mitigation, and planning efforts.	Emergency Management	36
69	PS 2.B.5	Periodically review and update the <i>Multi-Hazard Mitigation and Resilience Plan</i> .	Emergency Management	36
70	PS 3.B.1	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.	Planning/ Emergency Management	37

#	Label	Action	Lead Agency	Objective #
71	PS 3.B.2	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.	Planning	37
72	PS 3.B.3	Encourage strategic retreat and relocation to safer areas based on the results of the assessments above.	Planning	37
73	PS 3.B.4	Use results of hazard, risk, and vulnerability assessments to inform adaptation strategies to be incorporated into Community Plans or other planning processes.	Planning	37
74	PS 3.B.5	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.	Planning	37
75	PS 3.B.6	Support implementation of the Hawai'i Climate Adaptation Initiative (Act 83) and development of the <i>Sea Level Rise and Vulnerability Adaptation Report for Hawai'i</i> and the <i>Statewide Climate Adaptation Plan</i> .	Planning	37
76	OH 1.B.1	Complete a study to establish ratios for different categories of housing for workforce (less than 140 percent of median income), elderly, and disabled.	Housing	38
77	OH 3.B.1	Include community health concerns in community planning.	Planning	40
78	OH 3.B.2	Implement and update the <i>Kaua'i Community Drug Response Plan</i> .	Mayor's Office	40
79	OH 3.B.3	Implement and update the <i>Kaua'i Plan on Aging</i> .	Elderly Affairs	40
80	OH 3.B.4	Implement and update the <i>Kaua'i Community Health Improvement Initiative</i> .	Planning	40
81	OH 4.B.1	Maintain, inventory, and provide information on legal public accessways to beaches and inland recreation areas. Conduct research on easement documents that have been executed or signed but not recorded.	Planning	41
82	OH 4.B.2	Create regional networks of public trails. Partner with private landowners for missing connections via managed access.	Planning	41
83	OH 4.B.3	Explore solutions for protecting access to recreational opportunities, including fishing, hunting, surfing, hiking, and other activities in community planning.	Planning	41
84	LU B.1	Use the community planning process to update and refine the Future Land Use Maps as needed.	Planning	42

3. PROJECTS AND PROGRAMS				
#	Label	Action	Lead Agency	Objective #
1	WA 1.C.1	Support projects that conserve and protect our remaining endemic forests and landscapes in the upper watershed.	Planning	1
2	WA 1.C.2	Develop collaborative projects that support goals shared by the Forest Reserve Management Plans, County's Open Space Commission, Nā Ala Hele Commission, the Kaua'i Watershed Alliance, and others.	Planning	1
3	WA 1.C.3	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, and non-governmental organizations), mauka to makai.	Mayor's Office	1
4	WA 1.C.4	Utilize best practice watershed management plans, such as the Hanalei Watershed Management Plan, as examples for other communities to employ.	Planning	1
5	WA 2.C.1	Utilize green infrastructure concepts and best management practices in County projects.	Public Works	2
6	WA 2.C.2	Mark stormwater drains as "going to the ocean."	Public Works	2
7	WA 2.C.3	Complete the update of the <i>Kaua'i County Water Use and Development Plan</i> .	Planning	2
8	WA 3.C.1	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.	Mayor's Office / County Council	3
9	WA 3.C.2	Acknowledge, support, and participate in government, university, and private efforts to better understand and predict climate change impacts on coastal areas.	Planning	3
10	WA 4.B.1	Increase wildlife and habitat protection knowledge and expertise within the County government.	Planning	4
11	WA 4.B.2	Develop a protocol that will help minimize the current feral cat population to lessen the impact of direct endangered species fatalities, as well as the spread of diseases, such as toxoplasmosis.	Public Works	4
12	WA 4.B.3	Adopt a comprehensive animal control ordinance to reduce or eliminate populations of feral, abandoned, and stray cats.	County Council	4
13	WA 4.B.4	Develop a list of native plant species suitable for landscaping.	Public Works	4

#	Label	Action	Lead Agency	Objective #
14	HO 1.C.1	Complete the Lima Ola affordable housing project.	Housing	5
15	HO 1.C.2	Seek and acquire land in or near town centers with access to transit, public water, and sewers for future affordable housing development.	Housing	5
16	HO 1.C.3	Create dedicated sources of funding and continue to use the Housing Revolving Fund to finance affordable housing projects.	Housing / County Council	5
17	HO 1.C.4	Develop and rehabilitate affordable housing low-interest loan programs and awards, such as the Rental Housing Revolving Fund through the Hawai'i Housing Financing and Development Corporation.	Housing	5
18	HO 1.C.5	Support the housing needs of low income households through the Federal Housing Assistance Payments Program (Section 8).	Housing	5
19	HO 1.C.6	Support a flexible planning process and robust monitoring system to allow timely changes in strategy and resource allocation for the housing program.	Housing	5
20	HO 1.C.7	Develop a quasi-public housing development or redevelopment agency to support affordable housing projects, particularly infill housing development projects within town centers.	Housing	5
21	HO 1.C.8	Pursue and establish a source of capital for the development and maintenance of affordable housing. Possible sources include: earmarking a percentage of real property taxes for affordable housing development; a conveyance tax surcharge on high-priced real estate transactions and earmarked for affordable housing development; an expanded Low Income Housing Tax Credit (LIHTC) that increases availability of the tax credit; and setting eligibility higher than the current 60 percent of median income.	Mayor's Office	5
22	HO 1.C.9	Continue and expand the County's efforts to provide and require homeownership classes, including financial literacy, for families potentially eligible for county affordable housing projects.	Housing	5

#	Label	Action	Lead Agency	Objective #
23	HO 1.C.10	Review best practices from elsewhere and test in pilot programs the methods that significantly reduce the cost of building a home, including infrastructure and system costs. The Mayor and the County Council should work with community to use Hawai'i Revised Statutes Section 46-15 to "designate areas of land for experimental and demonstration projects, the purposes of which are to research and develop ideas that would reduce the cost of housing in the State."	Housing	5
24	HO 2.C.1	Improve infrastructure and facility improvements in town centers to support a mixed use environment and increased density.	Planning	6
25	HO 2.C.2	Hold educational sessions for landowners in Special Planning Areas to inform them of new development standards and potential infill development opportunities.	Planning	6
26	HO 5.B.1	Partner with DHHL on infrastructure projects that will support development of both County and DHHL priority growth areas.	Water/Public Works	9
27	HO 5.B.2	Partner with DHHL to relocate the Wailua Wastewater Treatment Plant out of the tsunami zone and to support future residential development on DHHL land.	Public Works	9
28	HO 7.C.1	Regularly convene a Kaua'i Houseless Solutions Summit to develop collaborative short-term homeless solutions involving Kaua'i's faith-based community with support from health and human service organizations and County and State agencies.	Housing	11
29	HO 7.C.2	In addressing homelessness, adopt and implement the Housing First approach to reduce and ultimately eliminate homelessness.	Housing	11
30	LT 1.C.1	Establish transportation priorities using a performance-based evaluation process, which considers the following criteria: a. Safety; b. System preservation; c. Economic development/community access; d. Support of growth areas as designated in the General Plan and Community Plans; e. Congestion management; and f. Environmental and cultural impacts.	Planning/Public Works	13

#	Label	Action	Lead Agency	Objective #
31	LT 1.C.2	<p>Support completion of the priority projects in the <i>Kapa'a Transportation Solutions Report</i> to include the following:</p> <ul style="list-style-type: none"> a. Add one lane on the Kūhiō Highway from the southern end of the Kapa'a Bypass Road to Kuamo'o Road. b. Widen the northern segment of the Kapa'a Bypass Road to two-lane and two-way from the northern end of the Bypass to the roundabout at Olohena Road. c. Operational improvements, such as signalization and left turn restrictions on Kūhiō Highway. d. Extension of right turn lane on Haleilio Road at Kūhiō Highway. e. Congestion management on Kūhiō Highway, from Kuamo'o Road to Kapule Highway. 	Transportation	13
32	LT 1.C.3	Incorporate and integrate transit strategies in the <i>Kapa'a Transportation Solutions</i> framework.	Transportation	13
33	LT 1.C.4	Following a priority evaluation process, complete priority circulation and multimodal capacity projects identified in the General Plan Transportation Maps.	Planning/Public Works	13
34	LT 1.C.5	<p>Consider implementing Transportation Demand Management strategies with County of Kaua'i employees who work in Līhu'e as a pilot program that can be replicated by other employers.</p> <p>Strategies may include the following:</p> <ul style="list-style-type: none"> a. Staggered work hours; b. Bulk rate bus passes; and c. Incentives to encourage commuting by other than single-occupancy vehicles. 	Transportation	13
35	LT 2.B.1	Complete priority resurfacing, reconstruction, retrofit, and repair of existing roads and bridges based on available funding.	Public Works	14
36	LT 2.B.2	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.	Public Works	14
37	LT 2.B.3	Implement maintenance of roadside vegetation and roadway surfaces to increase safety.	Public Works	14
38	LT 3.C.1	Increase mainline service frequency to every 30 minutes, with 15 minute frequency at peak times on peak routes.	Transportation	15

39	LT 3.C.2	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.	Transportation	15
40	LT 3.C.3	Focus initial phases of service expansion in areas of highest ridership potential.	Transportation	15
41	LT 3.C.4	Improve bus route and schedule information.	Transportation	15
42	LT 3.C.5	Complete bus shelters and amenities at 50 priority bus stops.	Transportation	15
43	LT 3.C.6	Identify priorities for ADA-compliant pedestrian access to bus stops. Develop a construction schedule and funding plan for priority projects.	Transportation	15
44	LT 3.C.7	Provide adequate and efficient bus storage and maintenance facilities.	Transportation	15
45	LT 3.C.8	Identify locations for park and rides, especially in coordination with a North Shore shuttle.	Transportation	15
46	LT 3.C.9	Convert bus fleet to sustainable fuels.	Transportation	15
47	LT 3.C.11	Update maintenance facilities to continue maintenance of the bus fleet.	Transportation	15
48	LT 5.C.1	Complete planning, engineering, and construction for the West Side Path from Waimea to Kekaha and from Hanapēpē to Salt Pond.	Public Works	17
49	LT 5.C.2	Complete the Ke Ala Hele Makalae path from Anahola to Līhu'e.	Public Works	17
50	LT 5.C.3	Complete planning and first phase construction of a North Shore Path in areas supported by the community.	Public Works	17
51	LT 5.C.4	Complete at least one segment of a shared use path identified in the <i>South Kaua'i Community Plan and the Līhu'e Community Plan</i> .	Public Works	17
52	LT 5.C.5	Complete priority bikeway projects as identified in Community Plans.	Public Works	17
53	CI 2.C.1	Locate and relocate wastewater facilities in appropriate geographic areas, based on traditional, cultural, and biological natural filtration systems for the optimization and expansion of wastewater systems and system improvement, considering alternative reclamation technology or tertiary treatment.	Planning	20
54	CI 2.C.2	Provide adequate trunk sewer and collection main capacities to serve existing and future urban development.	Public Works	20

55	CI 2.C.3	Plan for and implement regional wastewater treatment solutions for South Kaua'i and Kilauea.	Public Works	20
56	CI 2.C.4	Monitor the disposition and potential effect of cesspool seepage and injection wells on the groundwater and nearshore water quality.	State DOH	20
57	CI 2.C.5	Support water reuse projects and increase the use of recycled water.	Public Works	20
58	CI 2.C.6	Explore opportunities to utilize the Clean Water State Revolving Fund Program for financing water quality infrastructure projects, including energy savings at plants, capacity increases including new pump stations, and drainage improvements.	Public Works/Parks & Recreation	20
59	CI 2.C.7	Improve wastewater infrastructure through grant and loan programs, such as the USDA Rural Development Program.	Water	20
60	CI 3.C.1	Site and construct a new landfill.	Public Works	21
61	CI 3.C.2	Establish an automated weekly, curbside collection system for residentially generated green waste and recyclables.	Public Works	21
62	CI 3.C.3	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.	Public Works	21
63	CI 3.C.4	Divert at least 70 percent of solid waste through increased source reduction, recycling, biodiversion, and landfill diversion methods.	Public Works	21
64	CI 3.C.5	Maximize effective life of existing and future landfill capacity.	Public Works	21
65	CI 3.C.6	Increase the convenience of recycling centers for users.	Public Works	21
66	CI 3.C.7	Provide commercial volume-based collection with enhanced recycling programs, including incentives for businesses to adopt zero-waste collection programs.	Public Works	21
67	SS 1.C.1	Implement economic revitalization projects in town centers, such as the Lihu'e Town Core TIGER grant project.	Public Works	23
68	SS 1.C.2	Construct centralized parking lots in towns with parking management issues.	Public Works	23
69	SS 1.C.3	Improve criteria for species selection and maintenance of street trees and landscaping.	Planning	23

70	SS 1.C.4	Identify opportunities for public art installation in projects, such as roundabouts, parks, and streetscape improvements.	Planning	23
71	SS 2.C.1	Support priority projects in the <i>Kaua'i Parks & Recreation Master Plan</i> .	Parks & Recreation	24
72	SS 2.C.2	Prioritize park improvements and provide safe routes to parks, especially in low-income neighborhoods with high concentrations of youth.	Parks & Recreation	24
73	SS 2.C.3	Implement a playground development and rehabilitation program to provide high quality play environments, especially in underserved communities.	Parks & Recreation	24
74	SS 2.C.4	Enhance parks by making them more conducive to physical activity through shared use paths, play equipment for more than one age group, skate parks, disc golf, tennis facilities, and other improvements.	Parks & Recreation	24
75	SS 2.C.5	Promote social interaction through facility improvements, such as pavilions, shade trees, and seating.	Parks & Recreation	24
76	SS 2.C.6	Expand indoor recreation spaces at selected parks.	Parks & Recreation	24
77	SS 2.C.7	Ensure safety and cleanliness at Kaua'i's beach parks. Use Crime Prevention Through Environmental Design (CPTED) when planning improvements.	Parks & Recreation	24
78	SS 2.C.8	Address illegal camping in parks.	Parks & Recreation	24
79	SS 2.C.9	Provide accessibility features at popular facilities such as beach parks.	Parks & Recreation	24
80	SS 2.C.10	Develop and install uniform signage, including interpretive signage that promotes a sense of place and educates the public at County beach parks regarding sensitive coastal and marine ecosystems and wildlife.	Parks & Recreation	24
81	SS 2.C.11	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.	Parks & Recreation	24
82	SS 3.B.1	Complete Ka Ala Hele Makalae from Anahola to Lihu'e.	Public Works	25
83	SS 3.B.2	Construct the Waimea-Kekaha Shared Use Path.	Public Works	25
84	SS 3.B.3	Construct the North Shore Share Use Path.	Public Works	25
85	SS 3.B.4	Construct a South Kaua'i Shared Use Path.	Public Works	25

#	Label	Action	Lead Agency	Objective #
86	EC 1.C.1	Improve route and destination signage to alleviate congestion associated with difficulties in finding desired locations.	Public Works	27
87	EC 1.C.2	Improve waste disposal, collection, and management at popular destinations and provide more recycling options.	Public Works	27
88	EC 1.C.3	Support projects to encourage visitor transportation mode shift from single occupancy vehicles to other modes.	Transportation/ Economic Development	27
89	EC 2.C.1	Provide economic development programs to promote and support agriculture.	Economic Development	28
90	EC 2.C.2	Reestablish an Agricultural Specialist position with the Office of Economic Development.	Economic Development	28
91	EC 2.C.3	Support the Sunshine Markets and other means of marketing Kaua'i agricultural and food products to residents, businesses, and visitors.	Economic Development	28
92	EC 2.C.4	Establish a minimum goal for designation of IAL. Improve the IAL program to effectively preserve high-quality agricultural land. Develop related County-level incentives, specifically to encourage food production to increase self-reliance.	Planning	28
93	EC 2.C.5	Increase incentives to lease land to small farmers through revisions to the agricultural property tax regime.	Finance	28
94	EC 2.C.6	Improve water infrastructure for irrigation in priority areas, such as IAL.	Water	28
95	EC 2.C.7	Develop community food hubs, commercial kitchens, and other initiatives that provide places for community members to grow and prepare their own food.	Planning	28
96	EC 2.C.8	Allow the use of SNAP benefits at farmers markets.	Economic Development	28
97	EC 2.C.9	Reduce water rates for landowners of agricultural lands in active production.	Water	28
98	EC 2.C.10	Establish a County-wide composting program.	Public Works	28
99	EC 3.C.1	Invest in shared facilities and resources that can be utilized by multiple opportunity clusters, such as creative industries and technical services.	Economic Development	29
100	EC 3.C.2	Provide infrastructure that increases the competitiveness of businesses on Kaua'i and allows them to thrive in all parts of the island.	Planning	29

#	Label	Action	Lead Agency	Objective #
101	EC 3.C.3	Utilize County facilities and funds to support shared workspaces, makerspaces, and equipment for small businesses to utilize.	Economic Development	29
102	EC 3.C.4	Support programs and infrastructure that enables employees to telecommute or work in satellite locations.	Economic Development	29
103	EC 3.C.5	Attract technology and energy businesses that complement Kaua'i's economic and sustainability goals.	Economic Development	29
104	EC 3.C.6	Build capacity for economic development in the target industry clusters identified by CEDS.	Economic Development	29
105	HR 1.C.1	Maintain the character of historic structures and bridges by implementing best management practices that adhere to the Secretary of the Interior's <i>Standards and Guidelines for Archeology and Historic Preservation</i> when rehabilitating and/or renovating historically significant buildings and structures.	Public Works	30
106	HR 1.C.2	Educate and encourage property owners to nominate structures and sites to the State and National Register of Historic Places.	Planning	30
107	HR 1.C.3	Provide a real property tax exemption for historic properties, including commercial properties.	Finance/County Council	30
108	HR 1.C.4	Explore utilizing the Open Space Fund for historic preservation purposes.	Finance	30
109	HR 2.C.1	Promote the diversity of stories and sites on Kaua'i, including those related to Native Hawaiian history and mythology, migrant worker history, and modern history.	Planning	31
110	HR 2.C.2	Establish historical trails, markers, and events that draw attention to the history of Kaua'i.	Parks and Recreation/ State Parks	31
111	HR 2.C.3	Through stewardship agreements, ensure proper management and interpretation of significant cultural resources and sites.	Parks and Recreation/ State Parks	31
112	HR 2.C.4	Achieve permanent preservation of highly significant cultural landscapes where multiple heritage and ecological values are located.	Planning	31
113	HR 3.C.1	Support Kaua'i Nui Kuapapa and other efforts to spread awareness of Kaua'i's original place names.	Mayor's Office	32
114	HR 3.C.2	Support implementation of the corridor management plan for the Holo Holo Kōloa Scenic Byway.	Public Works	32
115	ES 1.C.1	Install more solar energy systems on County facilities.	Economic Development	33

116	ES 1.C.2	Pursue green energy conservation, including but not limited to: groundskeeping and farming equipment/machinery, and ground transportation, by: a. Installing more, and regularly maintaining and repairing, electric vehicle charging stations. b. Introducing residential and commercial incentives to transition to electric groundskeeping and farming equipment/ machinery. c. County transition from fuel-powered to electric vehicles, machinery, and equipment, where feasible.	Economic Development	33
117	ES 1.C.3	Conduct regular reviews of County operations to identify ways to conserve energy, particularly during nighttime hours.	KUIC	33
118	ES 2.C.1	Establish capture and containment of methane at all landfills and County waste facilities.	Public Works	34
119	ES 2.C.2	Adopt a county-wide zero-waste strategy, including but not limited to: recycling pick-up at households and public locations and events, and building and maintaining a materials recovery facility with staff assigned to locate markets for recycled material.	Public Works	34
120	ES 2.C.3	Support the expansion of electric vehicle charging station infrastructure at County facilities.	Economic Development	34
121	PS 1.B.1	Upgrade bridges in key areas to ensure emergency vehicles can service all residents and visitors.	Public Works	35
122	PS 1.B.2	Construct new fire stations to accommodate anticipated growth in the firefighting force.	Fire	35
123	PS 1.B.3	Strive to attain a police force, firefighting force, and water safety officer force whose coverage meets or exceeds national standards.	Police/Fire	35
124	PS 1.B.4	Support continuous training for all emergency response officers.	Emergency Management	35
125	PS 1.B.5	Encrypt County radio communications systems.	Police/Fire	35
126	PS 2.C.1	Ensure that the County's GIS database, including all maps, data, and hazard information, is consistently available to all agencies. Facilitate data sharing thorough participation in the Hawai'i Geographic Information Coordination Council.	Planning	36

#	Label	Action	Lead Agency	Objective #
127	PS 2.C.2	Update, maintain, and enhance the use of the County's GIS database to improve decision-making and ensure consistency in planning, permitting, and construction regulations to reduce disaster risk.	Planning	36
128	PS 3.C.1	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.	State DLNR	37
129	OH 1.C.1	Develop funding sources to expand, improve, and maintain high-quality transportation, water, parks, broadband, and other infrastructure in underserved neighborhoods.	Planning	38
130	OH 1.C.2	Leverage infrastructure investments to bring jobs and housing opportunities to underserved communities.	Economic Development	38
131	OH 1.C.3	Increase access and affordability of public transit for youth and other transit-dependent populations.	Transportation	38
132	OH 1.C.4	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.	Planning	38
133	OH 1.C.5	Establish health and opportunity criteria for prioritizing County programs and policies.	Mayor's Office	38
134	OH 1.C.6	Establish community standards for wages and benefits, ensure fair scheduling, and support worker organizing.	Human Resources	38
135	OH 1.C.7	Ensure fair hiring, equal pay, and equitable promotion opportunities within the County workforce.	Human Resources	38
136	OH 1.C.8	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.	Human Resources	38
137	OH 1.C.9	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.	Economic Development	38
138	OH 1.C.10	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.	Finance	38
139	OH 2.B.1	Prioritize pedestrian, bicycle, and road safety improvements around and adjacent to schools.	Public Works/ Transportation	39

#	Label	Action	Lead Agency	Objective #
140	OH 2.B.2	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 Līhu'e and Kapa'a.	Parks and Recreation	39
141	OH 3.C.1	Prioritize sidewalk and bus stop improvements for accessibility near major health care facilities and group homes.	Transportation	40
142	OH 3.C.2	Improve the connectivity of essential services, including emergency response.	Emergency Mangement	40
143	OH 3.C.3	Ensure that low-income neighborhoods have high-quality parks, playgrounds, and green spaces.	Parks & Recreation	40
144	OH 3.C.4	Leverage Federal resources such as community development block grants and neighborhood-focused programs to create opportunity-rich neighborhoods.	Housing/Planning	40
145	OH 3.C.5	Adopt policies for smoke-free cars with keiki, beaches, parks, and condos.	County Council	40
146	OH 4.C.1	Acquire priority projects identified by the Open Space Commission.	Planning	41
147	OH 4.C.2	Pursue easements, acquisitions, and landowner agreements to expand trails, access, open space, protection of coastal lands, and wilderness areas.	Planning	41
148	OH 4.C.3	Establish a task force including landowners, land trust experts and attorneys, the Open Space Commission, and others, to study and recommend legal and land use measures to address and ameliorate liability on lands dedicated to managed public uses.	Mayor's Office	41

4. PARTNERSHIP NEEDS				
#	Label	Action	Lead Agency	Objective
1	WA 1.D.1	Support the management and protection of Kaua'i's forest resources and upper watershed areas in the Conservation District.	State DLNR	1
2	WA 1.D.2	Support the State's "World Conservation Congress Legacy Commitment: 30 by 30 Watershed Forests Target" to protect 30% (253,000 acres) of Hawai'i's highest priority watershed forests by 2030.	Planning	1
3	WA 1.D.3	Educate the public and visitors about native species protection, wildfire prevention, the spread of invasive species, and water quality protection.	State DLNR	1
4	WA 1.D.4	Increase opportunities for public access to forests in a way that is ecologically sustainable.	State DLNR	1
5	WA 1.D.5	Promote education and enforcement campaigns to curb littering and dumping in forest areas. Provide trash and recycling receptacles near popular trailheads and picnic areas.	State DLNR	1
6	WA 1.D.6	Support and educate about State and Federal landowner-assistance programs that support private forest-restoration efforts, such as the Conservation Reserve Enhancement Program and Forest Stewardship Program.	State DLNR	1
7	WA 2.D.1	Collaborate with community groups and stakeholders to better manage water resources in a cooperative fashion, avoiding adversarial fights that can divide the community.	State CWRM	2
8	WA 2.D.2	Encourage collaborative watershed and stream protection through the efforts of non-profit and volunteer environmental groups, such as the Hanalei Watershed Hui and Kaua'i Watershed Alliance.	State DLNR	2
9	WA 2.D.3	Develop instream flow standards for Kaua'i's perennial streams, with a focus on the existing project to develop standards for Southeast Kaua'i.	State CWRM	2
10	WA 2.D.4	Maintain stream flows by periodically removing excessive debris and vegetation from stream channels and beds that can impede drainage.	State DLNR	2
11	WA 2.D.5	Monitor the quality of coastal and inland waterbodies, using an operational groundwater-level monitoring network and a stream monitoring network, to ensure compliance with instream flow standards.	State DLNR / State DOH	2
12	WA 2.D.6	Support the establishment of community-based councils to assist with watershed management issues.	State CWRM	2

13	WA 2.D.7	Seek to prevent stream overflow in low-lying communities by maintaining natural drainageways and preventing the buildup of debris.	State DLNR	2
14	WA 2.D.8	Support the update of the <i>Hawai'i State Water Plan</i> components as they relate to Kaua'i, including the <i>Water Resource Protection Plan</i> , <i>Water Quality Plan</i> , <i>State Water Projects Plan</i> , and <i>Agricultural Water Use and Development Plan</i> .	State DLNR	2
15	WA 3.D.1	Manage local marine resources through community-based strategies, such as the Hā'ena Community-Based Subsistence Fishing Area.	State DLNR	3
16	WA 3.D.2	Address loss of beach areas due to sea level rise through a comprehensive beach management strategy, including local financing plans for beach and dune restoration.	Planning / Parks & Recreation	3
17	WA 3.D.3	Encourage citizen groups to take responsibility for water resource monitoring and protection, such as through the expansion of the Makai Watch Program.	State DLNR	3
18	WA 3.D.4	Adopt tax policies favorable to public shoreline access.	Finance	3
19	WA 3.D.5	Dissuade beach driving through enforcement and by educating drivers about the laws, safety, and environmental and cultural impacts of driving on beaches.	State DLNR / State Parks / Parks and Recreation	3
20	WA 3.D.6	Provide preferred tax status and other incentives to help community groups, non-governmental organizations, and government agencies restore native lowland forests.	Finance / County Council	3
21	WA 4.C.1	Provide enforcement and education regarding endangered species regulations.	State DLNR	4
22	WA 4.C.2	Provide interpretive signage within protected areas to educate people about native flora and fauna.	State DLNR	4
23	WA 4.C.3	Design and install signage informing motorists and pedestrians about the presence of threatened or endangered species in wildlife hazard zones and during yearly times of increased danger.	Public Works / State DOT	4
24	WA 4.C.4	Utilize predator-proof fencing and new technology to protect endangered species, such as seabirds, from lights and powerlines.	State DLNR	4
25	WA 4.C.5	Complete and implement native species Habitat Conservation Plans, such as the 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 economic development.	State DLNR	4

#	Label	Action	Lead Agency	Objective #
26	WA 4.C.6	Protect and restore forest bird corridors, seabird flyways, waterbird habitat, and areas of monk seal loafing.	State DLNR	4
27	WA 4.C.7	<p>Promote greater protection of Kaua'i's native flora and fauna biodiversity by reducing the threats of invasive species:</p> <p>a. Rapidly identify and address invasive species on County lands and coordinate with other public and private landowners to control sources of invasive species.</p> <p>b. 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.</p> <p>c. Collaborate with State and local partners, such as the Kaua'i Invasive Species Committee, on comprehensive biosecurity strategies at ports of entry to prevent invasive species, such as the mongoose, from spreading to Kaua'i.</p> <p>d. Support State, County, and non-profit organization efforts to control invasive species, 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.</p> <p>e. 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 is at stake and whom to contact for invasive species detection.</p>	State DLNR	4
28	WA 4.C.8	Acquire 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.	State DLNR	4
29	WA 4.C.9	Utilize conservation easements and partnerships with land trusts to acquire natural areas and promote mitigation banking.	State DLNR	4

30	WA 4.C.10	<p>Promote protection, restoration, and identification of critical habitats for our native, threatened, and endangered flora and fauna through the following actions:</p> <ul style="list-style-type: none"> a. Regularly evaluate and update a database listing environmental resource sites. b. Identify specific areas of habitat across the island that are in need of more heightened protection and/or restoration. c. Protect and restore existing wetlands that serve as critical habitats for existing species. d. Require developers and land-users to provide a protection buffer around existing habitats and wetlands. e. Encourage more reforestation and native flora outplantings across the island to help increase and enhance habitats. f. Preserve and establish connectivity between existing habitats and critical areas of interest. 	State DLNR	4
31	WA 4.C.11	Ensure adequate inspection and review of shipments that may contain invasive species.	State DOA	4
32	WA 4.C.12	<p>In schools, develop programs that improve education and awareness of:</p> <ul style="list-style-type: none"> a. The role of native species and the importance of biodiversity in Hawai'i. b. Projects that support the prevention and eradication of invasive species, and the protection and conservation of threatened and endangered species and habitats. 	State DOE	4
33	WA 4.C.13	Protect endangered species through programs, including but not limited to the Mānā Plain Wetland Restoration Project, Kīlauea Point National Wildlife Refuge, Kaua'i Endangered Seabird Recovery Project, and Kaua'i Forest Bird Recovery Project.	State DLNR	4
34	HO 1.D.1	Provide the highest level of housing and community development assistance through partnerships and non-profit organizations such as a Community Land Trust.	Housing	5
35	HO 2.D.1	Support programs that facilitate infill development and economic revitalization of town cores.	Planning	6
36	HO 2.D.2	Collaborate with the State to review and streamline infill development projects.	Housing	6
37	HO 3.B.1	Work with the State Office of Planning to explore large-scale State land use redistricting consistent with the General Plan and updated Community Plans.	Planning	7

#	Label	Action	Lead Agency	Objective #
38	HO 3.B.2	Enter into public/private partnerships to move forward development in new communities, especially in Lihū'e, South Kaua'i, and Kīlauea.	Mayor's Office / Planning	7
39	HO 3.B.3	Leverage market-rate development to support long-term affordable housing through inclusionary zoning and other tools.	Housing	7
40	HO 5.D.1	Respect and support the mission of DHHL to prioritize planning for their beneficiaries.	State DHHL	9
41	HO 6.C.1	Provide and anticipate increasing services to the elderly and their caregivers, including access to transit, nutrition services, fitness programs, and personal care.	Housing	10
42	HO 7.D.1	Support the development and expansion of shelters to increase temporary housing for the houseless and other at-risk populations.	Housing	11
43	HO 7.D.2	The Mayor and the County Housing Agency shall work with the State of Hawai'i Department of Human Services and nonprofit community to implement a robust Housing First program that provides 24/7 wraparound services and makes available transitional and permanent housing for all houseless persons who desire such housing.	Housing	11
44	HO 7.D.3	Identify partnership opportunities with landowners and community organizations to accommodate sheltering and transitional housing needs for houseless populations and people with disabilities.	Housing	11
45	HO 7.D.4	Develop a coordinated, integrated system of services that facilitates entry, offers wraparound services, and supports system exit when appropriate.	Housing	11
46	HO 7.D.5	Provide transportation to enable the houseless to access services (offer rides, bus vouchers, pay as you go card, or other options).	Transportation	11
47	HO 7.D.6	Support rehabilitation programs for the houseless.	Housing	11
48	HO 7.D.7	Prioritize resources for houseless families with children, youth, women, veterans, and people with disabilities.	Housing	11
49	LT 1.D.1	Improve the process of collaboration with HDOT to involve both the County and State in planning, scoping, design, and funding of transportation plans and projects.	Planning/Public Works	13

#	Label	Action	Lead Agency	Objective #
50	LT 1.D.2	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.	Planning/Public Works	13
51	LT 1.D.3	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.	Planning/Public Works	13
52	LT 1.D.4	Identify and actively seek non-County revenue sources (Federal, State, and private) to supplement County funding of the transportation network).	Planning/Public Works/ Transportation	13
53	LT 1.D.5	Enhance community partnerships for roadway maintenance (including landscaping) and education of all roadway users.	Public Works	13
54	LT 1.D.6	Continue to support the Built Environment Task Force of Get Fit Kaua‘i as a primary venue for public discussion of funding and implementing our land transportation system.	Transportation	13
55	LT 1.D.7	Regularly evaluate and update Council-determined land transportation user fees, such as bus fares, registration, and fuel and vehicle weight tax rates.	Transportation / County Council	13
56	LT 2.C.1	Improve systems, communications, and resources so that County projects funded by the State Transportation Improvement Program (STIP) are completed on schedule.	Transportation	14
57	LT 2.C.2	Secure resources and partnerships for maintenance of County roadways.	Mayor’s Office	14
58	LT 3.D.1	Expand the bulk bus pass program to generate transit revenue and encourage ridership.	Transportation	15
59	LT 3.D.2	Coordinate with HDOT to incorporate transit stops and pullouts on State Highway projects where needed.	Transportation	15
60	LT 3.D.3	Work with State and Federal agencies and local employers to establish a dedicated funding source for transit.	Transportation	15
61	LT 3.D.4	Partner with HDOT to design bus stops on rural highways.	Transportation	15
62	LT 3.D.5	Develop a transit-ready development pilot project on State lands pursuant to the <i>State Transit Oriented Development Strategic Plan</i> .	Transportation	15

#	Label	Action	Lead Agency	Objective #
63	LT 3.D.6	Provide housing adjacent to transit stops, with a special focus on transit hubs.	Planning	15
64	LT 4.B.1	Continue a robust Safe Routes to School Program with Engineering, Encouragement, Education, Enforcement, and Evaluation.	Public Works	16
65	LT 4.B.2	Complete priority pedestrian projects as identified in Community Plans and other studies.	Public Works	16
66	LT 4.B.3	Work with HDOT to identify and implement appropriate pedestrian crossings on State Highways.	Public Works	16
67	LT 4.B.4	Develop a Safe Routes to Parks program to identify priority pedestrian improvements within neighborhoods to parks.	Public Works	16
68	LT 5.D.1	Work with HDOT to have adequate and safe bicycle facilities on all State Highways, including bridges.	Public Works	17
69	LT 5.D.2	Leverage Federal funding to complete bicycle and pedestrian access improvements on Kīlauea Road to Kīlauea Point National Wildlife Refuge.	Public Works	17
70	LT 5.D.3	Prepare a bikeshare feasibility study and implement a bikeshare program.	Public Works	17
71	LT 5.D.4	Continue to support bicycle safety and education programs in collaboration with community partners.	Public Works	17
72	LT 6.B.1	Establish staff resources and funding for Countywide parking enforcement.	Police	18
73	LT 6.B.2	Work with State agencies to address the parking impact at beaches and other State-owned parks and scenic areas such as Kē'ē Beach.	Planning/ Economic Development	18
74	LT 6.B.3	Work with employers and resort areas to establish parking management strategies that incentivize mode shift.	Transportation	18
75	LT 6.B.4	Consider the establishment of parking districts in town centers.	Transportation	18
76	CI 1.C.1	Encourage water conservation at the individual, business, and municipal levels.	Water	19
77	CI 1.C.2	Collaborate with community groups on cooperative approaches to water management.	Water	19
78	CI 2.D.1	Reduce the number of cesspools through septic conversion or through connection to a new or existing regional wastewater system.	Water	20
79	CI 2.D.2	Institute best practices for diverting and reusing wastewater.	Water	20
80	CI 4.B.1	Support DOBOR with master planning and acquiring funding for expansion and maintenance of all small boat harbors.	Parks & Recreation	22

#	Label	Action	Lead Agency	Objective #
81	CI 4.B.2	Update the Līhu‘e Airport Master Plan and address capacity issues.	State DOT	22
82	CI 4.B.3	Collaborate with HDOT Airports Division in the implementation of the TAM.	State DOT	22
83	CI 4.B.4	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.	Planning	22
84	CI 4.B.5	Support HDOT - Harbors Division to implement and update the <i>Kaua‘i Commercial Harbors 2025 Master Plan</i> .	Planning	22
85	SS 1.D.1	Foster civic engagement in town centers through placemaking activities.	Planning	23
86	SS 1.D.2	Conduct community events that bring people together.	ALL	23
87	SS 1.D.3	Activate and revitalize public spaces with artwork, programs, and performances.	Economic Development	23
88	SS 1.D.4	Use underutilized public space as venues for creative expression.	Public Works	23
89	SS 2.D.1	Expand the County’s park stewardship agreement program.	Parks & Recreation	24
90	SS 2.D.2	Explore alternative sources of funding for priority park improvements, such as crowdfunding and community initiatives or collaborations.	Parks & Recreation	24
91	SS 2.D.3	Implement programs for beach and dune restoration, especially at beach parks experiencing erosion such as Po‘ipū Beach Park.	Parks & Recreation	24
92	SS 2.D.4	Encourage expansion of programs and legislation supporting septic systems in place of cesspools located within 200 feet of a shoreline, perennial stream, or wetland.	Public Works	24
93	SS 3.C.1	Explore expansion of the Nā Ala Hele trail system, especially in Planning Districts without formal trails.	Parks & Recreation	25
94	SS 4.A.1	Implement the Waimea Canyon, Kōke‘e, and Hā‘ena State Park Master Plans.	State Parks	26
95	SS 4.A.2	Complete master planning for Russian Fort, Polihale, and Wailua River State Parks.	State Parks	26
96	SS 4.A.3	Support adequate funding and staffing for capital improvements, including maintenance and enforcement for public parks, trails, and recreation areas.	State Parks	26
97	SS 4.A.4	Improve and coordinate infrastructure and transportation to reduce visitor impacts.	State Parks	26

#	Label	Action	Lead Agency	Objective #
98	EC 1.D.1	Provide visitors with a unique, positive, culturally-rich, and safe experience on Kaua'i. Encourage cultural sensitivity and cultural exchange.	Economic Development	27
99	EC 1.D.2	Develop alternative transportation options for visitors, including shuttles and car sharing, to reduce visitor impact on our roads, highways, and scenic places.	Transportation/ Economic Development	27
100	EC 1.D.3	Establish a County tax on rental cars to fund alternative transportation options for visitors.	Mayor's Office / County Council	27
101	EC 1.D.4	Lift the cap on existing Transient Accommodation Tax (TAT) funds distributed by the State to Counties, thus increasing the allocation to Kaua'i for services and infrastructure.	Mayor's Office/ County Council	27
102	EC 1.D.5	Develop and promote community programs that reinforce the unique sense of place of communities, such as those with historical and cultural significance.	Economic Development	27
103	EC 1.D.6	Encourage more use of Native Hawaiian place names and increase understanding of the meanings.	Planning	27
104	EC 1.D.7	Encourage tourism that provides eco-friendly and educational experiences, products, and services; leverages and supports local business and agriculture; relies less on cars; and embraces the rich historic and cultural foundation upon which Kaua'i's communities were built.	Economic Development	27
105	EC 1.D.8	Attract new employees, especially local residents, to the visitor industry to ensure an available, well-qualified workforce.	Economic Development	27
106	EC 1.D.9	Train the visitor workforce in understanding Kaua'i's local culture.	Economic Development	27
107	EC 1.D.10	Encourage the visitor industry, airlines, and the growing cruise line industry, to buy and promote Kaua'i products and support businesses on Kaua'i.	Economic Development	27
108	EC 1.D.11	Increase use of renewable fuel sources and support carbon offset programs and incentives for passengers traveling to and from Kaua'i.	Economic Development	27
109	EC 2.D.1	Expand commercial agriculture, attract new agricultural support- and value-added industries, and promote locally-grown commodity sales.	Economic Development	28
110	EC 2.D.2	Increase small-scale diversified farming, including, but not limited to, fruits and vegetables, building materials, medicinal plants, aquaculture, apiaries, flowers, and livestock.	Economic Development	28
111	EC 2.D.3	Expand aquaculture and livestock farming.	Economic Development	28

112	EC 2.D.4	Improve water access and infrastructure for agricultural purposes.	Water	28
113	EC 2.D.5	Support regional agricultural parks and centers.	Planning	28
114	EC 2.D.6	Support commercial agricultural producers with agricultural cooperative extension services, marketing, and business development. Market agriculture and food products within Kaua'i and to out-of-state markets.	Economic Development	28
115	EC 2.D.7	Prepare youth for future careers in diversified agriculture and aquaculture, with additional emphasis on business skills.	Economic Development	28
116	EC 2.D.8	Provide incentives and opportunities for agricultural housing, jobs, training, processing/transport of goods, and other needs. Expand direct financial and tax assistance to agricultural enterprises.	Economic Development	28
117	EC 2.D.9	Review legislation impacting agriculture on Kaua'i. Coordinate position statements with the Kaua'i Community College, the Farm Bureau, and other agricultural interest groups.	Economic Development	28
118	EC 2.D.10	Clarify the reclassification incentive provided through designation of Important Agricultural Lands (IAL).	Planning	28
119	EC 2.D.11	Support education and cooperation relating to protection of native birds and protecting the right to farm.	Planning	28
120	EC 3.D.1	Build the capacity of all businesses and increase the skills and readiness of Kaua'i's students and workforce.	Economic Development	29
121	EC 3.D.2	Invest in opportunity industries that can diversify Kaua'i's economy and provide living wages.	Economic Development	29
122	EC 3.D.3	Promote cross-sector linkages between Kaua'i's anchor and opportunity industries to grow the market for local products and services.	Economic Development	29
123	EC 3.D.4	Support initiatives and programs to revitalize town centers and increase demand for local-serving businesses.	Economic Development	29
124	EC 3.D.5	Provide business planning assistance, career planning, entrepreneurial training, incubation, and assistance with permitting, licensing, and regulatory issues.	Economic Development	29
125	EC 3.D.6	Expand offerings for mentorship, networking, and affordable workspaces.	Economic Development	29
126	EC 3.D.7	Support programs and initiatives that encourage manufacturing and support Kaua'i's small-scale independent manufacturers.	Economic Development	29

127	EC 3.D.8	Strengthen market linkages between the tourism industry and Kaua'i made products such as fashion, food, and music.	Economic Development	29
128	EC 3.D.9	Expand opportunities for innovation and tech-based businesses.	Economic Development	29
129	EC 3.D.10	Increase access to capital for small businesses and start-ups.	Economic Development	29
130	EC 3.D.11	Educate businesses on financial planning and funding sources for hazard preparedness and recovery, including insurance options for business interruption, natural disasters, and other unexpected occurrences.	Economic Development	29
131	HR 1.D.1	Support partnerships between the County of Kaua'i, KHPRC, the public, and various historical and archaeological organizations to preserve important historic buildings and structures that illuminate Kaua'i's history.	Planning	30
132	HR 1.D.2	Establish a low-interest revolving loan fund for rehabilitation of historic properties.	Planning/County Council	30
133	HR 1.D.3	Develop a County of Kaua'i standard operating procedure (SOP) for engaging with SHPD and the "Section 106" and/or "HRS 6E" processes. Implement the SOP to improve interagency coordination and communication between SHPD and the applicable County, State, and Federal agencies.	Planning	30
134	HR 2.D.1	Work with the State Historic Preservation Division and KHPRC to educate landowners about the historic preservation review process.	SHPD	31
135	HR 2.D.2	Promote County and community partnerships to preserve and raise awareness about traditional cultural places.	Economic Development	31
136	HR 2.D.3	Increase community awareness and stewardship of Kaua'i's historic and cultural resources.	Planning	31
137	HR 2.D.4	Enhance the Hawaiian sense of place by promoting understanding of moku and ahupua'a land divisions. Recognize and preserve the unique natural and cultural characteristics of each moku and ahupua'a.	Planning	31
138	HR 2.D.5	Seek to create community managed subsistence areas, also known as kīpuka, in every ahupua'a, in the tradition of kīpuka at Kē'e and Waipā.	State DLNR	31
139	HR 2.D.6	Commence a collaborative planning effort to explore options that would make it possible to preserve the irreplaceable natural and cultural resources of Māhā'ulepū and to sustain the special experiences of this place.	Planning	31

#	Label	Action	Lead Agency	Objective #
140	HR 2.D.7	During the "Section 106" and "HRS 6E" review processes, utilize cultural practitioners and community authorities on historic preservation to serve an advisory function and provide guidance on heritage and cultural issues.	Planning	31
141	HR 2.D.8	Implement tax breaks and support programs to prevent foreclosures on kuleana lands caused by failure to pay taxes.	Finance / County Council	31
142	HR 3.D.1	Support the Hawai'i Scenic Byways Program.	Public Works	32
143	HR 3.D.1	Support the Kaua'i Open Space Commission in identifying and acquiring priority open space areas.	Planning	32
144	ES 1.D.1	Support the Kaua'i Island Utility Cooperative (KIUC) and private initiatives for solar, biomass, hydro, and other clean energy production types.	KIUC	33
145	ES 1.D.2	Identify sites where new renewable energy facilities might be co-located with other land uses.	KIUC	33
146	ES 1.D.3	Continue regular monitoring of the amount of Kaua'i's energy production that is from fuel produced on the island.	KIUC	33
147	ES 1.D.4	Support State and Federal efforts to price carbon, such as a carbon tax or fee and dividend programs.	KIUC	33
148	ES 2.D.1	Share best practices regarding climate planning, including support for system-wide carbon fees or taxes at the state or national level.	Mayor's Office	34
149	ES 2.D.2	Meet emissions reductions goals through partnerships within the electricity, transportation, tourism, agriculture, waste, and small business sectors. Collaborate to establish short term, intermediate, and long term (2050) emissions reduction targets in ground transportation, electricity, air transportation/tourism, and consumption and materials management.	Mayor's Office	34
150	ES 2.D.3	Increase the availability of information about buildings that are energy-efficient (e.g., with solar hot water, green building designs and materials, and KIUC's household energy audit) around the island for both the residential and commercial sectors.	Mayor's Office	34
151	ES 2.D.4	Support the expansion of electric vehicle charging station infrastructure at strategically accessible locations along the main highway and other major thoroughfares.	Public Works	34
152	PS 1.C.1	Support the State and County's coordinated response system to wildfires.	Fire / State DLNR	35

#	Label	Action	Lead Agency	Objective #
153	PS 1.C.2	Implement and update the <i>Kaua'i Community Wildfire Protection Plan</i> .	Fire	35
154	PS 1.C.3	Strengthen hazard monitoring systems, such as stream flow and river gauges.	Emergency Management	35
155	PS 1.C.4	Participate in quarterly disaster response training and exercises.	Emergency Management	35
156	PS 2.D.1	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.	Emergency Management	36
157	PS 2.D.2	Encourage the integration of agricultural planning and coordination into disaster risk management to improve local food security, sustainability, and community resilience to hazards.	Emergency Management	36
158	PS 2.D.3	Plan for maintenance of critical facilities and infrastructure in the event of a hazard. Identify mitigation opportunities in utility service plans and implementation resources.	Public Works	36
159	PS 2.D.4	Improve public awareness materials distributed by the County through periodic updating with the best available data and maps.	Planning/ Emergency Management	36
160	PS 2.D.5	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.	Emergency Management	36
161	PS 2.D.6	Improve data gathering and accounting for risk and vulnerability assessments for wind, droughts, and wildfires.	Emergency Management	36
162	PS 2.D.7	In assessing telecommunications vulnerabilities and planning pre-disaster preparedness measures, consult with the Utility Disaster Preparedness and Response Group for advice and recommendations.	Emergency Management	36
163	PS 2.D.8	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 information. Include local communications strategies in resilience plans.	Emergency Management	36
164	PS 2.D.9	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.	Emergency Management	36

#	Label	Action	Lead Agency	Objective #
165	PS 2.D.10	Reduce “flash fuels” such as dry vegetation in high use areas and encourage vegetation clearing and clean-up programs.	State DLNR DOFAW	36
166	PS 2.D.11	Assess the need for specialized accommodations at shelter facilities to improve accessibility for special needs groups and pet owners.	Emergency Management	36
167	PS 2.D.12	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.	Emergency Management	36
168	PS 2.D.13	Support the development of a Common Operational Picture, which incorporates real-time asset status tracking for Emergency Management.	Emergency Management	36
169	PS 3.D.1	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 Pu’u Ka Pele and Nā Pali-Kona Forest Reserve locations.	State DLNR	37
170	PS 3.D.2	Ensure consistent public access to communications, warning systems, roads, and infrastructure in remote areas in the event of a hazard.	Emergency Management	37
171	PS 3.D.3	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.	Planning/Finance	37
172	OH 1.D.1	Ensure low-income students receive quality public education through strategies including comprehensive, place-based cradle-to-career initiatives.	State DOE	38
173	OH 1.D.2	Support reform to school disciplinary policies to keep youth in school and on track to graduate.	State DOE	38
174	OH 1.D.3	Partner with Kaua’i Community College for workforce development and training programs and apprenticeships.	Kaua’i Community College	38
175	OH 1.D.4	Foster racially and economically integrated neighborhoods.	Planning	38

#	Label	Action	Lead Agency	Objective #
176	OH 1.D.5	Require applicants to demonstrate knowledge of Hawaiian land and water laws as a prerequisite for licensing or professional registration with State boards and commissions that license professions relating to transfer of land ownership or land development. These include the Real Estate Commission, Board of Registration for Professional Engineers, Architects, Surveyors, and Landscape Architects.	State CWRM	38
177	OH 2.C.1	Treat schools as community resources for learning about specialized environmental, cultural, and historic subjects pertinent to Kaua'i.	State DOE	39
178	OH 2.C.2	Support community use of schools during non-school hours, such as recreational centers, meeting facilities, and emergency shelters.	State DOE	39
179	OH 2.C.3	Design school facilities to facilitate community use during non-school hours.	State DOE	39
180	OH 2.C.4	Retrofit existing facilities and design and construct new schools to serve as hurricane shelters.	State DOE	39
181	OH 2.C.5	Support the Keiki to Career Kaua'i programs and activities.	State DOE	39
182	OH 2.C.6	Continue and expand the Safe Routes to School program to encourage healthy, safe, and active living.	Public Works	39
183	OH 2.C.7	Support increased enrollment at Kaua'i Community College and the development of supportive housing, transportation, and facilities for students, staff, and faculty at the Puhi campus.	Kaua'i Community College	39
184	OH 2.C.8	Support both public and private educational programs that emphasize the Hawaiian language and Native Hawaiian culture, science, and practices.	State DOE	39
185	OH 3.D.1	Implement and update the <i>State Physical Activity and Nutrition Plan</i> .	State DOH	40
186	OH 3.D.2	Support pilot programs for community gardens and nutrition education programs.	Economic Development	40
187	OH 3.D.3	Provide anti-tobacco education in schools.	State DOE	40
188	OH 3.D.4	Increase access to programs that provide reproductive health and family planning education and services.	State DOH	40
189	OH 3.D.5	Support programs to increase participation in vaccination, disease screening, and early detection and management of chronic disease, such as the "Better Choices, Better Health" Program.	State DOH	40

190	OH 3.D.6	Support healthy food options in underserved communities by: a. Increasing the visibility of healthy food in stores, particularly those that accept Supplemental Nutritional Assistance Program (SNAP) and electronic benefit transfer (EBT) purchases. b. Allowing the use of Supplemental Nutrition Assistance Program (SNAP) benefits at farmers markets. c. Encouraging fast-food restaurants to offer healthy options and improve labeling. d. Increasing access to nutritional counseling. e. Taxing sugar-sweetened beverages. f. Eliminating the General Excise Tax on purchases of fresh fruits and vegetables.	State DOH	40
191	OH 3.D.7	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.	State DOH	40
192	OH 3.D.8	Anticipate and plan for the health impacts of climate change.	State DOH	40
193	OH 3.D.9	Increase access to mental health services and the availability of mental health providers.	State DOH	40
194	OH 3.D.10	Support the Malama I Na Pua health and wellness program for Native Hawaiian youth.	State DOH	40
195	OH 4.D.1	Inventory and improve hunting access to Forest Reserves and government trails.	State DLNR	41
196	OH 4.D.2	Seek funding for trail acquisition, development, and maintenance through the Nā Ala Hele Program and the Hawai'i Tourism Authority.	Parks & Recreation / State Parks	41
197	OH 4.D.3	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-'Ele'ele.	State DLNR	41
198	OH 4.D.4	Improve public access to landlocked State land that is managed by DOFAW. Increase recreational opportunities in these areas.	State DLNR	41
199	OH 4.D.5	Use surfing reserves to protect access to surf breaks, improve parking for surfers at key surf destinations, and provide appropriate signage.	State DLNR	41
200	OH 4.D.6	Increase opportunities for access to subsistence hunting, fishing, and gathering.	State DLNR	41
201	OH 4.D.7	Manage lateral shoreline access concerns, including vegetation that encroaches on the beach transit corridor.	State DLNR	41

#	Label	Action	Lead Agency	Objective #
202	OH 4.D.8	Develop more ATV, motorcycle, and mountain bicycling facilities so such activity is focused in areas not vulnerable to environmental damage.	State DLNR	41
203	OH 4.D.9	Develop a public shooting range.	State DLNR	41
204	OH 4.D.10	Promote access with kuleana through stewardship agreements, work days, jobs, and other means, to engage community members in caretaking.	State DLNR	41



APPENDIX H - ISSUES AND OPPORTUNITIES

KAUAI GENERAL PLAN UPDATE

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PURPOSE AND HOW TO USE THIS PAPER

This Issues and Opportunities Paper is prepared under Phase 2 of the contract to update the Kaua’i General Plan (GP). This issue paper was prepared by SSFM International, Inc. under the guidance of the County of Kaua’i Planning Department. This paper incorporates data and information contained in the following technical reports prepared for the GP update:

- PBR Hawai’i & Associates, Inc. May 2015. *Final Land Use Buildout Analysis*.
- *County of Kaua’i Important Agriculture Land Study*. December 2014.
- University of Hawaii Sea Grant College Program. June 2014. *Kaua’i Climate Change and Coastal Hazard Assessment*.
- County of Kaua’i Built Environment Task Force. February 2015. *Evaluation of Public Health Policies in the General Plan 2000*.
- SMS Research & Marketing Services, Inc. February 2014. *Kaua’i General Plan Update: Socioeconomic Analysis and Forecasts*.
- R.M. Towill, 2015. *General Plan Update Kaua’i Infrastructure Analysis*.
- *Kaua’i Community Health Needs Assessment*. July 2013.
- *Kaua’i Community Health Improvement Plan*. June 2014.
- *County of Kaua’i, Infrastructure & Public Facilities Needs Assessment Study (Draft)*. Group 70 International. August 2014.

Many other plans and documents were analyzed for the purpose of this paper. Such plans are listed in the “Resources” section within each topic area.

The Issues and Opportunities Paper addresses the key policy areas that fall within the scope of the Kaua’i General Plan. Its purpose is to identify overarching themes, issues, and opportunities under each policy topic to inform the planning and public engagement process.

The “Document Change Control Chart” below will track changes from draft to final versions. The issues and opportunities will be carried forth into the community engagement process for further vetting and discussion.

DOCUMENT CHANGE CONTROL CHART

Date	Version #	Author(s)	Revision Description
May 12, 2015	1.0	SSFM International	First Draft
July 14, 2015	2.0	SSFM International	Incorporated comments provided by the County Planning Department on June 22, 2015
August 27, 2015	3.0	SSFM International	Incorporated comments provided by the County Planning Department on August 17, 2015
September 10, 2015	FINAL	SSFM International	Incorporated final revisions provided by the County Planning Department on September 7, 2015

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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 borrowed, and adapted as necessary, from *Ulukau*, the Hawaiian Electronic Library, available online at <http://wehewehe.org/>.

Ahupua'a – 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 (*Pua'a*), or because a pig or other tribute was laid on the altar as tax to the Chief

Aloha – affection, compassion for others

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

Keiki – child/children

Kuleana – right, privilege, concern, responsibility

Kūpuna – elders

Lōkahi – collaboration or teamwork, unity, agreement

Mālama 'āina – to care for the land, stewardship of the land

Mālama pono – taking care

Pali - cliff

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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.

ADA	Americans with Disabilities Act
ADC	Agribusiness Development Corporation
AMI	Area Median Income
B&B's	Bed & Breakfast
CEDS	Comprehensive Economic Development Strategy
CAC	Community Advisory Committee
CHII	Community Health Improvement Initiative
CHNA	Community Health Needs Assessment
CIP	Capital Improvement Program
CNG	Compressed Natural Gas
CWRM	Commission on Water Resource Management
CZM	Coastal Zone Management
CZO	Comprehensive Zoning Ordinance
DBEDT	Department of Business, Economic Development, and Tourism
DHHL	Department of Hawaiian Home Lands
DLNR	Department of Land and Natural Resources
DOFAW	Division of Forestry and Wildlife
DOH	Department of Health
DOW	Department of Water
EA	Environmental Assessment
EIS	Environmental Impact Statement
ENSO	El Nino Southern Oscillation
EPA	Environmental Protection Agency
EPAC	Energy Plan Advisory Committee
GIS	Geographic Information System
GMO	Genetically Modified Organisms
GET	General Excise Tax
GP	General Plan
gpd	Gallons Per Day
gwh	Gigawatt Hour

THE	Housing, Transportation, Electricity
IAL	Important Agricultural Lands
ICAC	Interagency Climate Adaptation Committee
ICAP	Island Climate Adaptation Policy
IPCC	Intergovernmental Panel on Climate Change
ISWMP	Integrated Solid Waste Management Plan
ITS	Intelligent Transportation System
IWS	Individual Wastewater Systems
KEDB	Kaua'i Economic Development Board
KESRP	Kaua'i Endangered Seabird Recovery Project
KESP	Kaua'i Energy Sustainability Plan
KISC	Kaua'i Invasive Species Committee
KIUC	Kaua'i Island Utility Cooperative
KPAA	Kaua'i Planning and Action Alliance
KWA	Kaua'i Watershed Alliance
L RTP	Long Range Transportation Plan
MGD	Million Gallons per Day
MLTP	Kaua'i Multimodal Land Transportation Plan
NAICS	North American Industry Classification System
NOAA	National Oceanic and Atmospheric Administration
NETS	National Establishment Time Series
PDR	Purchase of Development Rights
PHEV	Plug-in Hybrid Electric Vehicle
SHPD	State Historic Preservation Division
SLR	Sea Level Rise
SMA	Special Management Area
SPA	Special Planning Areas
SVO	Straight Vegetable Oil
TDR	Transfer of Development Rights
USDA	United States Department of Agriculture
VDA	Visitor Destination Areas
VMT	Vehicle Miles Traveled

1.0 INTRODUCTION

This Issues and Opportunities Paper addresses the following policy areas outlined in the contract for the Update of the Kaua'i General Plan, which is the guiding policy document for the County that describes the vision and policy guidance for Kaua'i over the next 20 years. Each of these topics will be addressed in the public engagement process and in the resulting General Plan:

- 1) Kaua'i Kākou
- 2) Growth Management and Land Use
- 3) Economic Development
- 4) Agricultural Lands
- 5) Tourism
- 6) Open Space
- 7) Affordable and Workforce Housing
- 8) Climate Change and Natural Hazards
- 9) Infrastructure and Public Services
- 10) Multimodal Land Transportation
- 11) Energy
- 12) Public Health
- 13) Cultural and Heritage Resources
- 14) Natural Resource Management and Conservation
- 15) Parks and Recreation
- 16) Government Operations and Fiscal Management

For each policy area, this paper addresses the following questions:

- What are the primary issues?
- What opportunities exist for the General Plan to address these issues?
- How was this topic addressed in the 2000 General Plan?
- What are the implications for the General Plan planning process?
- What existing plans and policy documents address this topic?

"Issues" may take the form of gaps in existing policies or plans, conditions that pose a challenge to the General Plan vision, or matters that impact a variety of topics in complex ways.

"Opportunities" are the strengths that Kaua'i has to build upon, and that may help in resolving "Issues." These may include physical assets; community capital; or potential access to new technologies, design, or resources.

"How this Topic was Addressed in the 2000 General Plan" describes how the topic was included and organized; whether the topic requires updating or is mostly intact; whether there is sufficient data available to draft the Chapter, and if not, where or how that information will be generated.

"Implications for the Planning Process" are those areas that the General Plan may seek to address within its scope. It includes an identification of gaps in available information and needs in order to address the topic in the GP update.

"Resources" reference existing plans and policy documents consulted on each topic.

Key overarching themes that were identified based on the literature review of the technical papers are described in Chapter 18, and related back to the sixteen topics in the GP contract.

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2.0 KAUA'I KĀKOU: SUSTAINABILITY, STEWARDSHIP, AND RESILIENCE

2.1 DEFINING THE ISSUES

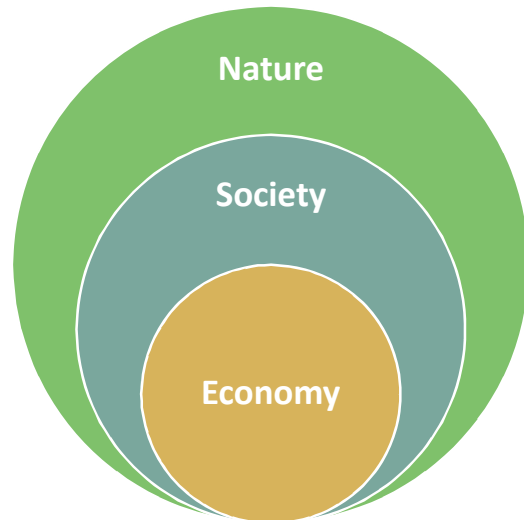
Sustainability, stewardship of the environment, food self-sufficiency, and community resilience were the most prominent themes that emerged from the early stages of the community engagement process for the General Plan Update. For the purposes of this discussion, sustainability, food self-sufficiency, stewardship, and resilience are corollaries that fit together under the unifying theme of the General Plan Update: Kaua'i Kākou. Each is discussed in turn below.



Sustainability

The most important issue that Kaua'i residents identified during the GP Update process can be encapsulated in the term "sustainability."

Some models of sustainability posit that environmental, economic, and social well-being represent three equal legs of a stool, and that without one, the others cannot stand on their own. It was found during the community meetings for the GP Update that this model does not adequately capture Kaua'i's vision of sustainability. Rather, what was repeatedly mentioned was that the natural environment forms the all-important basis for social and economic well-being, to create a nested relationship (see diagram at right). Care for and access to public trust resources (water, beaches, coastal areas, special places) is a particular theme. Residents recognize that a sustainable economy requires increased self-reliance for food and energy and other basic resources. This means each individual taking the responsibility to reduce their ecological footprint in their own lifestyle and land use. It means making water use sustainable, and environmental protection effective. It means dealing with wastewater and solid waste issues and seeking to reduce, recycle and reuse. Hawaiian concepts of *kuleana* (responsibility by all), *malama pono* (taking care), and *aloha* (affection, compassion for others) add further meaning to the "triple bottom line" of environmental, societal, and economic well-being.



The environment provides the foundation for sustainable community, which supports a sustainable economy.

Sustainable development requires a commitment to social equity. This includes the fair distribution of, and access to, resources. Economic well-being begins with the individuals in a society being able to thrive, that is, it depends on safe and secure housing, and access to education and healthcare as well as to employment. As discussed in the Housing, Transportation, and Economic Development sections that follow later in this document, Kaua'i faces significant challenges in realizing these goals. These include:

- Lack of sufficient funding for infrastructure, community development and affordable housing
- Population growth and development sprawl
- Communities designed for car travel
- Inadequate bike and pedestrian facilities to make these realistic alternatives to driving
- High cost of living, especially the combined costs of housing, transportation and electricity
- Inflated land values

Environmental Stewardship

Kaua'i's natural environment is broadly recognized as its greatest asset, the source of the scenic beauty, fertile land, and rainfall that has earned Kaua'i its moniker as "The Garden Island." The concepts of malama 'āina and ahupua'a management are invoked as principles of proper environmental stewardship for the island. Yet, natural and biological resources are challenged by various forces including climate change, private interests, pollution, runoff, habitat alteration, and introduced and invasive species, overuse, among many others. Many organizations on Kaua'i are working toward preserving and restoring native habitats, protecting and stewarding water resources, and maintaining coastal areas. There are opportunities for the GP Update to include recommendations that harness and build upon these efforts.

Food Self-Sufficiency

Food self-sufficiency is a priority that has been identified in State and County level plans and policies, including the *Kaua'i Comprehensive Economic Development Strategy* (2010), and the *Aloha+ Challenge* (2014). Hawaii used to be an exporter of agricultural products, but now over 85 - 90% of food consumed locally is imported (Hollier, 2015; Leunga and Lokeb, 2008).

Based on a current population of approximately 70,000 people, about 21,158 acres of land in food production would be required to attain food self-sufficiency (Draft *Important Agricultural Lands Study*, 2014). Thirty-nine percent or 53,547 acres of Kaua'i's lands meet all the criteria of Act 183 (SLH 2008; HRS §205-41) Important Agricultural Lands. Suitable agricultural lands include those that:

- are capable of producing sustained high yields when treated and managed according to accepted farming methods and technology;
- contribute to the State's economic base and produce agricultural commodities for export or local consumption; and
- are needed to promote the expansion of agricultural activities and income for the future, even if currently not in production.

Kaua'i has enough suitable agricultural lands to meet its needs. How to incentivize farmers to utilize these lands to serve the local market is a consideration in reaching the ambitious goals for local food production set forth in the *Aloha+ Challenge*.

Community Resilience

Kaua'i's residents value independence and self-sufficiency, and have many community-oriented interests that bind them together. Regardless of where they came from or when they arrived, they come to appreciate Kaua'i's history and understand how it remains relevant in the 21st century. Hurricanes 'Iwa and 'Iniki loom large in the collective consciousness of the island, and there is an acute awareness that island residents need to continue to band together to protect what is most important and plan for future changes, whether environmental, social, or economic. This collective spirit is reflected in the words of

‘Ōlelo No‘eau 327: E lauhoē mai na wa‘a, i ke kā, i ka hoe; i ka hoe, i ke kā; pae aku i ka ‘āina... Everybody paddle the canoes together; bail and paddle, paddle and bail, and the shore is reached.

This sentiment continues to reveal itself today in both individual and collective decisions that emanate from Kaua‘i and the overall commitment toward living in a more sustainable and self-sufficient manner. On Kaua‘i, people take personal responsibility for the well-being of themselves and their extended family. Neighbors work together to ensure the safety of the streets they live on and collectively watch over neighborhood children. Food is grown in backyards and the *ahupua‘a* continue to be harvested for the meat, fish, and fruits that keep families well-fed and healthy. Citizens join local organizations which, in turn, work with the public and private sectors to collectively make decisions for the well-being of all.

Kaua‘i’s independence and pride can be traced back in history ... During the reign of King Kamehameha, the islands of Kaua‘i and Ni‘ihau were the last Hawaiian Islands to join his Kingdom of Hawai‘i. Their ruler, Kaumuali‘i, resisted Kamehameha for years. King Kamehameha twice prepared a huge armada of ships and canoes to take the islands by force, and twice failed—once due to a storm, and once due to an epidemic.

And yet, the people of Kaua‘i have the humility to know, first, that they can’t do everything themselves – there are times when outside assistance is desirable and necessary – and second, that their lifestyles impact resources both on the island and elsewhere. Thus, reconciling self-sufficiency with necessary outside connections remains a regular topic of discussion.

Summary of Key Issues

To summarize, the major issues in Sustainability, Stewardship, and Resilience include:

- How independence, self-sufficiency, and personal responsibility guide collective well-being. This means each individual taking the responsibility to reduce their ecological footprint in their own lifestyle and land use, and contributing to ones’ community.
- How to foster a shared *kuleana* (responsibility by all) for planning for the future, preparing for future changes, and providing for the needs of people from *keiki* (children) to *kupuna* (elders)
- How Kaua‘i can implement a model of environmental protection using principles of *ahupua‘a* and *malama ‘āina* as the basis for sustainable society, and in turn, sustainable economy.
- Ensuring Kaua‘i’s communities, infrastructure, businesses, and towns are resilient in the face of natural, economic and social challenges are a vital component for sustainability.

2.2 OPPORTUNITIES

The 2050 Hawai'i Sustainability Plan defines sustainability for Hawai'i as follows: 1. Respects the culture, character, beauty and history of our state's island communities; 2. Strikes a balance between economic, social and community, and environmental priorities; and, 3. Meets the needs of the present without compromising the ability of future generations to meet their own needs.

While some suggest that there is competitive tension between the environment, economy and social equity, an alternative perspective has them supporting and strengthening one another. For example, improving the environment will strengthen the economy, and more equitable social programs will result a stronger workforce. Finding the balance between the factors, or so-called "triple bottom line", can be achieved through shared governance, or having the public sector, private sector and citizen-led groups and organizations actively participate in decisions that impact everybody. Luckily, this collaborative spirit already exists in Kaua'i and is a strength to build upon for the purposes of the GP.

Another recurring theme involves the island's existing limits to growth and what growth can be accommodated. Existing conditions that serve to limit growth on Kaua'i include: limited availability of Urban designated lands; high construction costs; State and County entitlement processes; as well as macroeconomic forces that affect supply and demand. The General Plan Update will need to identify growth policies, and the implementing actions that will encourage sustainable growth that is in keeping with given the values of environmental protection, social equity, infrastructure, and a sustainable economy.

In 2014, the Mayors of each County in Hawai'i and community partners signed the *Aloha+ Challenge* (subsequently endorsed by the State Legislature with resolution SCR69 SD1), which outlines six targets for sustainability to be achieved by 2030. These are listed in the text box at right. The legislation calls for expanded partnerships between government agencies, non-profit organizations, the private sector and local communities to promote coordinated and integrated action. Counties are required to review and report progress annually. The commitments and recommendations in the Aloha+ Challenge can provide a valuable framework for identifying priorities and tracking progress on sustainability, stewardship, and resilience.

To summarize, the major opportunities in Kaua'i Kākou include:

Aloha+ Challenge 2030 Targets for Sustainability

1. Clean Energy: 70 percent clean energy – 40 percent from renewables and 30 percent from efficiency.
2. Local Food: At least double local food production – 20 to 30 percent of food consumed is grown locally.
3. Natural Resource Management: Reverse the trend of natural resource loss mauka to makai by increasing freshwater security, watershed protection, community--based marine management, invasive species control and native species restoration.
4. Waste Reduction: Reduce the solid waste stream prior to disposal by 70 percent through source reduction, recycling, bioconversion, and landfill diversion methods.
5. Smart Sustainable Communities: Increase livability and resilience in the built environment through planning and implementation at state and county levels.
6. Green Workforce & Education: Increase local green jobs and education to implement these targets.

The Aloha+ Challenge: A Culture of Sustainability, July 7, 2014

- There are opportunities to work together with the many non-governmental organizations on Kaua'i that are dedicated to environmental protection, social equity, and economic well-being toward innovative and balanced solutions to community concerns.
- The *2050 Hawaii Sustainability Plan* and *Aloha+ Challenge* serve as a framework for policy and action.

2.3 HOW THE 2000 GENERAL PLAN TREATED KAUA'I KĀKOU

- The theme of Kaua'i's residents working together to achieve greater sustainability and stewardship are implicit, but not explicit, in the 2000 GP.
- Implementation of responsibilities were primarily with the public sector. The private sector's responsibility in implementation is not discussed in detail.
- The 2000 GP addresses environmental well-being and economic well-being in more detail than it does social equity. Discussion regarding trade-offs is limited.

2.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

Work on Kaua'i Kākou to be conducted by the GP Team includes:

- 1) Utilize the Aloha+ Challenge targets as a framework for how Kaua'i's environmental resources are sustained, for example: the upper watershed areas which face degradation, floral and faunal biodiversity, riparian and aquatic resources, as well as broader topics such as greenhouse gas emissions reduction and the Kaua'i Energy Sustainability Plan goals.
- 2) Address economic well-being, in part, by sustaining tourism while creating opportunities to diversify the economy.
- 3) The concept of food sustainability needs to be articulated.
- 4) The GP chapters on health and housing will identify the disadvantaged sections of the population, but more information will be needed to assess social equity.
- 5) Identify potential public-private partnerships, and opportunities for interdepartmental collaboration in implementing GP actions.

2.5 RESOURCES

Aloha+ Challenge Declaration. Signed by all County Mayors & Governor Neil Abercrombie on July 7, 2014.

Hollier, Dennis, *Hawai'i Business Magazine*. November 2014. *Can Hawai'i Feed Itself?* Retrieved on February, 2015. From <http://www.HawaiiBusiness.com/can-Hawaii-feed-itself/>

Leunga, PingSun and M. Lokeb. December 2008. *Economic Impacts of Increasing Hawai'i's Food Self-Sufficiency*. CTAHR Department of Molecular Biosciences and Bioengineering and Hawai'i Department of Agriculture.

State of Hawai'i. December 2014. *Aloha+ Challenge: Recommendations for Taking Action and Tracking Progress*.

State of Hawai'i Sustainable Task Force. January 2008. *Hawai'i 2050 Sustainability Plan: Charting a Course for Hawai'i's Sustainable Future*.

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3.0 GROWTH MANAGEMENT AND LAND USE

3.1 DEFINING THE ISSUES

The total population for the County of Kaua'i is projected to increase from 67,091 in 2013 to 88,013 in 2035, according to the SMS *Socioeconomic Analysis and Forecasts* (2014) study prepared for the GP Update. That represents a total growth of 31.2% between 2010 and 2035, or about 1.10% per year. Over the past 15 years, natural increase and migration have equally contributed to population growth. The great majority of population growth is planned to occur in the Lihu'e and Kōloa-Po'ipū-Kalāheo regions. Action to address this are reflected in the recently updated Community Plans for both Districts.



POPULATION PROJECTIONS BY DISTRICT (1990-2035)

PLANNING DISTRICT	1990	2000	2010	2020	2030	2035
County of Kaua'i	51,676	58,463	67,091	74,693	83,328	88,013
Lihu'e	11,169	12,507	14,683	18,017	21,595	23,456
Kōloa-Po'ipū -Kalāheo	9,600	10,545	11,696	13,623	15,737	16,855
Hanapēpē - 'Ele'ele	3,873	4,362	6,157	6,463	6,860	7,094
Waimea	4,698	5,660	5,561	5,901	6,323	6,566
Hanalei (North Shore)	5,913	6,605	8,002	8,286	8,686	8,933
Kawaihau - Kapa'a (East Kaua'i)	16,192	18,784	20,992	22,403	24,128	25,110

Source: SMS Research *Kaua'i General Plan Update: Socioeconomic Analysis and Forecasts* (February 2014)

Existing County General Plan land use designations consist of Open, Agriculture, Park, Residential, Resort, Urban Center, and special designations for Transportation and Military. The Open District comprises over 70% of the island, followed by nearly 20% in the Agricultural District. The proportion of the other designations are Residential (3%), Urban Center (1%), Resort (1%), Military (1%), Park (<1%), and Transportation (<1%).

Residential Lands

According to the 2015 *Land Use Buildout Analysis* Technical Report, if all existing and projected residential dwellings were located entirely on Residential-zoned parcels, the supply of existing Residential-zoned parcels cannot accommodate the entire 2035 projected population. This is conservative, as it does not factor in allowable residential uses on existing Agriculture and Open zoned parcels. An analysis of vacant residential-zoned parcels indicates that these lands come close to accommodating the 2035 population, with possible shortages in the Lihu'e and East Kaua'i Districts. The

analysis notes that deficiencies could be made up through higher density mixed use areas in existing town centers.

The *2015-2020 Consolidated Plan* prepared by the Kaua'i Housing Agency suggests that more residential lands that can support low-income housing could be needed. According to the *2014 Homeless Utilization Report*, Kaua'i's homeless populations are as follows: 39% or 248 individuals are newly homeless, and of the 248 total, 200 individuals are recently homeless. Also, Kaua'i has another 125 individuals who are chronically homeless. Perhaps even more disturbing is the data from the *2011 Hawai'i Housing Planning Study* (prepared by SMS for the Hawai'i Housing Finance and Development Corporation) that suggests that 36% of total households on Kaua'i are at-risk for homelessness as a result of factors that include high housing costs and low wages. Another key indicator of housing needs involves overcrowding. After the burden of cost, the most common housing problem is severely overcrowded conditions (>1.51 people per room), with overcrowding concentrated among extremely-low and very-low income households (based on annually updated HUD income categories). Overcrowding is a result of both housing supply and affordability. Increasing the supply of homes can result in lowering housing costs. At the same time, residents are concerned that new housing supply will simply increase housing options for the off-island market and not serve existing at-need households.

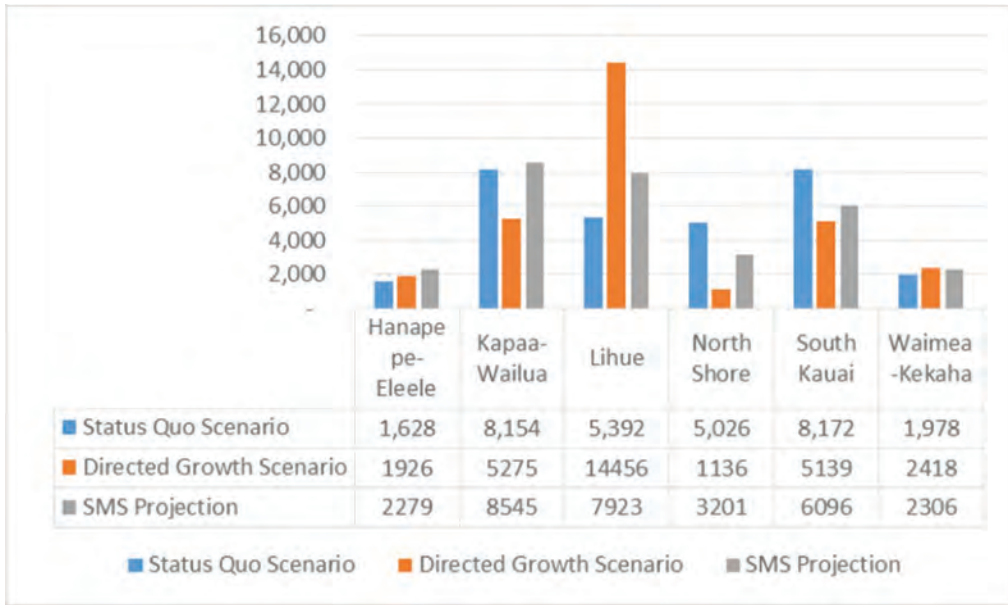
The *2015 Land Use Buildout Analysis* conducted for the GP planning process examined two growth scenarios for the island - directed growth and status quo - and then factored in the SMS socioeconomic projections, by Planning Districts.

The "status quo" scenario assumes that growth will follow where residents presently live or the most affordable lands. Based on building permit data over 15 years (1995-2009), most new residential activity occurred in the North Shore, East Kaua'i, and South Kaua'i. The activity seemed to sprawl into the Agriculture and Open districts (combined 39%) and lower density residential districts of R-4 and R-2 (combined 29%). Only 17% occurred in the R-6 medium density zoning district, and less than 1% in multi-family zoning districts (e.g., R-15, R-20). If future growth occurs in the vicinity of existing development and on the most affordable lands (lowest assessed values), the status quo scenario is that 25% of the 2035 dwelling units would be in the Agriculture zoning district, 8% in the Open district, and the balance of 67% in the Residential districts.

The "Directed Growth" scenario assumes that future growth beyond the existing population will be encouraged in the Urban Centers, Town Centers, Residential-zoned land, and Ag Homestead areas, thereby leaving undeveloped as much agriculture and open zoned lands as possible.

The districts most impacted by the differing growth policies would be Lihu'e and the North Shore. Lihu'e, as the major Urban Center, would receive a significant proportion of the future growth under the Directed Growth Scenario, that is: focusing development on existing urban district lands and redevelopment at higher densities in Town Centers. Conversely, the agriculture and open zoning districts of the North Shore would receive more growth than projected by the SMS Study under the Status Quo Scenario, and significantly less growth under the Directed Growth Scenario. Kapa'a-Wailua would receive growth comparable to the SMS projection under the Status Quo Scenario and less growth under the Directed Growth Scenario. The South Shore would receive growth comparable to the SMS projection under the Directed Growth Scenario and more growth under the Status Quo Scenario. The differences between the scenarios were negligible for both Hanapēpē-Ele'ele and Waimea-Kekaha. The County has already begun to implement the elements of the Directed Growth scenario to accomplish specific land use goals by way of the Lihu'e and South Kaua'i Community Plans.

ALTERNATE GROWTH SCENARIOS BY PLANNING DISTRICT



Source: Kaua'i County General Plan Technical Study: Land Use Buildout Analysis, PBR Hawaii'i 2015

Contributions to projected housing needs will also come from lands that are currently entitled or planned for development. According to County Planning Department records, projects that are partially or currently entitled for future development could add nearly 6,000 housing units to the Island during the GP Update's planning horizon. These projects are at various stages of approvals, land use re-designations, and construction, and are shown in the table on the following page.

ENTITLED RESIDENTIAL PROJECTS BY DISTRICT

District	Project Name	Housing Units
East Kaua'i	Piilani Mai He Kai (DHHL Anahola)	181
	Kulana	172
	Kapaa Highlands, Phase 2	769
	TOTAL	1,122
Eleele	A&B Eleele Residential	201
	Lima Ola (Affordable)	450
	TOTAL	651
Lihue	DHHL Wailua, Phase 1	188
	Kohea Loa - D.R. Horton	444
	Pikake Subdivision	146
	Grove Farm Wailani Residential	1,450
	Koamalu	220
	Waiola Phase I	47
	Waiola Phase II	56
	Waiola Phase II	93
TOTAL	2,644	
North Shore	Kolopua (Princeville Affordable)	44
	TOTAL	44
South Kaua'i	Brydeswood Ranch (A&B)	24
	Koloa Creekside	72
	Kukuiula Employee Housing	100
	Kukuiula	750
	The Village at Koloa Town	34
	Koloa Camp - Waihononu	50
	CIRI (CLDC) Subdivision	10
TOTAL	1,040	
Waimea	Kekaha lots	40
	Kikiaola Mauka	270
	Kikialoa - Field 14	56
TOTAL	366	
ISLAND TOTAL		5,867

Source: Kaua'i County Planning Department.

Industrial Lands

Most (81%) of the island’s industrial lands are within the Līhu‘e District. That district is also home to the planned Ahukini Māka’i development, which will provide an additional 146 acres (approximately 6.4 million square feet) of industrial lands near Līhu‘e airport. The new Industrial Designation included in the South Kaua’i Community Plan added another 160 acres around the Old Kōloa Mill site. While this amount of floor space theoretically meets the per capita need for industrial space as outlined in the 2015 *Land Use Buildout*, it is worth discussing whether the distribution of industrial lands island-wide and their associated zoning designations can accommodate the range of desired industrial uses.

Commercial Lands

According to the Comprehensive Zoning Ordinance (CZO), "Commercial Use' means the purchase, sale or other transaction involving the handling or disposition of any article, substance or commodity for profit or a livelihood, including in addition, public garages, office buildings, offices of doctors and other professionals, public stables, recreational and amusement enterprises conducted for profit, shops for the sale of personal services, places where commodities or services are sold or are offered for sale, either by direct handling of merchandise or by agreements to furnish them but not including dumps and junk yards." Commercial uses are permitted in the General and Neighborhood Commercial zoning districts (C-G, C-N). Between 2015 and 2035, PBR projects a need for another 2,716,416 square feet of commercial space. Currently planned and entitled projects will contribute, as shown in the table below.

ENTITLED COMMERCIAL PROJECTS BY DISTRICT

District	Project Name	Commercial Square Footage
Koloa	Koloa Rum Company Store and Café	9,000
	TOTAL	9,000
Lihue	Hokulei Village	222,000
	Grove Farm Wailani Commercial	1,132,299
	Weinberg Foundation Renovation	24,250
	Kukui Grove Commercial Buildout	96,000
	Weinberg Foundation/Ahukini	20,000
TOTAL	1,494,549	
North Shore	Kilauea Crossings	6,070
	Kilauea Town Center	46,800
	Hanalei Halelea Office	2,000
TOTAL	54,870	
South Kaua’i	Village at Koloa Town	96,000
	Kukuiula ABC Store	21,000
	Koloa Marketplace	76,000
	Old Glass Warehouse	7,200
TOTAL	200,200	
ISLAND TOTAL		1,758,619

Resort Lands

The *Land Use Buildout Analysis* used the Hawaii Tourism Authority's latest Visitor Plant Inventory (2012) to analyze resort lands. Kaua'i County had 8,289 transient accommodation units in 2012. This number includes 98 bed and breakfast units on 27 properties. All Planning Districts have Visitor Destination Areas (VDA), except Hanapēpē-'Ele'ele. The Planning District with the largest VDA in terms of acreage is South Kaua'i, followed by North Shore, Līhu'e, Kapa'a-Wailuā, and Waimea-Kekaha. In terms of units, South Kaua'i ranks first, however, the order changes with Kapa'a-Wailuā second, followed by North Shore, then Līhu'e. The needs of visitors are discussed in greater detail in the Tourism section of this Paper. The Buildout Analysis suggests that there is more than enough Resort zoned land to accommodate projected visitor growth.

Factoring in planned resort development, which amounts to approximately 4,500 new units (Source: *Hawai'i Tourism Authority, 2013 (Planned Additions and New Development, Table 10)*), all Planning Districts except the North Shore and Līhu'e are projected to have an excess visitor unit supply. Waimea-Kekaha will have the most excess followed by Kapa'a-Wailua and South Kaua'i. The North Shore has an extensive supply of potential single-family transient vacation rentals within the VDA that could respond to market demand.

The *Land Use Buildout Analysis* notes that "even if projections indicate a current excess of Resort-zoned land, there may be other reasons on a case by case basis to rezone to Resort such as aging of the resort infrastructure, vagaries in the occupancy rate, unpredictable global economy, or shifts in visitor accommodation preferences."

To summarize, the major issues in Growth Management and Land Use include:

- The population is expected to grow by 31.2% between 2010 and 2035.
- More land may be needed to accommodate residential growth; and generate affordable housing.
- Some growth will be needed in every district. The majority of the growth can be directed to existing town centers.
- Resort lands are adequate to meet demand.
- Commercial and Industrial lands may be adequate in acreage, but distribution may be an issue to explore further.

3.2 OPPORTUNITIES

Kaua'i currently uses a traditional model of zoning, i.e., one that segregates uses (commercial in one area, residential in another, etc.). Given the desire to preserve open spaces and agricultural lands and maintain the sense of place afforded by communities with distinct town centers or main streets, other models have been reviewed. The County has both historic and existing experience implementing other types of zoning— from the Kapa'a Special Planning Areas (SPAs) in the 1970s, to the Līhu'e Town Core Special Planning Areas, mixed use Special Planning Areas in the Līhu'e Community Plan, and form-based code areas established in the South Kaua'i Community Plan. An island-wide form-based zoning code that focuses on building size, type, and location, as opposed to uses, may serve Kaua'i's needs. "Smart Growth" concepts recognize that mixing uses (within buildings, and along streets) and dense living and working environments centered on functional and attractive public spaces makes for better living and attachment to place. A form-based code model is a natural extension of the existing mixed use districts and historic main street design. Form-based code, or a hybrid thereof, can include building and public space design components that preserve or improve community character and facilitates placemaking.

Other growth management tools include:

- Planned unit development – gives developers incentives to meet pre-determined land use goals (similar to CZO Article 10 Project Development);
- Floating zones – permits special uses within a jurisdiction in accordance with development criteria;
- Overlay zoning – identifies an area that requires more stringent regulations (e.g., an aquifer, watershed, or scenic viewshed) in addition to those regulations governing underlying uses (similar to SPAs and Special Treatment Districts in the CZO);
- Bonus or incentive zoning – provides developers with bonuses and incentives to achieve increased development density;
- Mixed-use zoning – allows a wide array of types of development aimed at reducing distances between homes and jobs;
- Land banking – allows the outright purchase of land by the public sector well in advance of any development to ensure appropriate land uses;
- Transfer or Purchase of Development Rights (TDR or PDR) – allows landowners to get development value on other areas if current holdings are placed in conservation or trust that limits development (TDR is also recommended in the 2014 Climate Change and Coastal Hazards Assessment); and
- Zoning or Building permit allocation – limits the number of zoning or building permits that are issued on an annual basis.

The *Līhu'e Community Plan* (2015) is the first Planning District on Kaua'i to recommend an Urban Edge Boundary to limit the extent of urban sprawl and delineate town edges. While the Plan drew such a boundary, it will require an ordinance to become implemented. The creation of an Urban Edge Boundary can help limit urban sprawl. It defines where higher density urban development should be contained. Areas outside the Urban Edge Boundary are intended for lower density land uses such as open space, conservation, and agriculture. Other planning areas may also benefit from an Urban Edge Boundary.

The GP planning process can set the groundwork for Community Plans to explore potential “areas of change”, similar to those contained in the South Kaua'i and Līhu'e Community Plans. That is, areas that lend themselves to development or redevelopment. Some areas may require rezoning or changes to the State Land Use Classification, others may not because they are already zoned correctly. Infill development offers efficiencies in terms of proximity to existing infrastructure and can require fewer regulatory changes to zoning and land use designations. Identifying place types that can provide opportunities for infill development may be one of the GP's top priorities.

The PBR's 2015 *Land Use Buildout Analysis* suggests that if the island were allowed to build out to the full capacity allowed by zoning, significant growth would occur on lands in the agriculture and open zoning districts. In contrast, if redevelopment of the Urban and Town Centers were encouraged at higher densities, as much as 40% of the dwelling units could be accommodated within those existing areas, with negligible residential use of the agriculture and open zoning districts. As such, the General Plan might consider recommending more mixed use zoning or higher densities in the “Urban Center” designation in the General Plan and in town centers. The growth projections are modest, and aimed at the need to provide adequate workforce housing and satisfy affordable housing needs.

To summarize, the major opportunities in Growth Management and Land Use include:

- The two recently completed Community Plans for Līhu'e and South Kaua'i set a direction for how the directed growth policy can inform future growth on Kaua'i.

- Place typing can identify locations where growth should occur and with what regulatory mechanisms.
- Mixed-use zoning can respond to the need for residential capacity and result in more vibrant and walkable town centers and be used to ensure new greenfield development creates walkable communities with a diversity of housing types.
- Form-based codes can help guide the form of growth.
- Growth recommendations in the GP should be based on the best available data and consider tools such as Smart Growth and policies to balance growth with infrastructure needs.

3.3 HOW THE 2000 GENERAL PLAN TREATED GROWTH MANAGEMENT AND LAND USE

- “Growth Management and Land Use” is discussed in multiple sections of the 2000 GP. Grouped under “Preserving Kaua’i’s Rural Character” are discussions pertaining to agricultural lands, open lands, urban lands, and scenic roadway corridors. Individual communities and opportunities for “Enhancing Towns and Commercial Areas” are discussed in Chapter 6 “Enhancing Towns and Communities and Providing for Growth”.
- The 2000 GP includes several policies that support more compact development; however, Implementing Action 4.6.3 pertaining to land supply exemplifies the pressure the County faces when trying to support both compact development and business entrepreneurs that have locations outside of town centers in mind, i.e., “The County shall strive for a balance between meeting community shopping needs with new commercial development and supporting local small businesses in older business areas.” In accordance with Smart Growth principles (see also the goal of “compactness” in the Multimodal Plan), infill development can maintain the community character, makes use of existing infrastructure, and has a smaller impact on natural resources and the environment.
- The majority of policies that promote compact centers surrounded by open and green spaces have not changed, but the terminology has changed to emphasize smart growth, walkability and multimodal transportation.
- Place-typing and form-based codes as a means to understand and preserve the best of Kaua’i’s urban form are not mentioned in the 2000 GP. The GP does recognize the need to preserve the historic fabric of existing communities.
- Changes to the Open District were implemented, as a result of recommendations within the GP, to help protect natural resources and open spaces.
- The 2000 GP recommended revitalizing central Līhu’e and Kaua’i’s small town commercial areas by upgrading sewer and water facilities, increasing the amount of public parking, and improving streets and sidewalks. Completed improvements in commercial core areas include the Kūhiō Highway Widening and Hardy Street (ongoing). Planning is underway for Rice Street; Po’ipū Road in Kōloa and Po’ipū; and, Hanapēpē Road. A parking audit was completed for the Līhu’e Town Core.
- The 2000 GP recommended a collaborative planning partnership among County agencies, community and business organizations, private entities, the State Highways Division to design highway and road improvements in a manner that supports commercial activity in Kaua’i’s business areas. This is an on-going task that is being implemented, for example with the County’s participation in the Kaua’i Federal-Aid Highways Plan and DOT Kapa’a Sub-Area Transportation Solutions Plan. Both these planning efforts had citizen advisory committees. Design charrettes and community design workshops were held for Poipu Road, Hanapēpē Road, Rice Street, and roadway sections for Kalaheo and Koloa as a part of the South Kaua’i Community Plan.

- As a means of protecting Town centers, the 2000 GP recommended placing a high priority on deterring strip development and urban sprawl when making strategic decisions on new commercial zoning or recommendations to the State Highways Division on highway development. The Planning Department is responding to this task with a “Street Frontage” bill.
- The 2000 GP includes a series of policies associated enhancing towns and commercial areas. They involve tasks associated with improving town centers through sidewalks or unpaved pedestrian pathways along main roads, passive parks, redevelopment of historic structures without new setbacks/parking requirements, parking in rear of store, town center parking lots, town design standards. Mechanisms for implementation include preparing amendments to the CZO providing design standards for commercial development in existing towns and new commercial projects. These efforts are underway.
- The 2000 GP recommended centralizing zoning regulations in a single chapter, and directed the Planning Department to prepare an ordinance transferring to Chapter 8, the CZO, those provisions of Chapter 10, the Special Development Plans, that modify or affect the CZO, and to make other revisions to Chapter 8 as may be necessary. Although not completed, the South Kaua'i Community Plan's Form Based Code (Appendix C) sets up the framework for insertion as a sub-chapter of Chapter 8.

3.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

Work on growth management and land use to be conducted by the GP Team includes:

- 1) A growth policy can explain how the County's projected growth is allocated to the planning districts and serve as the basis for managing growth through the remaining community plans (for Waimea-Kekaha, Hanapēpē-Eleele, East Kaua'i and North Shore). Growth scenarios and population projections should be based on the *Socioeconomic Analysis and Forecasts* Technical Report. Table 1-1: Alternative Projections of Resident and Visitor Population on Kaua'i 2020 from the 2000 GP can be updated with the discussion on pages 6 and 19-21 in the *Socioeconomic Analysis and Forecasts* Technical Report. Table 1-2: Kaua'i 2020 Projections in the 2000 GP can be updated with *Socioeconomic Analysis and Forecasts* Technical Report Tables 1 and 9.
- 2) Place typing will be integrated into the Kaua'i General Plan Update, including the Land Use Map. Charrettes will be held to:
 - Identify attitudes toward change & intensity of desired change
 - Assign Place Types with boundaries
 - Confirm and evolve district visions
 - Identify features of value and desired elements of form and character to preserve/encourage
 - Educate about the GP process, place typing and how it informs GP
- 3) The land use maps from South Kaua'i and Līhu'e will be incorporated into the General Plan largely as is. Any modifications will be geared toward achieving consistency in land use categories and terminology. Changes will not be substantive. The GP has an opportunity to set guidelines for the use of consistent Land Use categorizations and to outline a process that can be followed for the remaining four Community Plan areas.
- 4) To account for planned or entitled developments that may result in additional place types or affect existing places, the County will conduct outreach to major landowners and request meetings with them to identify development plans over the GP horizon. This information may be factored into the charrette materials and discussion where appropriate. The County will also encourage landowners to attend the place typing charrettes.

- 5) The *Land Use Buildout Analysis* does not explicitly address planned or entitled development, except for resort areas. Mapping out entitled development will occur during the GP process to further the understanding of future residential and commercial land use needs.
- 6) The GP Update will require an update to the General Plan Land Use Maps, with explanations of which lands have been re-designated and a rationale for the change.
- 7) Areas targeted for rezoning will need to be identified and discussed with the Planning Department, CAC and community. The 2015 *Land Use Buildout Analysis* Technical Report provides data with which to facilitate some of these discussions.

3.5 RESOURCES

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4.0 ECONOMIC DEVELOPMENT

4.1 DEFINING THE ISSUES

Anchor Industries

The visitor industry and agricultural industry are the primary economic drivers on Kaua'i. Approximately 30% of Kaua'i's jobs are in tourism and 4% are in agriculture. While this provides a backbone for the local economy, both agriculture and tourism can also be vulnerable to events and factors that cannot be controlled, including global economic forces, natural disasters, and climate change. Consequently, a main focus of economic development on Kaua'i is diversification of industries (see vision at right). This has been approached through identification of promising economic clusters, as described in the following section.

Promising Economic Clusters

In the Comprehensive Economic Development Strategy (CEDS) for Kaua'i (last updated in 2010), the Kaua'i Economic Development Board and County of Kaua'i Office of Economic Development identified six industry clusters in Kaua'i that are "good investments" and that could strengthen tourism industry niche markets. An "industry cluster" is a group of related industries that share infrastructure, labor, customers, suppliers, or services. These industries often face common opportunities, challenges and threats. The clusters include: health and wellness; food and agriculture; culture and arts; sports and recreation; science and technology; and, sustainable technologies and practices. The idea behind investing in specific cluster is to create jobs, replace imports, and generate more products for both export and local consumption.



Kaua'i Economic Development Vision from the Comprehensive Economic Development Strategy (2010)

Economy is strong, stable, and diversified.

While the visitor industry still provides the largest number of jobs, new businesses in agriculture, health and wellness, sustainable technologies & practices, art & culture, science & technology, and sports & recreation provide an increasing proportion of total jobs.

There are many job opportunities with higher wages.

Wages allow people to comfortably support their families.

Unemployment is low (3-5%).

Kaua'i Island Utility Cooperative (KIUC) is robust and is a leader in promoting energy conservation and renewable energy.

We have decreased energy consumption and increased our use of renewable energy.

We have preserved Kaua'i's special environment and culture.

Locally-grown products are consumed locally and exported. We have become more food self-sufficient.

The Office of Economic Development is implementing several projects from the CEDS aimed at supporting the industry clusters. More projects have been added over time, notably as part of the County's Holo Holo 2020 Initiative. The 2010 CEDS is currently being updated, and its projections for population growth and employment, as well as the priority projects list, will reflect current trends and thinking.

For the GP Update, Collaborative Economics, Inc. conducted a preliminary regional business using 2011 data from the National Establishment Time Series (NETS) database.¹ The analysis identified growth opportunity clusters. These include industries in which Kaua'i's economy has a specialization in relation to the rest of the state and those which are export-oriented. Opportunity clusters help bring resources into the region from elsewhere and focus efforts on the sectors could help drive growth in the region. Opportunity clusters identified for Kaua'i include:

- Sub-categories of tourism including: amusement and recreation, visitor transportation, personal care and beauty;
- Food processing and distribution;
- Defense;
- Fashion and retail;
- Makers (small-scale manufacturers);
- Technical services (film and digital media, music, architecture, engineering and design); and,
- Manufacturing (commercial printing, metal fabrication, soap and detergent, pottery, hardware).

Identifying opportunity clusters helps the County by informing investment and policy decisions.

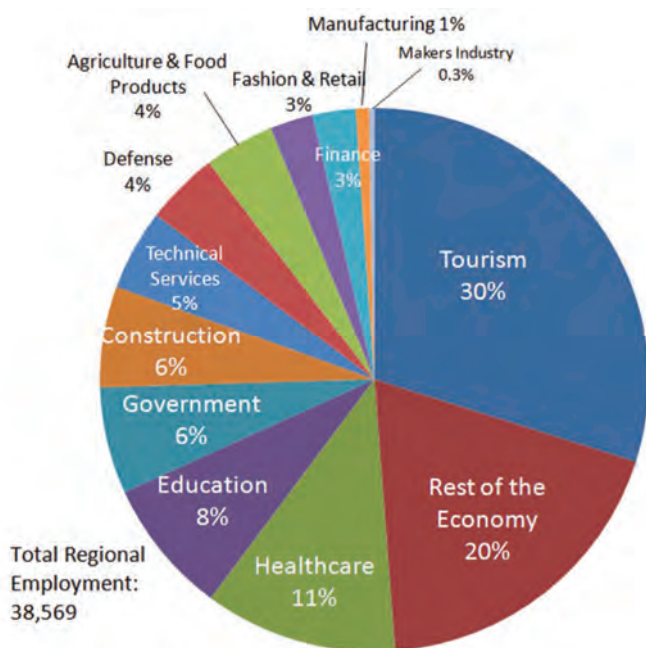
Employment Trends

The chart and table on the following page show 2011 employment in Kaua'i's anchor industries and opportunity cluster areas.

The tourism cluster employed 30%, or 11,026, of Kaua'i's workforce in 2011 (Collaborative Economics, 2015). The "rest of the economy" as labeled in the chart below employs 20% of the workforce and includes community services (e.g. supermarkets, stores, religious organizations, health care, education, family services, auto shops, etc.), other support services (which are unclassified companies), logistics, utilities, and non-tourism related real estate.

In 2011, the agriculture industry employed 1,613 people in Kaua'i (Collaborative Economics, 2015). Apart from jobs in distribution, the other sub-industries of agriculture – support, research and development, food processing, farming – declined between 2001 and 2011.

¹ National Establishment Time-Series (NETS) data provides information on every business establishment in the region. Clusters are identified based on NAICS code classifications and refined through further analysis and review of individual companies.



Sector	2011 Employment
Tourism	11,026
Rest of the Economy	7,308
Tourism	11,538
Healthcare	4,385
Education	3,102
Construction	2,335
Government	2,436
Technical Services	1,861
Defense	1,666
Agriculture & Food Products	1,592
Fashion & Retail	979
Finance	982
Manufacturing	298
Makers Industry	121

The Role of Cottage Industries

Employment statistics may not reflect the many informal jobs that Kaua'i's residents use to supplement their incomes and support their households. Cottage establishments can result from informal jobs or activities that become more formal over time. Cottage establishments are defined as business in residences with fewer than 3 employees. Thirteen percent of total Kaua'i's establishments were cottage industries in 2011, and those establishments filled 3% of Kaua'i's jobs.

Cottage industries and entrepreneurial development can be further nurtured on Kaua'i through resources such as incubators, co-working spaces with affordable workspace and shared equipment, mentoring and professional development, and policies that enable people to operate certain kinds of businesses out of their homes. The regulatory structure governing businesses and cottage industries warrants discussion during the GP planning process to ensure that innovation is nurtured and not inadvertently penalized.

The Kapa'a Business Association reports that the one of the biggest issues facing businesses on Kaua'i is the lack of affordable housing for their employees. Strong, vibrant town centers that include affordable housing above stores on bus routes or in walkable / bike-able distances from jobs can help keep costs down and help small businesses grow.

To summarize, the major Economic Development issues include:

- Kaua'i remains heavily dependent on tourism as the main anchor industry.
- Industry and anchor clusters reveal sectors that can be nurtured. Anchor industries are growing.
- Kaua'i has areas of specialization, or industries that are highly concentrated (e.g. certain sub-categories of Tourism, Defense and Agriculture & Food Products).
- Creative Industries are small but emerging (e.g. Makers, Fashion & Retail, Film/Music/Media, Architecture/Design) and can help to create a diversified economy.

4.2 OPPORTUNITIES

The Kaua'i Economic Development Board (KEDB) and County of Kaua'i Office of Economic Development suggest that Kaua'i's economy can be guided by the following principles:

- Economic Diversification: strengthen selected industry clusters to minimize dependence on a single industry
- Economic Self-Sufficiency: minimize imports and promote import substitution
- Economic Opportunity for all: offer an appropriate K-20 education and adequate training opportunities to give workers choices and to promote living wages

These principles led to the development of five goals:

1. To assist new and existing businesses create new jobs.
2. To facilitate career planning for students.
3. To expand and train the workforce to meet the needs of employers.
4. To promote affordable housing.
5. To improve the skill level and work readiness of students to achieve career and college success.

There are several organizations and entities on Kaua'i that provide access to business planning assistance, career planning, entrepreneurial training, incubation, and assistance with permitting, licensing, and regulatory issues. Some facilitate access to start-up, micro-enterprise, and expansion capital funds.

The County Office of Economic Development is spearheading a Kaua'i Creative Technology Center in Lihu'e that will provide provide 30,000 square feet of multipurpose creative technology facilities. The mission is shown at right. Once completed, the Center is intended to operate as a community hub for arts, innovation, and creative technology.

Kaua'i Creative Technology Center Mission

The mission of the Kaua'i Creative Technology Center is to promote creativity and innovation through the use of technology.

It will manage a state-of-the-art facility that offers industry-grade equipment and technology-based programs that cultivate local talent and catalyze economic growth on Kaua'i.

The Center will serve students from elementary to middle and high school as well as the community college. It will be a venue for the performing arts community as well as for the professional media and film industry. It will provide education, job training, and business development opportunities.

Education is a critical component of supporting future economic opportunity. KEDB's Aloha 'Ike program partners with the Department of Education to enhance opportunities for Kaua'i's keiki in grades K-12, proving grants to projects that supplement academic programs in public, private, and charter school across the island. Its principles are shown in the text box.

Convergences between economic growth sectors can guide investment to facilitate overall growth. Investing in growth sectors with converging needs and interests, or "clusters of opportunity" may help diversify Kaua'i's economy. "Opportunity Industries" for Kaua'i as described in the preceding section include sub-categories of tourism, food processing and distribution, technical services, defense, manufacturing, fashion & retail, and makers. There are examples of cluster industry coalitions that have organized to identify and address common areas of need to support collective growth. This has occurred on the North Shore of O'ahu, as described in *Developing A Shared Agenda: For the North Shore of Oahu's Economic Vitality and Community Well-Being Draft Action Plan* (2013).

Kaua'i Economic Development Board Aloha 'Ike Program Principles

- Encourages teachers and administrators to expand the education enrichment opportunities for their students;
- Facilitates the application of academic concepts through innovative project-based learning; and
- Develops partnerships with participating companies, institutions of higher learning, and other members of the community.

All industries can benefit from improved infrastructure and actions that protect infrastructure from the repercussions of climate change and sea-level rise. All businesses are threatened by roads that regularly flood or storms that shut down the harbor. Transportation networks and facilities for agricultural products and workers are critical from an economic perspective. Storage, processing and transfer sites in proximity to fields, airports and harbors could be improved to support not only greater export opportunities, but also local food independence and self-sufficiency.

To summarize, the major Economic Development opportunities include:

- The Economic Development Board has identified the principles of diversification, self-sufficiency, and economic opportunity to help guide new investment.
- Clusters of economic opportunity can help target investment and focus initiatives to support small businesses. There are models from other areas that may be emulated.
- Several organizations already provide some of the business assistance that Kaua'i needs and can build upon the findings of the soon-to-be-updated CEDS and the *Primary Regional Business Analysis* by Collaborative Economics.

4.3 HOW THE 2000 GENERAL PLAN TREATED ECONOMIC DEVELOPMENT

- Economic Development is addressed in "Supporting Businesses and Jobs for Kaua'i Residents", "High Technology", and "Land Supply for Commercial and Industrial Uses" in the 2000 GP.
- The text and data in the 2000 GP is limited on the topic of economic development. Many policies remain sound, but data is required to support recommendations.
- The 2000 GP recommends requiring that resorts and businesses seeking zoning and permits use the local labor force as a mechanism for creating jobs for the local workforce. This task is being implemented by the Planning Department, and has become a common condition in zoning and permit approvals.

4.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

Work on economic development to be conducted by the GP Team includes:

- 1) Incorporate data from 2015 *Land Use Buildout* Technical Report in regards to land zoned or needed for commercial and industrial activities based on population projections.
- 2) Incorporate data about the workforce and clusters of opportunity generated by Collaborative Economics.
- 3) Update real estate-specific data will available information.
- 4) Review the updated CEDS for Kaua'i and incorporate relevant policy materials into the GP Update.
- 5) Update Table 4-5: Kaua'i Shopping Centers in the 2000 GP using research.
- 6) Use Table 15 in the *Land Use Buildout* Technical Report to address Commercial Floor Area by Planning District.
- 7) Update Table 4-6: Capacity of Vacant Commercial Zoned Lands in the 2000 GP using data from Table 16 in the *Land Use Buildout* Technical Report.
- 8) Update Table 4-7: Capacity of Vacant Industrial Zoned Lands in the 2000 GP with data from Table 17 in the *Land Use Buildout* Technical Report.
- 9) Consider how policies promoted in the updated CEDS relate to land use and infrastructure policies.
- 10) Include available data that addresses the impact of small businesses on the economy and the challenges they face.
- 11) Document the efforts of the Chamber of Commerce and other business associations, and their understanding of the business climate up to 2035.
- 12) Other thoughts for discussion may include economic incubators in each district, satellite educations/tech centers and resource guides to improve community-business connections.

4.5 RESOURCES

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5.0 AGRICULTURAL LANDS

5.1 DEFINING THE ISSUES

Quantity and Quality of Agricultural Lands

A Draft *Important Agriculture Land Study* was prepared for the GP Update in 2014. According to the study, 144,000 acres of Kaua'i's lands are located in the State Land Use Agricultural District. Only 80,000 acres, or 41%, are located in the 2000 General Plan Agricultural District. Approximately 14% of the land in the North Shore Planning District is designated by the 2000 GP for agricultural purposes; 19% of Kapa'a-Wailuā is designated for agricultural purposes; 24% of Līhu'e; 19% of South Kaua'i; 8% of Hanapēpē-'Ele'ele; and, approximately 16% of Waimea-Kekaha is designated for agricultural purposes.



Community feedback received to date reflects a strong desire for a diversity of farm sizes and food crops to serve the local market, with limited exports. The economics of farming at a small scale for local consumption versus a larger scale for export needs to be explored in light of this priority. There are also concerns about the compatibility of certain agricultural uses with sensitive environments (such as the proposed dairy near Māhā'ulepū) and in proximity to schools and residential areas (evidenced by the concerns over pesticide use by seed corn companies in Waimea). An advantage to encouraging diversified agriculture that is compatible with surrounding uses is the continued existence of plantation infrastructure. It will need to be preserved, and in many cases, improved or upgraded to perform to today's standards. A larger concern is whether or not there is adequate water available to support the desired diversity of agricultural uses.

Water for Agricultural Purposes

Although Hawaii's sugar industry started during the 1860s, most of the plantation irrigation systems were developed around the turn of the twentieth century. Large quantities of surface water from perennial streams were diverted by intake structures into miles-long transmission ditches and tunnels, moving water from the windward side of the islands to the leeward plains, where abundant dry, fertile lands required irrigation to grow sugar cane. Generally, intake structures include a dam across the streambed, an inlet channel, control gates, trash screen, and a connecting tunnel or ditch into the main transmission structure—usually another tunnel or ditch. The physical characteristics of these irrigation systems were designed and constructed prior to the enactment of environmental and zoning statutes. It is now nearly impossible to plan, design, and construct similar irrigation systems without enormous effort and cost. The collapse of the sugar industry resulted in the abandonment of many plantation irrigation systems. With the lack of maintenance, ditches have been overgrown by vegetation, intake structures have been damaged or clogged, and siphons and flumes have deteriorated.

Beyond adequate infrastructure to channel it, the availability of water has emerged as an uncertainty that has hampered agricultural projects. An example is the Kīlauea Agricultural Park, which completed its environmental compliance in 2009 only to discover that there was no available water. The solution

nearly tripled the cost of the project ("*Kīlauea Farming Project Gets Legs*", The Garden Island, August 7, 2015).

The County's Water Department is currently working with the Department of Agriculture and Agribusiness Development to develop agricultural water use projections. Their technical approach includes the selection of crops that can be irrigated with rainfall, whenever possible, rehabilitating and repairing existing and former irrigation systems, and maximizing use of lower quality water (reuse water, surface water, brackish water) whenever possible.

Crops for Fuel, Fiber, and Research

There is a movement to explore local production of crops for fuel and fiber, and to take a hard look at the potential impacts of cultivating genetically modified organisms (GMO), and genetically engineered (GE) crops.

Kaua'i's Chamber of Commerce estimated that the seed crop companies have a \$220 million annual economic impact on Kaua'i (LaVentura, 2013). The Chamber of Commerce and College of Tropical Agriculture and Human Resources, University of Hawaii at Mānoa, credits the seed corn and coffee companies with diversifying the agriculture industry and keeping land in agriculture since the decline of sugar and pineapple. Kaua'i's Office of Economic Development estimates that the seed companies have contributed more than \$1 million to maintain the irrigation systems on the west side.

Because GMO and GE practices can impact the soils of neighboring lands and air quality, the County Council has considered new regulatory requirements pertaining to the availability of documentation of such practices and notifications. Initial legislative acts were rejected by the Hawai'i Courts as lacking jurisdiction. Land use regulations involving GMOs may not violate the U.S. Constitution's Fifth Amendment "takings clause"; i.e., private property may not be taken for public uses without a public purpose and without just compensation. In other words, regulations may not be so stringent that a property owner is denied their entire ability to use their property.

Designation of Important Agricultural Lands

The draft *Important Agricultural Lands Study* includes five major recommendations. Recommendations #1 to #3 focus on establishing a County process for incentivizing and encouraging IAL designations. Recommendation #4 directs the County and encourages the State to use maps and tools developed during this study process when reviewing petitions for designation and when considering candidate lands for County or State-led petitions. Recommendation #5 acknowledges opportunities for reviewing, expanding, and integrating recommendations made in this study in the forthcoming General Plan update. Landowners of important agricultural lands and farmers are keenly interested in maintaining their property rights and ability to maximize the use of their land now and in the future. Designating land as Important Agricultural Lands in perpetuity provides tax relief and certain protections, but it may limit their ability to develop their property. So far, 16,263 acres of agricultural land have been designated by private landowners on Kaua'i. County-initiated IAL designations have been considered, but not submitted to the State Land Use Commission.

Agricultural Infrastructure

Agricultural production is supported by essential infrastructure for irrigation, storage, and distribution. This includes roads and transportation networks that are shared with non-commercial users. Maintenance of infrastructure in safe and working condition is crucial to support food production goals and manage the costs of producing and transporting crops on Kaua'i. The County's 2012 *Multimodal Land Transportation Plan* provides recommendations to support agricultural transportation needs, as listed in the text box at right.

The County's 2012 "Multimodal Land Transportation Plan" recommends that the County focus its agricultural transportation efforts in the following areas:

- *Reducing the cost of transporting and processing locally-grown farm products;*
- *Protecting against disruption of on-island transportation networks during storms and other emergencies;*
- *Improving access by residents and visitors to healthy foods, including locally-grown and raised fruits, vegetables, grass-fed beef, sea foods, and dairy products; and*
- *Ensuring agriculture workers have affordable and reliable access to their jobs.*

People who participated in the meetings associated with the preparation of the 2014 *Important Agriculture Land Study* were particularly concerned about the maintenance of reservoirs and new dam safety rules. The Ka Loko dam disaster and deaths caused by the dam breach remains top of mind. Participants also cited the need for a comprehensive update to the water inventory and management plan and raised concerns about the high cost of producing and transporting food on island.

To summarize, the major issues in Agriculture and Food Sustainability include:

- Agricultural land is well-distributed among all of the island's Planning Districts.
- The IAL concluded that Kaua'i has sufficient land with which to attain food self-sufficiency. Economic and other incentives are needed to encourage actualization of this goal.
- Crops for fuel and fiber can be explored to add to the diversity of products for Kaua'i.
- While many are wary of GMO's possible impact on the environment, others recognize that seed and coffee growers contribute to crop diversification and maintain agricultural land uses.
- Infrastructure needs include dam and reservoir maintenance, water for irrigation purposes, and efficient transportation networks for producing and transporting food.

5.2 OPPORTUNITIES

The County's farming industry is transitioning away from the single crop, large scale plantation model. Gay and Robinson harvested its last sugar crop in 2009. The Lihu'e Mill came down in 2012. New crops, new land uses, and technological advances are all presenting themselves as opportunities to be layered over historic and cultural relationships to the land. The seed industry, for example, has doubled its acreage, and the Kaua'i Coffee Company has one of the highest acreages of coffee grown in the nation. Small, organic family farms are proliferating on the North Shore. Additional interest in farming and healthy eating can be found in the emergence and/or increase in community gardens, food forests, farm-to-table restaurants, and sunshine markets.

The 2014 *Important Agriculture Land Study* states, "Agriculture is the history and lifeline of these Hawaiian Islands." This is especially true for Kaua'i where productive agricultural lands are critical to the economy and the production of healthy foods consumed locally. Agricultural activities also touch upon jobs, housing, transportation, and growing/processing of materials. Understanding the history associated with food production in Kaua'i is useful for very practical reasons, like the need to maintain

existing irrigation systems. Given the resurgence of interest in Hawaiian culture (as documented in the Kaua'i Planning and Action Alliance's 2012 *Measuring What Matters for Kaua'i* report), it is likely that more people will turn to farming to satisfy household and 'ohana needs, but also as an occupation. New niches are forming thanks to the "Kaua'i Made" brand. The schools and Kaua'i Community College are nurturing this interest and providing training.

To summarize, the major opportunities in Agricultural Lands include:

- New crops, new land uses, and new technologies are presenting themselves as the agricultural industry transitions from the single crop, plantation model.
- Small, organic enterprises – ranging from farms to retail to restaurants – are creating a need for agricultural lands.
- The resurgence in Hawaiian culture, healthy eating and a more self-sufficient lifestyle is generating more interest in agriculture.
- Schools and the community college are well-positioned to nurture this interest in agriculture and provide training.

5.3 HOW THE 2000 GENERAL PLAN TREATED AGRICULTURE

- The Agriculture section in the 2000 GP reflects older thinking. It will need to be rewritten to reflect recent changes to the industry and new regulations regarding the designation of Important Agricultural Lands. The IAL and 2015 *Land Use Buildout* Technical Report contain the majority of data needed to update this Chapter.
- The 2000 GP addresses aquaculture within the agriculture chapter.
- The 2000 GP included an Implementing Action (4-26) requesting the Planning Department to submit an amendment to the CZO that would eliminate the requirement to subdivide in order to grant a long-term lease for agricultural use only (no dwelling use). This revision was intended to encourage land owners to make land available to small farmers, and has not yet been initiated. Alternatively, an amendment may not be needed, if the existing "Agricultural Parks" process can be utilized more extensively.
- The 2000 GP included an Implementing Action (4-26) requesting the Planning Department to submit an amendment to the Subdivision Ordinance that would require preservation of viable irrigation systems. This revision was intended to maintain viable irrigation systems – both government- and privately-owned – and to support the supply of irrigation water to farmers at reasonable prices. This has not been initiated.
- The 2000 GP included an Implementing Action (5-6) requesting the Planning Department to amend the CZO to implement the policies for Agricultural lands in the GP. These included amendments to site planning standards and criteria for approving and Agricultural Community. The Planning Department attempted to amend the CZO accordingly and was unsuccessful. Controls on the subdivision of lands to prevent loss of agricultural potential and rural character are still needed.

5.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

Work on agriculture and food sustainability to be conducted by the GP Team includes:

- 1) A significant amount of current research and collaborative thinking has gone into the 2014 *Important Agriculture Land Study*. The Study's findings and recommendations were vetted by a diversity of community leaders and outside experts, and should be introduced to the CAC for consideration. Recommendations articulated in the study should be evaluated for its incorporation in the General Plan policies.
- 2) In accordance with the recommendations contained in the *IAL Study*, the updated GP will need to help reconcile:
 - a. Increasing access to water and water infrastructure improvement for agricultural irrigation.
 - b. Increasing access to land (to lease or own) for farmers growing food and primary resources (timber, holistic medicines, etc.).
 - c. Improving upon or redeveloping a system for local and export marketing of food and (primary) resources.
- 3) Table 4-4: Kaua'i's Agricultural Lands (acres) in the 2000 GP can be updated with the *Land Use Buildout* Technical Report and Table 2 and information on page 9, as well as the *IAL* Technical Report Table 4.
- 4) The GP Team will need to decide where to locate references to aquaculture in the GP – either in "Agriculture" or "Economic Development".
- 5) The zoning of agricultural lands needs closer attention in order to confirm that the Important Agricultural Lands are, in fact, zoned for agricultural uses, that residential uses on agricultural lands are appropriately scaled and clustered, and that these lands are physically accessible and have access to necessary water supplies.
- 6) Research conducted during the GP planning process may reveal that there are more land use conflicts between the Agriculture and Urban Districts than currently assumed or documented.
- 7) Given how the industry is changing, the GP Planning process may also consider rethinking how agriculture is regulated and incentivized. Agricultural zoning typically specifies the density of development and permitted uses. In many agricultural zoning ordinances, the density is controlled by setting a large minimum lot size for a residential structure, but densities may also vary depending upon the type of agricultural operation and proximity between other properties or uses.
- 8) Land use regulations are not the only way to impact agricultural activities. The County could consider financial incentives or programs to support maintaining and growing agricultural activities, such as purchase of development rights and conservation easements.
 - a. Purchase of development rights (PDR). A program that allows property owners to voluntarily sell the development rights to their land at fair market value in return for deeding a permanent conservation easement held by a land trust or local government.
 - b. Agricultural conservation easement. A voluntary (legally recorded) agreement between a landowner and a qualified conservation organization, often a land trust, which restricts land to agricultural and open space uses.
 - c. Farmland mitigation programs. Can help preserve agricultural lands. They involve protecting farmland by providing equivalent farm acreage elsewhere when agricultural land is converted to other uses, or paying a fee when farmland is converted to other uses.

5.5 RESOURCES

County of Kaua'i Important Agriculture Land Study. December 2014.

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6.0 TOURISM

6.1 DEFINING THE ISSUES

Kaua'i's tourism industry is the largest sector of the Island's economy. It regularly accounts for about 33% of the County's real income, generates more than a quarter of the jobs on Kaua'i, and contributes substantially to the county tax revenues (*Kaua'i Comprehensive Economic Development Strategy*, 2010). The tourism industry employed 11,029 of Kaua'i's residents in 2011 (Collaborative Economics, 2015).

In 2014, Kaua'i received 1,113,605 visitors, who stayed an average of 7.71 days and spent \$171 per day. Of these, 70% were returning visitors while 30% were new. Three out of four were independent travelers. The average visitor count per day is 23,536. Visitors increase Kaua'i's population by as much as 22% on any given day. Direct visitor spending for an average year in the first decade of this century was about \$1,087 million. DBEDT's visitor industry Input-Output model shows that the indirect and induced effects of visitor expenditures practically double the amount of direct expenditures.



Because tourism is sensitive to disruptions including economic downturns, climate events, and world geopolitical events, it has been the County's objective to diversify the local economy and thereby reduce its dominant effect on total economic output.

Tourism can have negative side effects. The Island's million-plus annual visitors place stress on local infrastructure and increase the demand for public services. Visitor impacts on natural resources and parks were identified as a concern in the 2000 GP, and remains a concern today. Major visitor destinations on Kaua'i – particularly Kē'ē Beach (Hā'ena State Park), Kalalau (Na Pali Coast State Wilderness Park), and the Waimea and Kōke'e State Parks - are underfunded and in need of improved maintenance.

Kaua'i Tourism Strategic Plan (2015) notes that a key issue is the significant fluctuation throughout the year in the number of visitors. When the daily visitor count is over approximately 25,000, the island's roads, beaches and other infrastructure are taxed, and the visitor experience and resident quality of life diminish. There is interest in managing the "peaks and valleys" in the visitor count. The peaks typically occur in the mid-June to August and during the winter holidays. In December 2014, the daily visitor count reached 26,170. Until there is improvement in the island's infrastructure, the desirable range of visitors per day is within the range of 23,000 to 25,000, thus ensuring valleys and peaks are evened out.

The parking situation at Kē'ē Beach is an example of the challenges. Hā'ena State Park lies at the "end of the road" on Kaua'i's north shore. Both visitors and locals appreciate the ancient sea caves, beach, opportunities for shore fishing, and viewing of the Nāpali Coast. The trailhead for the 11-mile Kalalau Trail begins in this park. The limited parking quickly fills up and results in a combination of illegal parking

and /or frustration for those who have driven far to enjoy the park or trail. There are high instances of theft and vandalism at this parking area, as well as many others around the island.

Several important visitor destinations have recently updated plans, or plans that are well underway. State Parks and the Ha'ena community are working together to refine and adopt a park master plan for Ha'ena State Park. Another issue associated with tourism is the proliferation of alternative visitor accommodation units such as Transient Vacation Rentals (TVRS) and Bed & Breakfast (B&B) operations, specifically outside of the designated visitor destination areas (VDA). The 2000 General Plan called for the County to recognize "alternative visitor accommodations," as well as enact clear standards and permit processes for regulating alternative visitor accommodations structures and operations in Residential, Agriculture, Open and Resort zoning districts. Although the TVR and Homestay ordinances have begun to implement the 2000 General Plan policy regarding the regulation of alternative visitor accommodations, there is still concern that such uses may have negative and adverse impacts on certain residential neighborhoods zoned outside of the visitor destination areas. In addition to altering the character of the community because of the constant turnover of different people, neighborhoods with TVRS decrease the affordable housing inventory for local residents. Illegal alternative accommodations outside of the visitor destination areas puts a strain on enforcement efforts with limited staff and resources.

To summarize, the major issues in Tourism include:

- Tourism is the largest sector in Kaua'i's economy, and one of Kaua'i's only basic industries.
- Tourism is sensitive to economic disruptions, major weather events, and geo-political issues.
- Tourism places high demands on infrastructure, services, and natural resources.
- A balance is needed to accommodate visitors and residents harmoniously.

6.2 OPPORTUNITIES

A strong tourism industry can honor the people, culture, and heritage of Kaua'i. It can support and enhance the quality of life for residents; add value and perpetuate the natural and cultural resources of Kaua'i. It can support a vibrant and sustainable economy, and provide a unique, memorable, and enriching visitor experience.

According to the 2005-2015 Kaua'i Comprehensive Economic Development Strategy (CEDS), leaders in the visitor industry on Kaua'i identified the needs that require immediate attention and action. These areas include:

- Improving the condition of State and County parks
- Addressing the issues of safety and security
- Improving directional signage
- Providing improved interpretive signage
- Creating more regional visitor/cultural centers around the Island
- Conduct a study of cruise ship social, economic, and physical impacts, infrastructure improvements required, and costs
- Create an educational program, beginning in middle school, on the importance of the visitor industry to Kaua'i's economy and the State as a whole

While the general areas for improvement included in the 2005-2015 remain important, the 2010 CEDS included a more specific list of infrastructure improvements (identified by industry leaders):

- Wailuā emergency bypass road (between Hanamā'ulu and Wailuā River)
- Līhu'e Airport runway expansion
- Puhi-Līhu'e-Hanamā'ulu water system
- Kūhiō Highway relief route (between Hanamā'ulu and Kealia)

Kaua'i's *Tourism Strategic Plan Update* was released in July 2015. It includes strategies and measures that work toward five key objectives, shown in the text box at right.

Visitor housing options continue to expand. Hotels and resorts are no longer the only option. The diversity of options can appeal to more people, and help grow the industry. The Buildout Analysis suggests that there is basically enough land zoned land to accommodate visitor growth.

To summarize, the major opportunities in Tourism include:

- A strong tourism industry can honor Kaua'i's heritage, create jobs, generate revenue that can improve local services and facilities, and spread aloha beyond the Island.
- There is sufficient land zoned for resort facilities to accommodate visitor growth.
- Alternative visitor destinations can generate new revenue for property owners and offer visitors an option to staying in a resort.
- Alternative transportation such as airport shuttles, shuttles to popular destinations, and visitor use of bicycles and walking paths.

Kaua'i Draft Tourism Strategic Plan Objectives (2015)

1. To make positive contributions to the quality of life for residents.
2. To increase the economic contribution of the visitor industry to Kaua'i.
3. To increase communications, interactions and understanding between stakeholder groups, especially between residents and the visitor industry.
4. To maintain and improve visitor satisfaction with their experience on Kaua'i.
5. To reinforce authentic Native Hawaiian culture and local Kaua'i culture, the foundations of our unique sense of place.

6.3 HOW THE 2000 GENERAL PLAN TREATED TOURISM

- The "Visitor Industry" chapter is one of the longer ones in the 2000 GP. Beginning with visitor projections, it includes data and discussion pertaining to the number, types, and locations of units needed to accommodate visitors.
- The 2000 GP addresses the impact of visitors on parks and natural resource areas, but does not discuss the impact of visitors on other infrastructure or transportation systems.
- The 2000 GP recommended amending the CZO to set development standards and permit process for alternative visitor accommodation structures. This has been implemented through Ordinances 987, 904, 876, and 864. Development standards now exist for B&Bs, vacation rentals, retreat centers and inns.

6.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

Work on tourism to be conducted by the GP Team includes:

- 1) Update the analysis from the 2000 GP with data from the 2015 *Land Use Buildout and Socioeconomic Analysis and Forecasts* Technical Reports, *Tourism Strategic Plan*, and CEDS.

- 2) Update the area-specific discussion of trends in the 2000 GP with input from updated plans and agency representatives.
- 3) Update Table 4-1: Estimate of Overall Demand for Visitor Units in 2020 in the 2000 GP with Table 11 in the *Socioeconomic Analysis and Forecasts* Technical Report.
- 4) Update Table 4-2: Visitor Units by Area and Type, 1999 in the 2000 GP with the *Socioeconomic Analysis and Forecasts* Technical Report Table 12 (by area) and with the Hawai'i Tourism Authority "2014 Visitor Plant Inventory" (by area, property and unit type).
- 5) Update Table 4-3: Summary of Potential Visitor Units, by Status and Area in the 2000 GP with the *Land Use Buildout* Technical Report Table 20 Hawai'i Tourism Authority "2014 Visitor Plant Inventory" (planned additions and new developments).
- 6) Discuss means for the County and State to manage visitor-driven congestion, such as by integrating work conducted for the North Shore/South Shore Shuttle Study into the GP Tourism and Transportation sections.
- 7) The GP planning process could examine the list of tourism projects based on their impact on other policy areas in the GP. According to the 2015 *Land Use Buildout* Technical Report, in all Planning Districts except for the North Shore, the existing inventory - plus proposed new developments - exceed the projected need for tourist accommodations. Līhu'e had the most excess followed by Waimea-Kekaha, Kapa'a-Wailuā, and South Kaua'i. The Technical Report suggests that the projected deficit for the North Shore can be accommodated by the extensive supply of potential single-family transient vacation rentals within the Visitor Destination Areas. However, the GP planning process might generate alternative solutions.

6.5 RESOURCES

State of Hawai'i, Division of State Parks Department of Land and Natural Resources. June 2014. *Kōke'e and Waimea Canyon State Parks Master Plan*.

Hawai'i Tourism Authority. 2014. Visitor Plant Inventory.

[http://www.hawaii-tourismauthority.org/default/assets/File/2014%20Visitor%20Plant%20Inventory%20Report%20\(FINAL\).pdf](http://www.hawaii-tourismauthority.org/default/assets/File/2014%20Visitor%20Plant%20Inventory%20Report%20(FINAL).pdf)

County of Kaua'i Office of Economic Development and Kaua'i Economic Development Board. *Kaua'i's Comprehensive Economic Development Strategy (CEDS) Report 2005-2015*.

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7.0 OPEN SPACE

7.1 DEFINING THE ISSUES

What people perceive as “open space” in Kauaʻi is either undeveloped land, agricultural land, or land that is regulated to limit development. Kauaʻi limits development with the General Plan “Open” designation and the CZO’s “Open District”.

According to the 2015 *Land Use Buildout* Technical Report, the General Plan “Open” designation comprises over 70% of the island. The Open designation includes the State Conservation District and other open areas such as golf courses. Land designated as Open



is distributed across the island as follows: Waimea-Kekaha (39%); North Shore (27%); Lihuʻe (12%); Kapaʻa-Wailuā (10%); Hanapēpē-Eleʻele (7%); and South Kauaʻi (4%).

According to Section 5.3.1 of the 2000 GP, lands designated Open shall: “...remain predominantly free of development involving buildings, paving and other construction.” With the exception of kuleanas and other small lots of record, any construction that is permitted shall be clearly incidental to the use and open character of the surrounding lands.

General Plan designated open spaces include important land forms such as mountains; coastal bluffs; cinder cones; stream valleys; native plant and wildlife habitat; areas of predominantly steep slopes; beaches and coastal areas susceptible to coastal erosion or hurricane, tsunami, or storm-wave inundation; wetlands and flood plains; important scenic resources; known natural, historic and archaeological resources; and, areas committed to outdoor recreation. During the GP Update community meetings, feedback indicated that emphasis should be added on preserving scenic qualities of open space, and specifying a preference for sustainable land uses and landscapes.

Lands designated as “Open” in the 2000 General Plan are typically designated as “Agricultural” or “Open” in the CZO. Kauaʻi limits development in its Open and Agricultural Districts, which comprise much of the open space between towns. Under the CZO, single-family residences are allowed within the Open District. As a result of a stronger emphasis on preserving open lands, the County passed Ordinance 896 in 2010 to close a density “bonus” loophole in the CZO and further limit development in this District.

Open spaces between communities help reinforce community identity. A compact community can form a strong sense of place when it is surrounded by open space. A person knows when they are entering a community when the large expanses of open space ends. Kauaʻi residents like this relationship between the built areas and open land, and want to keep it that way.

Open Space Acquisition

The County has established a framework for funding land acquisitions, with a focus on park expansion areas and shoreline access ways. The Public Access, Open Space, Natural Resources Preservation Fund was established by County Charter and receives a minimum of 1.5% of the County's annual certified real property taxes. The callout at right explains the intended application of the funds.

Grants from the State's Land Conservation Fund are also available through the Legacy Land Conservation Program to State agencies, counties, and non-profit land conservation organizations seeking funding to acquire property that has value as a resource to Hawai'i. County agency or nonprofit land conservation organization grant recipients must provide matching funds of at least 25% of the total project costs. The Legacy Land Conservation Program provides grants to local organizations and agencies seeking to purchase and protect lands having cultural, natural, agricultural, historical, and recreational resources. There is a big difference between open spaces that are protected (in perpetuity) and those that are perceived as open, but are simply not yet developed. Community dissent arises when vacant lands people had cherished – and perceived as protected – are developed. Access to many traditional gathering places is now obstructed. There is competition for both access and use of areas that once were accessible for hunting, gathering, fishing, and recreation. The County may never have enough money to acquire all the land that needs protecting. Preventing the development of land has implications for the tax base and population growth that are worth exploring.

The County Charter specifies that the Public Access, Open Space, Natural Resources Preservation Fund will be used to *"acquire lands or property entitlements for the following purposes: outdoor recreation and education, including access to beaches and mountains; preservation of historic or culturally important land areas and sites; protection of significant habitats or ecosystems, including buffer zones; preserving forests, beaches, coastal areas, and agricultural lands; protecting watershed lands to preserve water quality and water supply; conserving land in order to reduce erosion, floods, landslides, and runoff; improving disabled and public access to, and enjoyment of, public land and open space; and acquiring disabled and public access to public land and open space."*

To summarize, the major issues in Open Space include:

- Open spaces contribute greatly to the public's perception that Kaua'i is "the Garden Island".
- Open spaces between towns help maintain and reinforce a community's identity.
- Open spaces protect natural resources.
- Defining the important qualities of open space will be informative in developing policy for the GP Update.
- The GP Update process may involve identifying open spaces that are in need of protection through re-zoning or addition to the Heritage Resources Maps.

7.2 OPPORTUNITIES

Much of the open space between towns (along the roadways) is zoned for agriculture or open space purposes. While traditional zoning districts can maintain uses to a certain extent, both agricultural and open space zoning districts allow for residential activity.

A scenic view plane ordinance was proposed in the 2000 GP to further protect open spaces. It called for preparation of a Scenic Roadways Report, which is not yet complete. Protecting scenic views should be revisited, in addition to exploring new tools to protect open spaces. An Urban Edge Boundary, as

discussed in the Land Uses and Growth Management section of this Paper, can help limit the extent of urban sprawl and delineate town edges and open spaces.

To summarize, the major opportunities in Open Space include:

- A scenic view plane ordinance can help protect open spaces with view planes.
- An urban edge boundary can limit the extent of sprawl, and protect open spaces.

7.3 HOW THE 2000 GENERAL PLAN TREATED OPEN SPACE

- The 2000 GP includes an “Open Lands” section. The delineation of “Open Lands” was revised in the 2000 GP to address the incorporation of Open-zoned lands in subdivisions of Agriculture land. Prior to revisions recommended by the 2000 GP, the number of lots that could be created under Open zoning were added to the number that could be created under Agriculture zoning, even though the actual lands designated as open may be undevelopable because they were located, as in the example of the Waipake subdivision, in a stream gulch. The 2000 GP suggested that the “density bonus” for Open lands contradicts the intent of the Open district and of the Agriculture district development standards. To correct this situation, the 2000 GP recommended that the CZO be amended. Open-zoned lands within Agriculture-zoned properties should be treated as “Agriculture” for purposes of determining the allowable number of residential lots. Counting all acreage as Agriculture gives the benefit of the additional land to the owner while observing the intent of the Agriculture district’s density limitations.
- The 2000 GP recommended protecting scenic views with a new ordinance. This has not yet been done.
- The 2000 GP recommends reviewing of the zoning maps and the CZO provisions relating to the Open District and the Constraint Districts. This is an ongoing effort.

7.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

Work on open space to be conducted by the GP Team includes:

- 1) Consider the impact of changes to the Open District.
- 2) Consider policies for a transfer of development rights (TDR) and/or Purchase of Development Rights (PDR) program on Kaua'i.
- 3) Update the description of the General Plan Open Designation to prevent confusion with the Open District and the concept of “Open Space”. Consider calling the Open District the “Natural Infrastructure” or “Natural” District.
- 4) Examine how Līhu'e's recommended Urban Edge Boundary (from the adopted Līhu'e Community Plan) can, or should, be applied elsewhere. Explore other alternatives for protecting open spaces surrounding communities.
- 5) The CAC and County Planning Department may wish to include text that reflects upon the efficacy of the zone change in the 2000 General Plan. The section will need to include new text that describes the current Open zone.
- 6) In order to enact an ordinance protecting scenic views as recommended by the 2000 GP, a Scenic Roadways Report will need to be prepared that identifies important views. This is outside the scope of the GP Update and will need to be undertaken as a separate project.
- 7) County review of the zoning maps and the CZO provisions relating to the Open District and the Constraint Districts is ongoing, and may be helpful to inform the GP Update. The Constraint Districts, in particular, can be reviewed by the County to eliminate regulations that are no longer

relevant, to improve the effectiveness of relevant regulations, and to simplify zoning administration.

7.5 RESOURCES

County of Kaua'i Public Access, Open Space & Natural Resources Reservation Fund Commission. 2013. *2013 Report to the Kaua'i County Council and Mayor Bernard Carvalho, Jr.*

8.0 AFFORDABLE AND WORKFORCE HOUSING

8.1 DEFINING THE ISSUES

Housing on Kaua'i is expensive and homeownership is beyond the reach of many households. This is true for newly-formed families, for the elderly, for just about everyone. Sixty percent of the housing inventory is affordable to less than 25% of residents. According to HUD income limits, the majority of the existing housing supply can only be afforded by households earning over 180% of the average median income.



An analysis of housing needs conducted by the Kaua'i Housing Agency for the *2015-2020 Consolidated Plan* identified the following trends:

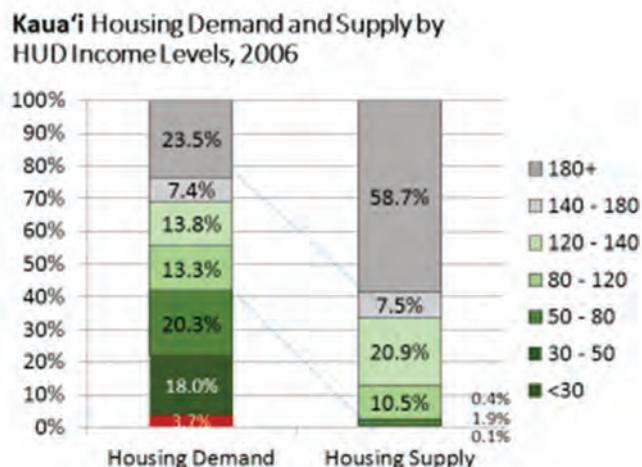
- Housing affordability is a problem. Renter and owner households below 30% of median, and between 30%-50% of median have the highest housing cost burden among households below 100% of AMI paying greater than 50% of their income on housing costs.
- Overcrowded housing is a problem. Renters experience a disproportionately higher incidence of severe overcrowding than owners.
- Substandard housing is a problem. Significantly more renters experience substandard housing (lacking complete plumbing or kitchen facilities) than owners with similar household incomes.

According to the *2014 Socioeconomic Analysis and Forecasts* technical report prepared for the GP Update, average annual job growth for the County of Kaua'i is expected to equal 0.79% over the next few years. Between 2020 and 2030, job growth is expected to occur at an average annual rate of 0.66%. The rate is expected to dip again to 0.53% during the period between 2030 and 2035, adding less than 1,000 jobs. The idea behind investing in specific cluster industries (as discussed in the Economic Development section of this Paper) is to create jobs to pay for housing and other living costs. In the meantime, the cost of living continues to increase, with housing and transportation costs consuming a large portion of a household's income.

Some housing is built far from commercial areas and community services, so residents must rely heavily on private vehicles to get around. Such reliance is bad for the environment, physical health, and contributes to traffic congestion. Many existing homes could benefit from renovation or expansion. As Kaua'i's population ages, homes may need to be retrofitted for greater accessibility, or expand to accommodate multi-generational households.

According to the *Hawai'i Housing Planning Study (2011)* and *Consolidated Plan (2015-2020)*, of the 1,312 housing units needed by year 2016, 376 units are for ownership and 936 units are for rental. Approximately 86% of rental units needed are for families below 80% of median income. Unit type needed by low-income families is mostly multi-family. Units that are needed to serve elderly households account for approximately 19 percent of total needed units by year 2016.

There is an insufficient amount of affordable housing for the disabled, elderly, homeless individuals and families, and young families. The lack of affordable housing, results in overcrowding, which in turn fuels the demand for illegal or substandard housing units. Due to the high cost of living, many families cannot save enough money for the requisite down payment and closing costs (which are the highest in the nation) needed to purchase a home. The cost of living is exacerbated by high transportation costs and energy costs, and leaves many families with little discretionary income.. As such, it is becoming more difficult for young couples to afford their first home, for the elderly to keep their homes, and for children to return to, or remain on, Kaua'i after graduating from college. Kaua'i's 2015-2020 Consolidated Plan recommends strategies to remove or ameliorate the barriers to affordable housing, as shown in the text box below.



2015-2020 Consolidated Plan Strategies for Affordable Housing

Land Use Controls - The Housing Agency will support efforts that streamline the planning, zoning and permitting process through the administration of the county's 201-H policy and processing of development exemptions for eligible applicants that develop at least 51% of the total project units as affordable housing.

Affordable Housing Task Force - The Housing Agency will continue to assist private developers through the Affordable Housing Task Force. The Task Force consists of representative from county line review agencies and provides a private developer the opportunity to dialogue and receive feedback to help streamline project review time.

Expedited Permitting - The Housing Agency will continue to recommend expedited permitting for affordable housing projects. Projects so designated will be given preferential permitting by review agencies.

Fee and Charges - The Housing Agency will continue to administer requests for waivers of fees and charges allowed for affordable housing pursuant to Kaua'i County Code for building permits, sewer connection fees, environmental impact assessment fees, etc.

Growth Limits - Continue to support the development of comprehensive planning for the island's communities consistent with the General Plan update. Endorse planning principles that integrate reasonable growth principles.

Policies that Affect the Return on Residential Investment - The County will impose deed restrictions on the transfer of dwelling units according to the minimum requirements of Ordinance No. 860. This deed restriction requires owner occupancy of the units. If the owner wishes to sell their unit within a buyback period, the unit must be first offered to the County at a price determined by a prescribed formula.

It should be noted that the “buyback provision” included in the last strategy may require further analysis, given that the prescribed formula results in a price that is often beyond the County’s ability to pay; thus, allowing the affordable unit to become a market-rate unit.

To summarize, the major issues in Affordable and Workforce Housing include:

- Much of Kaua’i’s housing is not affordable – especially to the elderly, homeless, young families, and disabled - and households are spending too much of their incomes on housing costs.
- In response to the lack of affordability, people are living in crowded and sub-standard conditions.
- New homes are often built far from town centers, which means people need to rely on cars to get around. A heavy reliance on personal vehicles is expensive, bad for one’s health and the environment.
- Kaua’i lacks a diversity of housing options. Multifamily housing stock is very limited. Large lot, single-family housing is not affordable for most of the resident population, yet most of Kaua’i’s vacant residential land is zoned for large lot housing. Housing for residents will be an increasing challenge, particularly for aging households, whose numbers are rapidly increasing.

8.2 OPPORTUNITIES

Housing is expensive due to high land and materials costs and out-of-state demand. These factors are not easily controlled. The regulatory process and design standards are more easily adjusted to achieve policy objectives. For example, Kaua’i’s Affordable Workforce Housing Ordinance recognizes that affordable housing is not produced at sufficient rates, and therefore requires developers to build affordable housing as a condition of market-rate housing approval. In response to concerns that the mandatory production of affordable housing was preventing development altogether, the percentage of required production was recently reduced. Changes to the Ordinance will hopefully result in the actual production of more affordable housing by the private sector.

While the Workforce Housing Ordinance targets specific households and addresses well-defined, critical needs, alone the Ordinance will not satisfy all outstanding housing issues. It is an important option along a continuum of potential solutions. Kaua’i’s Housing Agency already implements a variety of programs designed to provide emergency shelter, promote homeownership, expedite the permitting of affordable housing production, offer loans to purchase or rehabilitate housing, among others. Sources of funds that are potentially available to address housing needs include: Low-Income Housing Tax Credits, Section 8 Housing Choice Vouchers, Economic Development Initiative, U.S. Department of Agriculture Rural Development programs, private foundations, State CIP funds, and County funds. Federal funds are very prescriptive in terms of households 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.

Land Use Policies for Housing Diversity and a Mix of Uses

The land use and building code regulations can be revised to facilitate the construction of a broad mix of housing. For example, the County could:

- Allow for more mixed-use zoning, so that more people may live close to town, near bus stops, and above shops, and thereby save on transportation costs.
- Allow for the construction of smaller dwelling units.
- Create a system similar to 201H that prioritizes, expedites review, and reduces fees for a greater variety of affordable housing projects.

- Reduce lot sizes and allow for more multi-family units in certain districts.
- Allow for increased heights in certain districts.
- Revise building codes to allow for the construction of a greater diversity of housing unit types, at lower costs.

Infill and/or redevelopment can produce more affordable housing without sprawl, and may be less expensive than “greenfield” development because it is closer to existing infrastructure. Both the Līhu'e and South Kaua'i Community Plans, adopted in 2015, call for housing, including affordable housing, in compact walkable communities.

There is also an opportunity to look at incorporating “Missing Middle” housing as infill or development in walkable town centers. Coined by Dan Parolek of Opticos Design Inc., the “Missing Middle” 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, that are integrated throughout most walkable Pre-1940s neighborhoods, often integrated into blocks with primarily single-family homes, and provide diverse housing choices and generate enough density to support transit and locally-serving commercial amenities. Supporting the construction of the “Missing Middle” could result in the production of more diverse and affordable housing options.

Hawaiian Homelands Housing

The Department of Hawaiian Home Lands (DHHL) works to ensure that native Hawaiian families have homes and land to call their own. The 2004 DHHL *Kaua'i Island Plan* designates three priority tracts for development. These are the residential areas of Wailuā, Hanapēpē, and Anahola/ Kamalomalō. These priority areas reflect the Department's emphasis on developing large master-planned communities to provide as many houses as possible to beneficiaries, in the shortest amount of time and at the least cost. The DHHL has also longer-term plans to develop agricultural and pastoral homesteads; lands for community uses that include schools and park sites; a small amount of commercial and industrial sites; and, to encourage large scale agriculture or ranching on the 13,000 acres of land island-wide that are designated for General Agriculture.

Allocation of Residential Zoned Lands

If the GP includes recommendations to allow for more residential land uses (increasing the supply of housing) and more affordable housing types, the CZO could subsequently be revised to reflect such intentions. According to the 2015 *Land Use Buildout Analysis*,

When considering alternatives to ensure that there is adequate zoning to accommodate the projected population, thought should be given to increase the supply of higher-density residential options especially within walkable town centers ... Only Līhu'e [currently] has R-8 zoning that could provide flexible higher density options in-between a typical single-family experience and a higher-density development. All districts have multi-family zoning, but could perhaps use more or integrate into mixed-use zoning categories that may emerge in the future, particularly Līhu'e and East Kaua'i.

The 2015-2020 *Consolidated Plan* contains a current assessment of housing needs. The 2014 *Kaua'i Community Health Improvement Plan*, corroborates housing was a critical theme. Its findings are supported by the data contained in the 2011 *Hawai'i Housing Planning Study* and the 2015 *Land Use Buildout Technical Report*.

To summarize, the major opportunities in Affordable and Workforce Housing include:

- Regulatory means - like the Workforce Housing Ordinance, 201H, more mixed use zoning at higher densities, and the like - can expedite or force the production of housing, and create an environment that lowers the cost of construction.
- The Housing Agency can be further supported in its efforts to seek funds that supplement the County's budget in order to build affordable housing, and offer homeownership programs and rehabilitation loan programs.
- DHHL owns significant amounts of land on which affordable housing for native Hawaiian families can be built. A TDR Ordinance could facilitate the construction of DHHL homes closer to existing infrastructure and town centers.
- A more holistic approach to reducing the cost of living includes not only the production of affordable housing, but also reducing transportation and energy costs.

8.3 HOW THE 2000 GENERAL PLAN TREATED HOUSING

- The "Housing" section within the 2000 GP was based on information that is now outdated. It will require extensive updating. Information is largely available to accomplish that.
- Based on population projections of an annual growth rate of 3.8 % (between 1980 and 1990), the 2000 GP emphasized the need to produce housing, and integrated support services, for the elderly.
- The 2000 GP recommended revising the CZO, as necessary, to facilitate the development of assisted living units and continuing care communities serving the elderly. While the CZO has not yet been revised, the County has participated on State-Wide Assisted Living Facilities Task Force.

8.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

Work on housing to be conducted by the GP Team includes:

- 1) Much of the needed data is readily available in the 2015-2020 Consolidated Plan, 2014 Rental Study, and 2014 *Socioeconomic Analysis and Forecasts* Technical Report.
- 2) Update the policies and actions contained in the 2000 General Plan from current sources.
- 3) The GP planning process can vet variety of regulatory, financial and programmatic recommendations that might be initiated by the Housing Agency or others.
- 4) Describe housing needs (including those of the elderly, special needs, young families, etc.) / goals / potential actions from 2016 to 2035.
- 5) Identify the regulations that can support affordable housing construction.
- 6) Obtain data indicating to what degree accessory dwelling units are satisfying affordable rental needs, if such data exists.
- 7) Determine how to expedite the leveraging of Low-Income Housing Tax Credits, Sec 8 Vouchers, Economic Development Initiatives, USDA Rural Dev, private foundations, State CIP, and County funds.
- 8) Identify affordable housing projects that will expire before 2035. Determine how the buy-back program can be improved.
- 9) Identify how the private sector can play a larger role in producing affordable housing.
- 10) Consider improvements to the Affordable Workforce Housing Ordinance.
- 11) Consider creating an index for Kaua'i called the HTE index ("Housing, Transportation, Electricity" that builds on the CNT's H+T Index) to illustrate how severe the cost of living problem is in Kaua'i.
- 12) Update Table 8-1: Household Composition using data from Table 7 pertaining to Housing Units in the Socioeconomic Technical Report.
- 13) Update Table 8-2: Kaua'i Income Distribution, using US Census data.

- 14) Update Table 8-3: Shelter-to-Income Ratios, using *Hawaii Housing Policy Study*, 2003, Table IV-A-7. Shelter-to-Income Ratios, August 23, 2003 and the 2011 *Hawaii Housing Planning Study*, Table 5: Shelter-to-Income Ratio.

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9.0 NATURAL HAZARDS AND CLIMATE CHANGE

9.1 DEFINING THE ISSUES

Kaua'i is susceptible to a variety of natural hazards, including coastal storms, hurricanes, high wave events, flooding, coastal erosion, tsunamis, drought, wildfire, landslides and vog.

All of these hazards threaten lives, property, the natural environment, and the economy. While little can be done to prevent hazard events, their adverse impacts can be reduced through proper planning.

Climate change is an important public health and safety factor that needs to be considered when developing policies for the location and pattern of development. Existing hazards will be exacerbated by climate change and sea-level rise. Based on the best available science, a range of sea-level rise of 1 foot by 2050 and 3 feet by 2100 is a reasonable, and possibly even conservative, planning target for Kaua'i and other Hawaiian Islands. This is consistent with recommendations from the University of Hawai'i Sea Grant College Program Center for Island Climate Adaptation and Policy (ICAP) report titled *Sea- Level Rise and Coastal Land Use in Hawai'i: A Policy Tool Kit for State and Local Governments* and the *State of Hawai'i Ocean Resources Management Plan*.



It is important to note that scientific studies also suggest high end sea level rise scenarios upwards of 6 feet by 2100. The National Oceanic and Atmospheric Administration's high end scenario of 6.6 feet is based on projections that use a calculation of the maximum possible glacier and ice sheet loss by the end of the century. At this stage the greatest uncertainty surrounding projections of future global SLR is the rate and magnitude of ice sheet loss, primarily from Greenland and West Antarctica.

Given the range of uncertainty, NOAA and UH Sea Grant (through the Kaua'i Climate Change and Coastal Hazards Assessment) recommend a scenario-based planning approach, whereby planning decisions consider multiple future scenarios and response options, where the highest scenario should be considered in situations where there is little tolerance for risk (e.g. new infrastructure with a long anticipated life cycle such as a power plant), and the lowest scenario should be considered when there is a great tolerance for risk.

Climate change, and in particular sea-level rise, has the potential to adversely impact coastal communities, critical infrastructure, agricultural productivity, recreation and access to natural and human-made recreational facilities, cultural resources, natural habitats, tourism, and other economic sectors. It can potentially threaten the health and safety of residents and tourists. Twenty percent of Kaua'i's residents live near the shoreline. Low-lying roads, wastewater systems, energy facilities, stormwater systems, and docking facilities in harbors will be at risk of impaired function due to the collective hazards of climate change and sea-level rise.

Climate change and sea level rise will affect important natural habitats, many of which provide essential natural hazard buffers for communities, including beaches, dunes, wetlands, and rivers. Inundation and

erosion from SLR will reduce habitats and/or convert habitats from one type to another, including sandy beaches and rocky intertidal areas. While new wetlands may be created due to the rise in the groundwater table (if adequate land area is available), saltwater intrusion could occur in existing aquatic ecosystems, including wetlands, streams, and estuarine systems, changing their character and vastly affecting the species that depend on them. This calls for the need to identify and map environmental systems that protect development from natural hazards and examine existing habitat protection policies and strengthen them, if needed. See Chapter 15 of the *Kaua'i Climate Change and Coastal Hazards Assessment* for more information.

Kaua'i's landmark beaches are of great importance to residents and the visitor industry. Beaches are critical cultural and social gathering places. Beach erosion will increase as sea levels rise. Beach nourishment can be used to restore beaches and reduce property loss from erosion, but the high cost of these projects generally limits them to beaches of high economic importance.

Sea-level rise could also lead to an increase of flooding and inundation of low lying agricultural land, salt water intrusion into agricultural and potable drinking water supplies, and a decrease in the amount of freshwater available. In addition to the coastal hazards, agriculture will be affected by drought, possible increases in storm intensity, and changes in rainfall patterns.

Coastal Hazards

The *Kaua'i Climate Change and Coastal Hazards Assessment* was prepared in 2014 to support the GP Update. It identifies existing coastal hazards and climate change effects that are expected to increase on Kaua'i into the future, and suggests measures for adaptation, resiliency, and mitigation.

The key coastal hazard impacts to consider for Kaua'i are: (1) coastal flooding and wave inundation; (2) erosion; (3) inland (stream) flooding, and (4) wind. These impacts may be the result of one or more hazard events including storms, high surf, sea level rise, sediment (sand) budget deficits, etc. Proper planning and mitigation programs, however, should be designed around these key impacts and not just the event that causes them,

Coastal Flooding and Wave Inundation

Coastal flooding is the flooding of normally dry, low lying coastal land. It can be caused by elevated sea surfaces or large tidal fluctuations, seasonal high waves that push water inland, and surge from low pressure systems, tropical cyclones, and tsunamis.

The Atlas of Natural Hazards in the Hawaiian Coastal Zone and the *County of Kaua'i Hazard Mitigation Plan* identifies notable high wave events, not including tsunamis, from the early 1900s through the late 1990s, many of which caused beach erosion and overwash, and damaged structures. The largest wave events typically occur on the north shore due to strong storms in the North Pacific, but the south, east, and west shores also have significant wave events.

Hurricanes with large wave heights and storm surge have historically caused extensive erosion and property damage, including Hurricanes Nina (1957), Iwa (1982), and Iniki (1992). Surge from Iniki caused severe damage to the Po'ipū coast where the greatest inundation occurred.

The recorded history of Hawaiian tsunamis shows that 26 large tsunamis have made landfall within the islands and eight have had significant damaging effects on Kaua'i. There are many examples of tsunami inundation on Kaua'i that demonstrate the magnitude and variability of tsunami impact on the shoreline. During the 1946 tsunami on the north shore, Hā'ena had a runup height of 45 feet, while only a few miles away in Hanalei Bay, runup was 19 feet. Tsunami Evacuation Zone Maps that are based on historical

tsunami runup and hypothetical models of near and far source tsunami runup are available from the Kaua'i Civil Defense Agency.

Understanding how climate related changes will affect coastal flooding and wave inundation is an area of active research. In general, extreme water levels will occur when sea level rise combines with seasonal high tides, interannual and interdecadal sea level variations, and surge and/or high runup associated with storms and tsunamis.

To visualize future inundation from sea-level rise, data from the NOAA Digital Coast sea level rise viewer provides a “bathtub” model of sea level rise inundation for Kaua'i. There are mapped inundation scenarios for 0 to 6 feet of sea level rise. Some notable limitations of these maps are that increases in water levels from wave runup is not evaluated and they do not predict the potential for increased coastal erosion. These maps may be used in the general planning process as a preliminary screening tool for SLR inundation hazards to identify areas where future adaptation planning efforts should be focused, such as conducting detailed hazard, risk, and vulnerability assessments.

Coastal Erosion

Historical erosion studies using shoreline positions mapped from aerial photographs and survey charts show that beach erosion is a troubling trend leading to shoreline change on Kaua'i, overall. The *National Assessment of Shoreline Change: Historical Shoreline Change in the Hawaiian Islands* reports that 71% of beaches on Kaua'i are eroding, with nearly 4 miles of beach completely lost to erosion over the past century. On average, shorelines on Kaua'i retreated over 36 feet over the past century. Beaches on the north and east coasts of Kaua'i are experiencing the most erosion (76% and 78% of beaches, respectively). The majority of beaches are also eroding on the south and west coasts (63% and 64% of beaches, respectively). In addition to long-term or chronic erosion, Hawai'i beaches are also highly prone to erosion from seasonal high waves and storms.

The observed erosion trends can generally be explained by a combination of causes, including:

1. Human impacts to sand supply: In Hawai'i, human impacts that have notably contributed to erosion and/or beach loss include the practice of shoreline hardening (seawalls and revetments) to protect development built too close to the shoreline and sand mining.
2. Seasonal and storm waves and wave-driven currents that move sand, and
3. Sea-level rise forcing shoreline retreat.

Sea level has been rising globally and around the Hawaiian Islands over the last century or longer. Sea level has risen about 6 inches around Kaua'i over the past century. Rates of sea-level rise (SLR), globally and locally around Hawai'i, are expected to accelerate over this century. SLR leads to shoreline retreat through two processes: 1) by simply moving the water line up the coastal slope and 2) by increasing erosional effects of waves on the upper beach, dune, or cliff. Expected future increases in sea level will result in increases to historical erosion rates and will add pressure to already eroding beaches and beaches that were previously stable. Some predictions show that average erosion rates at Hawai'i beaches will double by the year 2050. Mapping of future shoreline position on Kaua'i under accelerated sea level rise scenarios is currently underway by researchers from the University of Hawai'i Coastal Geology Group.

Inland (Stream) Flooding

There are instances on Kaua'i of intense flooding associated with runoff, mudslides, bank failures, dam breaches, and erosion. Some have caused deaths and millions of dollars in property damages. The 2014 *Kaua'i Climate Change and Coastal Hazard Assessment* suggests that the primary challenge to mitigating

the hazard due to stream flooding is one of obtaining adequate warning in the case of flash floods and in improved planning of developments in areas of known flood history. The County of Kaua'i *Hazard Mitigation Plan* lists stream flooding events from the late 1800s through 2009.

Some future projections suggest that more frequent extreme rain events could lead to impacts from inland flooding including landslides and slope failure, coastal erosion, and runoff. In the future, the Intergovernmental Panel on Climate Change (IPCC) reports that climate changes in the Equatorial (Tropical) Pacific are expected to cause an increase in precipitation. However, Hawai'i falls at the northern edge of the tropic zone and may not experience the described trends. Historically, annual rainfall has decreased in Hawai'i and this is reflected in decreased groundwater discharge to streams. Also, all four major Hawaiian Islands have experienced more severe droughts since the 1950s. However, rainfall patterns in Hawai'i vary dramatically both temporally and spatially based on trade winds, topography, mid-latitude weather systems, storms and cyclones, the El Niño Southern Oscillation (ENSO) phases, and more. This natural variability along with future climate changes presents a challenge to predict future rainfall and runoff patterns.

Water supply faces threats both from rising groundwater and saltwater intrusion in wells, as well as decline in quality and quantity due to drought and downward trends in groundwater base flows. The water table rises as sea level rises, and it will eventually break the land surface creating and expanding wetlands, changing drainage patterns, saturating the soil, and causing increased flooding. This could cause problems with water supply infrastructure, including aquifer salinization and flooding of facilities. These will be costly to mitigate on an ongoing basis.

Wind

Strong winds throughout the Hawaiian Islands are associated with strong trade wind events, Kona storms, and tropical storms and hurricanes. Kaua'i in particular has a history of wind events associated hurricanes that have been exceptionally damaging, including Hurricanes Dot in August 1959, Iwa in November 1982, and Iniki in 1992. Hurricane Dot packed sustained winds of 75 mph with gusts of 165 mph as it passed directly over Kaua'i. While the storm-generated surf was not particularly damaging, the 2014 *Kaua'i Climate Change and Coastal Hazard Assessment* reports that winds and flooding led to \$5.5-6 million in agricultural losses and hundreds of houses and trees were damaged. Hurricanes Iwa and Iniki both produced high waves ranging 20-30 ft. in addition to winds over 125 mph. Redevelopment in the same areas that were impacted by those events raises the risk of damage from future storms. The County of Kaua'i *Hazard Mitigation Plan* provides a table (Chapter 3, Table 3-2) of hurricane and strong wind events from the early 1900s through 2009.

9.2 Opportunities

The Hawaii State Planning Act (HRS Chapter 226) sets priority guidelines and requires that counties consider sea level rise in planning processes. In 2014, Hawaii adopted the Hawaii Climate Adaptation Initiative Act 83 (HRS §225P-3) to address the effects of climate change to protect the State's economy, health, environment, and way of life. The Act established an Interagency Climate Adaptation Committee (ICAC) comprised of key agency directors, legislators, and subject matter experts, of which Kaua'i County Planning Department is a part.

Addressing coastal hazards associated with climate change does not always require the adoption of brand new programs, ordinances, or statutes. Kaua'i County already has a broad regulatory and planning framework that can cover the four major hazard categories: (1) erosion; (2) wave inundation; (3) flooding; and (4) wind. The degree to which those hazards are addressed or factor in new scientific information such as SLR can be analyzed and adjusted. Opportunities for program adjustment include the Capital Improvement Program (CIP), CZO, Subdivision Ordinance, Special Management Area (SMA) Rules and

Regulations, Floodplain Management Ordinance, the building codes, and the Kaua'i Public Access, Open Space, and Natural Resources Preservation Fund.

Kaua'i has already begun working on planning for climate change. The Special Management Area permit process is a useful tool for coastal policies and design standards, but there are other ways by which vulnerable physical assets can be protected. The County's revised shoreline setback ordinance is an example of potential regulatory improvements. Ordinance 979 increased shoreline setbacks by 20 feet to account for episodic events, sea level rise, and other hazards.

The 2014 *Kaua'i Climate Change and Coastal Hazard Assessment* report includes six major recommendations, several of which speak to gathering more information and incorporating hazard planning into County policies and regulations. It offers recommendations for strengthening existing programs – including floodplain management, shoreline setback ordinance, the SMA process, environmental reviews, subdivision regulations, building codes, the Public Access Funds, and CIP. It recommends new programs such as tax incentives and transfer of development rights to help locate or relocate development outside of hazardous or sensitive areas. It recommends a comprehensive beach management strategy and financing plan for beach and dune maintenance.

The *Kaua'i Climate Change and Coastal Hazard Assessment* recommendations fall into six broad categories:

1. Support the development of improved climate related hazard planning information.
2. Conduct detailed coastal hazard, risk, and vulnerability assessments based on best available climate change science.
3. Include relevant background information and maps for climate change related coastal hazards in the General Plan.
4. Incorporate additional General Plan overarching goals/principles pertaining to planning for climate change related coastal hazards.
5. Use existing planning and regulatory programs to address climate change related coastal hazards.
6. Develop new programmatic strategies to address climate change related coastal hazards.

Section III of the *Kaua'i Climate Change and Coastal Hazards Assessment* identifies the gaps in planning information and guidance to adequately address climate change related hazards, protect health and safety of Hawai'i's communities, and protect coastal resources. This includes how accelerated SLR will affect erosion rates, how SLR and associated erosion will effect wave inundation, and how to address an Aleutian Island earthquake event and tsunami impacts. Therefore, the first recommendation of the *Kaua'i Climate Change and Coastal Hazards Assessment* is for the GP to acknowledge and support the generation of this information.

Fortunately, some of the above-mentioned research is underway at the University of Hawai'i and other research institutions.

To summarize, the major opportunities in Climate Change and Natural Hazards include:

- The State's Planning Act, HRS Chapter 226, and County's *Multi-Hazard Mitigation Plan* (2010) provide the framework for action; and, Kaua'i has already begun revising regulations, like the shoreline setback ordinance, to better protect its people, and natural and built environment.

- Kaua'i has the authority to implement change through its zoning code, subdivision regulations, SMA process, floodplain management, and building codes.
- Kaua'i can continue to use its CIP, Public Trust Funds, and other sources of money and financial incentives to prevent new construction near the shoreline or encourage construction elsewhere.
- The energies and political will of community watchdog groups can help further action to make Kaua'i more resilient.
- The continued generation of important planning information from research institutions, which can inform future Hazard, Risk, and Vulnerability Assessments.

The County is undertaking significant efforts to build Kaua'i's resilience against natural hazards. The *Multi-Hazard Mitigation Plan* for Kaua'i is currently being updated. The County of Kaua'i's Multi-Hazard Mitigation Plan was formally approved in December 2003 as one of the first county plans in the United States to receive approval in accordance with the Federal Disaster Mitigation Act of 2000, 44 CFR Part 201, Hazard Mitigation Planning, and was updated in 2010. The 2010 Multi-Hazard Mitigation Plan goals are to:

- Implement, refine, and revise the Multi-Hazard Mitigation Plan based on updates of the risk and vulnerability assessments.
- Engage in disaster public awareness activities that improve implementation of the plan, building on the network of the hazard mitigation community at local levels and throughout the State.
- Improve communications systems.
- Ensure that adequate shelter is available to all residents and visitors.
- Secure and maintain lifelines and access for medical assistance and transport of materials and fuel.
- Enhance and use the County's geographic information system (GIS) and data to improve planning, permitting, and building such that disaster risks are reduced.
- Harden essential and governmental facilities to maintain operations during a disaster and recovery operations.

The Multi-Hazard Mitigation Plan is being updated as this Issues and Opportunities Paper is being written. The 2015 draft update can be found at: <http://www.hazards-climate-environment.org/Kaua'i>

To summarize, the major issues in Hazard Preparedness and Climate Change Effects include:

- Natural hazards and their more frequent occurrences can be expected as a result of climate change and sea-level rise.
- Twenty percent of Kaua'i's residents live near the shoreline. Located on, or near, the shoreline are many of Kaua'i's critical heritage sites, natural resources, tourist facilities, and infrastructure.
- Climate change is an important public health and safety factor that needs to be considered when developing policies for the location and pattern of development.

In June of 2015, Mayor Bernard Carvalho signed an *Executive Order to Sustain the County of Kaua'i as a Disaster Resilient Community* through a comprehensive mitigation program against natural hazards. It calls for mitigation measures to be implemented that significantly reduce the vulnerabilities and risks associated with inland and coastal flooding, high winds and surf, drought, wildfires, tsunamis, and earthquakes. Fourteen measures are outlined to support hazard mitigation and resilience. These are summarized in the text box below.

Measures Identified in “An Executive Order to Sustain Kaua’i County as Disaster Resilient Community”, Mayor Bernard Carvalho, June 19, 2015

1. Support and implementation of the Kauai County Hazard Mitigation and Resiliency Plan.
2. Countywide risk and vulnerability assessment, and assist communities to develop and implement community resiliency plans.
3. Partnerships with businesses to provide a public-private link for coordinated disaster mitigation, preparedness, response and recovery.
4. Support adoption of the latest version of the International Building Code (IBC) and relevant wind load and seismic provisions.
5. Address hazards and the risks they pose in county-level land-use decisions, including county-owned property development.
6. Maintain a county emergency response plan and develop a county post-disaster recovery and mitigation plan.
7. Compliance, participation, and improvement of current ratings in the National Flood Insurance Program, the Fire Suppression Rating System, the Building Code Effectiveness Grading Schedule (BCEGS), and any other natural hazard-related rating or regulatory system.
8. Incorporate disaster protection into public and private lifelines, infrastructure and critical facilities.
9. Develop and support programs to increase the public's awareness of natural hazards and ways to reduce or prevent damage through a coordinated effort with multiple stakeholders.
10. Support incorporation of natural hazard awareness and reduction programs in school curricula.
11. Support mitigation training for planners, developers, architects, engineers and surveyors, and County personnel. Encourage participation of government, industry and professional organizations.
12. Identify existing incentives and disincentives for hazard loss reduction actions, and develop and implement new incentives and disincentives.
13. Support the requirement of continuing education of building officials and contractors.
14. Support consistency among projects, programs, and plans in the County that build resilience to the impacts of disasters and climate change, follow "no-regrets" approaches to risk reduction, and reduce risk for everyone, including the visitor populations, in the County.

The draft *County of Kaua’i Multi-Hazard Mitigation and Resilience Plan, 2015 Update* aims to focus efforts on longer term goals of resiliency that ensure that the County will be able to withstand hazards and recover quickly when they occur. The Plan seeks to align with existing County-level plans and initiatives to further its goals, including the Mayor’s *Holo Holo 2020* initiative and the General Plan Update. One of its objectives, with two associated measures, specifically reference the General Plan Update:

Objective 2.5: Align the General Plan update process with disaster risk reduction measures.

Measure: General Plan acknowledges hazard risks and identifies growth and development in areas of least harm or potential disaster impact.

Measure: Review of General Plan for risk reduction relevant plans, policies and measures and incorporation of actions and recommendations.

Given the interest in aligning County-level plans and policies to support resilience, there is an opportunity for the General Plan Update to benefit from this recent work and incorporate relevant information and recommendations into its policies.

9.3 HOW THE 2000 GENERAL PLAN TREATED CLIMATE CHANGE AND NATURAL HAZARDS

The topic of Climate Change and Natural Hazards was not raised in the 2000 GP. The primary source of data for the GP update will come from the County of Kaua'i's *Multi-Hazard Mitigation Plan* and 2014 *Kaua'i Climate Change and Coastal Hazard Assessment*. The 2014 *Kaua'i Climate Change and Coastal Hazard Assessment* report includes specific recommendations and policies that will require CAC and community input.

9.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

Work on climate change and hazard preparedness to be conducted by the GP Team includes:

- 1) Discuss the 2014 *Kaua'i Climate Change and Coastal Hazard Assessment* report with the CAC, and determine how best to incorporate the findings and recommendations into the GP Update. Identify the 2014 *Kaua'i Climate Change and Coastal Hazard Assessment* implications on land use, housing, economic development, infrastructure, and natural resources. Discuss with the County Agencies and others.
- 2) Certain hazards, including tsunami evacuation and inundation areas, will be mapped and included in the GP.
- 3) The General Plan will incorporate information from the 2015 update of the *County of Kaua'i Multi-Hazard Mitigation and Resilience Plan* in its discussions and policies related to natural hazards.
- 4) Once the planning information is available, the *Kaua'i Climate Change and Coastal Hazards Assessment* recommends the County conduct detailed Hazard, Risk, and Vulnerability Assessments incorporating sea level rise impacts, as an adaptation planning step for vulnerable planning areas. Such assessment(s) are outside the scope of the GP Update. It is recommended to include:
 - a) A hazard assessment that identifies the extent, magnitude, and frequency of the hazard. Hazards to consider include: erosion (and accelerated erosion due to SLR as the models become available), wave inundation, flooding (including SLR inundation and groundwater penetration), tsunami inundation and wind;
 - b) A risk and vulnerability assessment that identifies priority community assets' exposure to the hazard, sensitivity to exposure, and ability to cope/adaptive capacity. Such assets should include at a minimum: critical infrastructure, transportation systems, utilities, existing population centers, water supplies and future growth areas. Other community assets to consider include important agricultural lands, sensitive ecosystems, public access/ recreation areas, and cultural resources. This assessment could also identify potential pollutant sources at risk of inundation due to SLR, including waste disposal sites, ocean outfalls and wastewater treatment facilities, as well as aquifers and wells at risk of saltwater intrusion;
 - c) Identifying 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;
 - d) Encouraging strategic retreat and relocation to safer areas based on the results of the assessments above;
 - e) Identifying lands/areas that may serve as buffer from coastal hazards; "growth boundaries" may be used to restrict development from hazard-prone areas.

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10.0 INFRASTRUCTURE AND PUBLIC SERVICES

This Chapter discusses four types of Infrastructure needed for development: Water, Wastewater, Solid Waste and Drainage. Transportation and Energy are typically included under Infrastructure, but they have their own Chapters in this Issues and Opportunities paper.

The 2000 GP was well organized in its discussion of infrastructure and easy to follow. Where available, it provides a description of the existing system, new facilities needed (by 2020), status of long range plans, policies, and implementing actions. This is an excellent format to continue in the update of the GP.



This Chapter of the *Issues and Opportunities* Paper is organized differently than the others in this paper. It looks at the four categories of infrastructure and discusses what was in the 2000 General Plan, what was additional or updated information from the 2015 technical study on *General Plan Update Kaua'i Infrastructure Analysis (2015)* prepared by R.M. Towill.

All subject areas are treated together for Implications for the General Plan Update. This includes discussion on funding sources, including user fees as presented in another technical study, *Infrastructure & Public Facilities Needs Assessment Study* by Group 70 International (August 2014)

The biggest piece of information that is missing is disaggregation of infrastructure data on demand and capacity according to the six planning districts. Potential growth areas need to be justified by the ability of current systems to support buildout together with opportunities for the system to expand to allow for additional growth. The General Plan will need to provide information on the following questions:

- What is the existing capacity in each Planning District?
- What is the demand forecast by Planning District based on population growth scenarios?
- What are the gaps in infrastructure and how might they be filled?
- What are the approaches to prioritizing infrastructure dollars and/or raising new revenues?

10.1 DESCRIPTION OF INFRASTRUCTURE ON KAUA'I

Water

The 2000 General Plan describes that water is supplied by both public and private entities. There are thirteen service areas, each served by a single system or linked sub-systems. The Department of Water, a semi-autonomous agency, supplies water for domestic use and sells water to 300 agriculture users (who independently own and operate their water systems). Private water systems include one in Princeville and one at the Pacific Missile Firing Range.

As of 1999, the Department of Water maintained 52 separate groundwater sources (wells, shafts, and tunnels). It had 46 storage tanks with a capacity of 18.5 million gallons. There were 16 booster pump stations. Average demand was 10.6 MGD with maximum or peak demand of 15.9 MGD. Even at that time (2000) many systems operated at or near capacity and most needed to be expanded. Therefore DOW

placed operational restrictions on requests for new service. Payment of a “Facility Reserve Charge” by a developer would obligate DOW to reserve capacity. One meter is the equivalent of 500 GPD supply, the amount of water needed for a single family dwelling.

The amount of recharge to Kaua’i aquifers was 652 MGD. There was little threat of exceeding sustainable yields. No area was declared a Ground Water Management Area by the State Commission on Water Resource Management (CWRM). The Table below from the 2000 General Plan shows municipal water systems as of 1998.

STATUS OF KAUA’I MUNICIPAL WATER SYSTEMS AS OF 1998

Water System or Sub-System	Water Source Availability¹	Water Storage Availability¹	Current Restrictions²
Kekaha	<i>Near Capacity</i>	Adequate	Large Projects
Waimea	AT CAPACITY	Adequate	1 Meter per Lot
Hanapēpē	AT CAPACITY	Adequate	Large Projects
‘Ele‘ele	Adequate	Adequate	Large Projects
Kalāheo	Adequate	Adequate	----
Lāwai-‘Ōma‘o	Adequate	AT CAPACITY	2 Meters per Lot
Kōloa	Adequate	Adequate	----
Pō‘ipū	Adequate	AT CAPACITY	2 Meters per Lot
Puhi	AT CAPACITY	Adequate	1 Meter per Lot
Līhu‘e-Hanamā‘ulu	AT CAPACITY	Adequate	3 Meters per Lot
Wailuā Homesteads	<i>Near Capacity</i>	Adequate	----
Upper Wailuā	<i>Near Capacity</i>	<i>Near Capacity</i>	2 Meters per Lot
Wailuā-Kapa‘a Hmstds.	Adequate	Adequate	----
Anahola	AT CAPACITY	AT CAPACITY	No Meters Available
Molooa	AT CAPACITY	AT CAPACITY	No Meters Available
Kīlauea, East	<i>Near Capacity</i>	AT CAPACITY	1 Meter per Lot
Kīlauea-Kalihiwai	<i>Near Capacity</i>	AT CAPACITY	5 Meters per Lot
‘Anini	AT CAPACITY	AT CAPACITY	1 Meter per Lot
Hanalei	<i>Near Capacity</i>	Adequate	---
Wainiha-Hā‘ena	<i>Near Capacity</i>	AT CAPACITY	3 Meters per Lot

Lihu'e is the sole area constrained by lack of new groundwater sources. Developers such as Grove Farm have been required to provide water source, transmission and storage as a condition of zoning. Use of surface water would require treatment plants. Expansion in the North Shore requires development of new sources, and improvements to transmission and storage. Princeville Corporation was planning such improvements as of 2000.

Water Use and Development Plans are prepared by Counties as part of the Hawaii Water Plan (required under HRS Chapter 174c). The DOW prepared their Use and Development Plan and it was adopted by CWRM. Water planning mandate is broad and it was speculated in the 2000 General Plan that the County would need funding from the State to complete all required plans. In 1999, a 20-year Master Plan was underway addressing existing and future needs, CIP, capital rehabilitation and a rate study.

Policies and actions for water in the 2000 General Plan focus on completing a long range plan and coordinating it with the GP policies. Compact development was to be given priority along with established agriculture communities.

The latest Water Plan is the Water Plan 2020 (2001) completed shortly after the 2000 GP. It projects to 2050. Currently the DOW has 20,500 customers, 13 service areas. The two private systems at Princeville and the Pacific Missile Range still exist.

Waiahi Water Company, a division of Grove Farms along with DOW developed the Kapaia Reservoir as a water source. In 2005 they opened a water purification plant that draws water through Hanamā'ulu Ditch into a treatment system. The capacity is 3.0 MGD and it serves 15,000 customers. DOW purchases some of this water. Potential upgrades to expand capacity by 60% would cost \$8.13 Million, or \$31.7 Million if they double capacity.

Princeville system provides 1.18 MGD for nearly 1700 residents. This system includes three wells, vertical turbine pumps bringing water to multiple concrete reinforced tanks. It is a gravity-fed distribution system. An additional well and 1.2 MGD will accommodate future demands.

Pacific Missile Range Facility is owned and operated by the US Navy. That system has 0.42 MGD and 185 service connections, all located on base. It serves 1200 people as well as fire protection.

Overall source and storage deficiencies (as of 2006) are provided in the Infrastructure study (see table on the following page).

OVERALL SOURCE AND STORAGE DEFICIENCIES (AS OF 2006)

Water System	Existing Source	Existing Storage Deficiency
Kekaha-Waimea	Yes (143 gpm)	Yes
Hanapēpē-'Ele'ele	No	No
Kalāheo	No	Yes
Lāwa'i-'Ōma'ō	No	Yes
Koloa-Po'ipū	No	Yes
Puhi-Līhu'e-Hanamā'ulu	No	No
Wailuā-Kapa'a	No	Yes
Anahola	Yes (111 gpm)	No
Moloa'a	N/A (no DOW-owned)	Yes
Kilauea-Waipake- Kalihiwai	Yes (93 gpm)	Yes
'Anini	N/A (no DOW-owned)	N/A (no DOW-owned storage)
Hanalei	Yes	Yes
Wainiha-Hā'ena	Yes (67 gpm)	Yes

Source: *General Plan Update Kaua'i Infrastructure Analysis* (2015). RM Towill.

Other issues include the transmission lines. Of the nearly 400 miles, 237 miles were installed between 1921 and 1980. They need replacement due to age, deterioration, or inadequate size. The DOW CIP lists 46 projects totaling \$148 Million; these are broken down by service area. The CIP is 21% for source development, 23% for storage, and 20% for transmission deficiencies. Capacity increases are assumed to be addressed as deficiencies are replaced.

Part of the gap in information is in regard to the CIP Phases 1 and 2 are already in the past, but what happened? The DOW states it will prepare the 2040 Water Plan after the Kaua'i General Plan is updated, so it is unlikely that updated information will be available for this GP update.

Wastewater

Kaua'i has two types of wastewater service: County sewer and Individual Wastewater Systems (IWS) such as cesspools and septic tank systems. Both are regulated by the State Department of Health. The 2000 General Plan noted there were no environmental threats due to waste disposal. Those systems that fail or experience problems use commercial pumping.

The municipal system has existing capacity, but it is already reserved. See the table on the next page.

STATUS OF MUNICIPAL WASTEWATER SYSTEMS ON KAUA'I

Waimea	Waimea	Was .3 MGD/ Now .7 MGD	R-1	At full capacity Does not serve Kekaha
'Ele'ele	Hanapēpē, 'Ele'ele, Port Allen	.8 MGD	R-2	At half capacity Needs to expand to Hanapepe
Līhu'e	Properties along Kapule Highway, Kūhiō Highway, Ahukini Rd and Rice St.	2.5 MGD	R-1	At half capacity Funding needed for collection and transmission systems
Wailuā	Kapa'a, Palaloa, Waipouli, Wailua	1.5 MGD	R-2	At half capacity Needs collection system

There were over 300 private sewer treatment plants, many at hotels and for master planned communities. Some complexes operate package treatment plants. All other areas have IWSs. Department of Health regulations now require septic tank systems and treatment for any project over fifty units. The trend has been for developers to solve their wastewater needs, and not rely on the municipal systems.

The 1993 *Water Quality Management Plan* discusses the need for regional systems in Koloa Town and in Poipu to avoid ocean pollution. The DPW had no plans for future plant expansion. The 2000 GP provided an assessment of wastewater needs, area by area. Pursuit of strategic opportunities and priorities is recommended until a more comprehensive plan is prepared

Policies focus on collection to safeguard the public health; re-use of effluent for irrigation, and using graywater. The plan calls for addressing use of unused capacity by preparing a long range wastewater policy plan which is to be updated every five years.

Much has changed from the 2000 General Plan. The details of those changes are well described in the 2015 *Kaua'i Infrastructure Analysis*. The major caveat to that statement is that, the facility service plans only go to either year 2020 or 2025, not 2035, which is the forecast year for the update General Plan.

The four municipal wastewater systems were all constructed in the 1970s. They consist of gravity flow pipelines, manholes, pump stations, force mains and the treatment plant.

- The Waimea WWTP was recently upgraded to R-1 Moving Bed Biofilm Reactor facility with a design capacity of .7 MGD. Due to the upgrade, there are no major equipment deficiencies. The next phase of improvements will upgrade the distribution system and expand the Kekaha sewer system.
- Eleele WWTP utilizes an activated sludge process for the .6 MGD daily flow (capacity is .8 MGD). Plans are to modify and expand the facility by year 2025. The expansion would allow daily treatment flow to 1.2 MGD. Deficiencies include lack of a backup power generator, lack of explosion proof conduits, and other power needs.

- Lihue WWTP near the airport is operating at half capacity. Deficiencies include the need to replace the gas chlorination system, bio-filter re-circulation pump, and the aeration system. In addition, the Haleko Pump Station should be replaced and sewer lines added for Ulu Mahi/Pua Loke, for Nāwiliwili/Kupolo, and for Kapaia.
- Wailua WWTP has a design flow of 1.5 MGD but actual capacity is 1.0 MGD. The head works facility does not work properly and needs replacement. The Rapid Bloc Activated Sludge system does not work and needs replacement. A new pump station is needed and the collection system should be extended.

The four municipal WWTP each have service plans to the year 2020 or 2025. These will need to be updated following the General Plan completion and taken to 2035. The Planning District aggregation needs to be matched with development assumptions for growth.

Upgrade and renovation costs have been estimated for short term, mid term, and long term. They include:

Waimea: \$36.8 Million for long term

‘Ele‘ele: \$15.2 Million to expand to 1.2 MGD; or \$26.2 Million to expand to 5.37 MGD and include Hawaiian Homelands areas

Wailuā: Mid Term \$15.2 Million to expand to 1.5 MGD; \$14.5 Million to expand to 2.0 OR \$26 Million to add a second plant.

Līhu‘e: Short term \$22.3 Million to upgrade to R-1; Mid Term \$7.6 Million to replace Haleko pump station; Long Term \$35.6 Million

There are five privately owned WWTP plants. The WWTP in large master planned communities are operating properly with a combined total capacity of over 4 MGD, nearly equaling the municipal capacity. They use a variety of treatment methods and often use the effluent for golf course irrigation.

- The Puhi Sewer and Water Company is owned by Grove Farm and provides wastewater treatment to Kukui Grove, Puakea, and Puhi, It has a single treatment plant of 1.0 MGD.
- Pacific Missile Range Facility has two wastewater treatment plants.
- Kaua‘i Beach Resorts has one wastewater treatment plant
- Princeville has one to service the hotel, shopping, golf course, and residences
- Po‘ipū has one, built in 1981 and expanded in 2004. Its effluent is used to irrigate Kiahuna Golf Course and Koloa Landing Resort.

WASTEWATER TREATMENT PLANTS ON KAUA‘I

Treatment Plant	Ownership	Design Capacity	Effluent Quality
Puhi	Grove Farm	1.0 mgd	R-1
Pacific Missile Range Facility (PMRF)	U.S. Navy	North end: 7,500 gpd South end: 10,000 gpd	Secondary
Kaua‘i Beach Resort Assoc. (KBRA)	KBRA	0.1 mgd	Secondary
Princeville	Princeville	1.5 mgd	R-2
Po‘ipū	HOH Utilities, LLC	0.8 mgd	R-1

There are over 5,000 IWS/cesspools on Kaua'i and it is estimated that 12% are failing. The ultimate goal is to eliminate IWS and create connections to treatment plants. Wailuā-Kapa'a is an area of serious concern: approximately 4300 residences have cesspools which are no longer allowed by DOH. The recommendation is to expand the Wailua WWTP to 2.0 MGD. Beyond that, a second WWTP will be needed.

IWS AREAS

- Kupolo (Lihue)
- Ulu Mahi (Lihue)
- Pockets of Lihue
- Hanapēpē Heights
- Portions of Kekaha
- Portions of Kapa'a near Wailuā
- Ag and rural mauka of 'Ele'ele
- Wailuā to Kapa'a

Drainage

The 2000 General Plan lacks a discussion of the drainage system and does not evaluate what facilities will be needed by the 2020 projection year.

Drainage policies are included, and these are related to policies on watershed protection and water quality. The County managed urban stormwater runoff through Drainage Standards applied to new developments by DPW. They also must deal with upland runoff from conservation and agriculture lands. Flood hazards are managed by the Flood Control Ordinance based on FEMA maps. While the 1984 General Plan and the CZO both require a Drainage Master Plan, none existed by 2000. Unwritten policy is to avoid concrete-lined channels.

Drainage problems were described in Wailua-Kapa'a, Nāwiliwili, and Po'ipū. DPW planned to focus on specific areas rather than prepare a Master Plan. Policies call for limiting development on steep slopes or shoreline land in flood hazard areas, to focus on most heavily impacted urban watersheds, to use BMP to control nonpoint source pollution, and to follow certain principles for drainage improvement. Implementing actions called for the Planning Department to revise the Subdivision Ordinance and CZO and for DPW to identify critical watersheds for Drainage Plans.

The R.M. Towill *General Plan Update Kaua'i Infrastructure Analysis* (2015) provides updated information on drainage since the 2000 General Plan. FEMA has revised the Kaua'i County Flood Insurance Study (FIS) to update base flood elevations, floodways, special flood hazard areas, and zone designations. Tsunami inundation was re-studied for the entire coastline. FEMA studies flooding sources in eight watersheds

Flooding problems were of three types: stream overflow, tsunami, and hurricanes. Stream overflow is generally caused by debris, flash flooding, stream patterns, or inadequate or altered drainage facilities. Specific problem areas include:

- Hanalei River: overflow onto Kūhiō Highway
- Anahola Stream: which becomes restricted by a natural sandbar
- Kapa'a Stream: tsunami and flooding (none documented since Moikeha and Waieka Canals were built)
- Wailua: channel capacity exceeded
- Lihue: Flooding on Pū'ali and Nāwiliwili Streams due in part to sand buildup and debris accumulation
- Koloa: low lying topography, debris and overgrowth of Waikomo Stream
- Hanapēpē: Low lying areas behind the levees are prone to flooding
- West Kaua'i: Flooding aggravated by sand plugs
- Wainiha: low lying areas, high surf and flash floods

Waimea: levee system improved the town area, but the low lying areas experiences more damage when the flood gates caused over-flow to the interior areas.

Kaua'i has few flood control structures. Those that exist are mostly levees built by the Corps of Engineers in Hanapēpē, Waimea and Kapa'a. Reservoirs are used for irrigation. These provide storage capacity, but do little to protect against flooding downstream. There is still no Drainage Master Plan for the island.

The 2006 County Code defines standards and requirements for new development storm drainage infrastructure. Guidelines are to:

- Protect and preserve existing natural channels
- Protect from flood hazards
- Remove water without causing harm to the environment, property, or persons
- Reduce Pollutants and sediments
- Maintain peak runoff rates and volume at no more than current rates
- Protect wetlands

Solid Waste

The County provides direct service island-wide by collecting solid waste and operating reuse and disposal facilities. This is administered by the Road Construction and Maintenance Division of DPW.

Kekaha Landfill Phase II opened in 1993 after Phase I reached capacity and closed. It handles 67,000 tons of solid waste. There are refuse transfer stations in Hanalei, Kapa'a, Līhu'e, and Hanapēpē. There are six drop-off recycling centers and three green waste diversion sites, plus several Neighborhood recycling programs. Waste generation was expected to grow 50% by 2020. Kekaha Phase II extended its lifespan by increasing to sixty feet and again in 2005 to 85 feet. A new landfill site needed to be located and developed. New transfer station was needed in Kapa'a.

The 1994 *Integrated Solid Waste Management Plan* (ISWMP) fulfills state requirements. Updates are required every five years. The focus is upon source reduction and reuse through recycling, education and public information. There was an identified need for a proactive process for siting and designing sanitary landfills and facilities.

The ISWMP was updated in 2004 and its principle features are described below. It is the policy document for program, activities and facilities for waste disposal. It is supported by complementary plans for a Central Composting Facility, Subside Recycling report, and the Kaua'i Resource Recovery Park Feasibility Study. The County is conducting site studies for the Resource Recovery Park. They have identified the Resource Recovery Park as critical to waste management strategies, a one-stop service center. This could be co-located with a new landfill.

Overall objectives are to maximize recovery and minimize waste going into landfills. The current diversion rate is approximately 31%. County resolution has a diversion goal of 70% by 2013. The County has a multipronged approach:

- Recycling and waste disposal for residents (who represent 45% of waste generation)
- Non-residential waste is handled using private contractors.
- Kaua'i Resource Center and eight decentralized recycling bins are operated and maintained by private contractors under contract to the County
- Kekaha Municipal Solid Waste Landfill is operated by Waste Management, Inc. under contract to the County
- Curbside collection to 31, 297 accounts. Waste from residents goes to the transfer stations where it is compacted and then sent to the landfill. Collection transitioned to automated in 2010.

- Green waste at four transfer stations (in 2011, came to 18,740 tons)
- Special wastes (tires and batteries, asbestos, white goods, medical waste, cooking oils, dead animals, construction materials, in general these are collected and shipped to Oahu or the mainland for disposal.
- Hazardous waste (paints, solvents) annual collection day done by contract
- Electronics preference is manufacturer take back programs; but will collect.

After two vertical expansions, in 2010 Kaua'i Landfill constructed a lateral expansion (Cell #1). Cell 2 is in the permitting process. The current peak waste is 75,000 tons of solid waste per year. Both lateral and vertical expansion of the three cells is needed. Once capacity is reached, the landfill will start to be close and capped, estimated to be within 7-10 years. Consequently, the County is in site selection and environmental review for a new Kaua'i Landfill and Resource Recovery Park, ideally in Lihue due to its central location. Site location has been challenging and the EA/EIS is underway. Currently, the highest ranked site is along Maalo Road. Alternate disposal technologies are being studied, including bio-refinery, landfill gas to energy, waste to energy, and waste to fuel.

As a matter of policy, reduction and re-use are encouraged in all aspects of local life. Home composting, re-use programs, education, recyclable bags and packaging are all employed. As of FY 2011, the Kaua'i Recyclable drop-in bin gathered 1.640 tons and the private collector an addition 1,080 tons. Since 2005 the HI-5 bottling redemption centers have been in operation, in FY 2011 they collected 2730 tons. Based on results of a 2011 pilot program, the County intends to move to island-wide recycling collection once a Resource Recovery Facility is available.

The ISWMP uses higher population projections than the SMS projections for the 2035 General Plan. This should not create any problem. Waste generation is fairly constant at 6.7 pounds per day per person. When applied to the 2035 de facto population this comes to 58,049 tons per year residents and an additional 131,953 tons for commercial, a 17% increase over 2020.

The R.M. Towill *General Plan Update Kaua'i Infrastructure Analysis* (2015) recommends three policies and five implementing actions for the General Plan. These will all be considered.

10.2 ISSUES AND OPPORTUNITIES

There is ample data in the technical studies for the General Plan to work with for Solid Waste and for Wastewater, although the forecast years for both fall short of what is needed. Infrastructure has the full attention of the administration and Council which is helpful but also generates disagreements about philosophy and approach.

The data needed for Water is insufficient to do what is needed in the General Plan. Same for Drainage which has little data to use for General Plan purposes.

Financing estimates for improvements is inconsistent and difficult to aggregate as a result. A methodology to help inform priorities in implementing actions needs to be devised. A separate technical paper was prepared by Group 70 International to identify existing sources of revenue for infrastructure and to explore the opportunities for new sources to provide upgrades, new facilities, and improvements.

Federal sources:

- Coastal Zone Management
- Certified Local Government
- Discretionary grants
- USDA: Community Facilities Development Grant for rural communities
- USDA Rural Development
- EPA Clean Water Revolving Fund (for septic wastewater projects)
- EPA Nonpoint source Section 319
- US Economic Development Administration

State sources:

- Grants

County sources:

- County General Funds and Bond Finance
- Real Property Tax
- User Fees
- Impact Fees

The County has retained EPS to assist in identifying strategies to incentivize infill development. Rather than converting agricultural lands and open spaces to suburban housing developments, infill can address affordability issues and preserve the natural character of the island. Strategies include infrastructure financing programs, incentive zoning, use of public properties, and other methods. EPS will evaluate the "Return on Investment" for various initiatives, and will provide a training session for County staff and officials regarding best practices and recommendations for applying those in Kaua'i's unique circumstances.

10.3 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

For now, there are many questions about infrastructure that go beyond the ability of the GP to fill the gaps. SSFM will prepare for the County consideration a proposal for how to fill the most pressing gaps so as to provide the best informed policy debate and means for setting priorities of scarce funding. The basic block for this will be to disaggregate it by Planning District and match it up with the demographic forecasts.

Disaggregation by Planning District

How do the service areas line up with the district service boundaries?

For water, Are rural areas to be served by wells only?

For wastewater, Are septic systems the only system to be expected in rural areas?

Deficiencies in the major systems. How this compares to forecasted growth by district.

Can the Facility Reserve Charge adequately support needs of the water system?

Is it realistic to assume all developers can provide source, storage, and transmission of water, and if not, does this give unfair advantage to the large landowners?

What are the issues related to siting a new landfill now that Kekaha II is at capacity?

In addition, there is inconsistent information about the costs of various upgrades, replacements and new facilities among the four infrastructure areas. This will make it difficult to have a complete assessment of the cost of growth or adherence to environmental goals. A process for reconciling this will have to be developed.

Policies

Define a process for setting priorities in public infrastructure investments.

Should there be growth allocation policies according to how infrastructure can support it, or vice versa.

Should infrastructure priorities be given if a project provides housing or jobs?

Define the requirements for privately provided infrastructure.

Do concurrency policies discourage infill? Do they unwittingly incentivize greenfields over in-fill?

Funding for Infrastructure

The Infrastructure and Public Facilities Needs Assessment Report provides information pertinent to an impact fee approach. But that does not cover all the needs, nor does it cover all users. Funding needs to be discussed in parallel with the above issues on disaggregation, deficiencies, and policies.

10.4 RESOURCES

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11.0 MULTIMODAL LAND TRANSPORTATION

11.1 DEFINING THE ISSUES

Kaua'i 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 County has undertaken planning efforts and identified projects to reduce the demand pressure on the island's roadways, however, the reality is that the list of potential projects far exceeds the potential sources of funding. The island has had to make tough choices that sometimes result in a scaling back of projects that support multimodal transportation. These planning efforts and challenges are further elaborated upon in this section.



Building on the vision found in the 2000 GP and with the adoption of the *Kaua'i Multimodal Land Transportation Plan (MLTP)* in 2012, all land modes are in consideration – motor vehicle travel, transit, bicycle, and pedestrian. The multimodal plan reviews existing conditions and trends and examines forecasts and future scenarios. It also discusses how land use relates to transportation.

Quoting from the 2000 General Plan, the concept even then was for:

“Multi Modal Options. Safe bicycle and pedestrian routes have been provided. State and county agencies have adopted ‘flexible highway design,’ in order to enhance scenic and historic qualities and to strike a balance flow of automobile traffic and safe facilities for buses, bicycles and pedestrians. Increased public parking and pedestrian friendly improvements to sidewalks and streets have been implemented in Lihu'e and Kaua'i's other historic small towns.”

This simple but profound concept (having walkable and bike-able compact communities; helping historic towns retain their small friendly character) remains valid and was incorporated into the work of both the Lihu'e and South Kaua'i Community Plans which were updated and adopted in 2015.

The MLTP has eight goals for 2020 and 2035, along with over forty objectives. They address balance, flexibility, choice in the system along with good design, improvements to public health, less dependence on imported petroleum for fuel, and keeping the system in good repair. But the most ambitious are embedded in the “preferred scenario assumptions”:

Preferred Scenario Mode Shares (from MLTP)			
	2010	2020	2030
Single occupant	54.4%	49.2%	39.4%
Multiple occupant	38.7%	38.3%	37.9%
Transit	0.4%	1.3%	3.6%
Walk	4.5%	7.6%	11.5%
Bicycle	2.0%	3.6%	7.6%

- Total island-wide VMT will remain at 2010 levels
- Fatality rates from vehicle collision reduced by 10% by 2020 and 15% by 2035
- Increase physical activity levels by 14% by 2020 and 31% by 2035.

This translates to VMT at 771.5 thousand vehicle miles travelled through 2035, despite population increases. This is proposed to be accomplished through “mode shift”, or shifting some trips from single occupancy vehicle to transit, bicycle and pedestrian trips. Statistics for the last several years show that county-wide VMT increasing between 2011 and 2013, but then decreasing substantially from 2013 to 2014. This trend is mirrored at the State level. Several factors that may contribute to continued decrease or stabilization of VMT include several bicycle and pedestrian infrastructure projects in design and construction, recent approval of the South Kaua’i and Līhu‘e Community Plans, both of which encourage compact walkable neighborhoods). Nonetheless, it is clear that realizing the long-term goals of the plan will require significant infrastructure investment and changes to growth patterns supported by land use policies.

The Federal-Aid Highways 2035 Transportation Plan for the District of Kaua’i (LRTP) was completed by the State Department of Transportation Highways Division in July 2014. The LRTP takes a different approach than the MLTP. Rather than considering mode shift, the plan assumes that current mode split will remain constant through 2035, so that VMT will grow proportionally with population. The results of this approach are numerous capacity projects to address existing and projected future congestion. One problem with this approach is that demand for additional lane miles far exceeds anticipated financial resources to pay for construction and long-term maintenance of an expanded roadway system. Based on historical funding and projected cost estimates, the LRTP proposes \$3.1 billion in projects but anticipates only \$630 million in funding over the life of the plan. Given that the list of potential transportation projects far exceeds potential funding, it is critical that Kaua’i establish priorities and make smart transportation investments. The LRTP makes it clear that while new roadway projects may be part of the future, it will not be feasible to build our way out of future growth and congestion. Based on similar findings and limited funding nationwide, it is both a national and state trend to shift the focus of transportation projects to congestion reduction and system preservation instead of major capacity projects.

The MLTP is a policy-level document. While there are specific implementation steps, it does not identify specific infrastructure projects. At this time, it is not known what specific set of investments would create what amount of mode shift over what period of time. The Transportation Agency has been tasked with identifying a program for advancing its operations in a logical and cost effective manner.

System Preservation	\$315 Million
Safety	\$595 Million
Capacity (non-constrained)	\$2.1 Billion
Congestion	\$57 Million
Other	\$10 Million
TOTAL	\$3.1 Billion

Kaua’i adopted a Complete Streets ordinance in 2010. Since then, the first complete streets project was constructed on Hardy Street. It adds sidewalks, bike lanes, landscaping, and an urban roundabout in the heart of Līhu‘e. Additional complete streets projects and Safe Routes to School projects are advancing.

Kaua’i Bus is operated by the County Transportation Agency. It is funded in part by the Federal Transit Agency (for capital expenditures such as vehicles and maintenance facility), from \$2.00 fares (14% fare box recovery), and from County subsidy (64% of total cost). There are eight fixed-route lines plus paratransit service. Mainline routes provide regional trips while shuttles provide localized trips. In 2012, there were 2,500 daily riders (75,000 monthly). The fleet was 43 buses, all wheelchair accessible and with bicycle racks. The total budget in 2012 was \$7.4 million.

The county has been regularly installing passenger amenities such as bus shelters at stops, adding wi-fi, transit tracker and information, increased frequencies and hours of service, park and ride lots and purchasing larger buses.

Separate from the Kaua'i Bus, the Office of Economic Development initiated a pilot North Shore shuttle project connecting from Princeville to Kē'ē Beach, with the intent of reducing traffic and parking demand, especially in the vicinity of Hā'ena State Park. The pilot began in 2014 and ended in 2015. While the pilot was focused on visitors, nearly half of the riders were local residents. The Po'ipū Beach Resort Association also initiated a pilot shuttle in Po'ipū, funded entirely by resort association members. Both pilots were ended due to a lack of long-term funding streams. The County has initiated a study of north shore/south shore/east side shuttle and transit services to determine a long-term, sustainable approach to expand transit service with local circulators. The traffic along the highway throughout Kapa'a is one of the community's biggest concerns. The 2000 GP included assumptions regarding the permanent relief route that are no longer valid. The Kapa'a Transportation Solutions study is intended to provide relief to the traffic congestion. The sources of funding and operations system are not yet known.

11.2 OPPORTUNITIES

Set priorities. The County of Kaua'i has a clearer focus than other municipalities for what it wants to accomplish, for example for bike facility projects and certain roadway improvements that support land use goals and smart growth principles such as complete streets. When discretionary Federal funds come available (such as Tiger Grants) or Federal funds released from other projects, then Kaua'i can act quickly to put together their applications with supporting materials. The County is also well-positioned to incorporate multi-modal facilities into traditional roadway resurfacing and reconstruction projects funded with both County and Federal funds.

Transit studies in progress (The North Shore/South Shore Transit Feasibility Study and a Short-Range Transit Plan) provide ongoing analysis, review and potential justification for setting priorities, and for preparing requisite transportation and environmental impact documents that are part of project delivery. Both the Līhu'e and South Kaua'i Community Plans include lists of bicycle, pedestrian, and transit improvements that meet the aims of each Planning District and support walkable towns and neighborhoods. These can be implemented individually or in groups.

New funding sources. The County has a window of opportunity to raise funds from the general excise tax for funding transportation projects. This relatively unrestricted source was made possible by the 2015 State Legislature when it extended the GET surtax for Honolulu's rail system with a provision that re-opened the opportunity for other counties to also use the GET surtax. The window is short, and must be enacted by ordinance before June 2016.

The LRTP also lists a dozen other new sources of revenue for the County (or State) to consider for transportation projects. Any tax is a battle, but if the County is to realize any of its ambitious goals for mode shift, then it is likely that one or more must be seriously considered.

The 2014 (*Draft*) *Infrastructure & Public Facilities Needs Assessment Study* prepared as a technical study for the General Plan calculates daily trip generation using ITS Land Use definitions and trip factors. The bottom line conclusion from that study is that there will continue to be increases in volumes with resulting increases in congestion. The study suggests that impact fees could be collected for multimodal facilities as shown in the table on the next page.

Project	Total Estimated Construction Cost	Impact Fee Eligible
Līhu'e Civic Center Site Improvements*	\$20,150,000	Yes
Lima Ola Workforce Housing Development – Offsite Infrastructure*	\$3,766,000	Yes
Puhi Road Resurfacing	\$1,217,000	Maybe
Kawaihau Road Safety Improvements	\$5,000,000	Yes
Pu'u Road Safety Improvements	\$400,000	Maybe
Kanaele Road Repairs	\$2,500,000	Maybe
'Ōpaeka'a Bridge	\$6,000,000	Maybe
Pu'u'opae Bridge	\$5,000,000	Maybe
Hanapēpē Road Resurfacing*	\$2,500,000	Yes
Kōloa Guard Rails	\$1,070,000	Maybe
Kapahi Bridge	\$5,600,000	Maybe
Līhu'e-Hanamā'ulu Mauka Bypass Road	\$40,000,000	Yes
'Anini Bridge Replacement	\$1,500,000	Maybe
Northerly Leg Western Bypass Road	\$19,550,000	Yes
Bus Stop Improvements*	\$1,200,000	Yes
Pouli Road*	\$6,000,000	Yes
Kīlauea Town Bypass Road*	\$6,000,000	Yes
Total	\$131,953,000	\$104,166,000**

Source: Kaua'i County Six-Year Capital Improvements Program (CIP), FY 2013/14 – 2018/19

*The County indicated these projects are not yet in the CIP, but will be added in the future.

**Total does not include projects listed as "Maybe"

11.3 HOW THE 2000 GENERAL PLAN TREATED MULTIMODAL LAND TRANSPORTATION

Transportation discussions in the 2000 GP were based on the high end projections; that is, they assumed a 74,300 resident population (by 2020) and a daily visitor census of 28,000. These numbers are not that far off from the numbers now being projected for 2035 in the GP update underway. Thus, whether one is speaking of vehicle trips or person trips, the demand is in a range of about 10-15% of what it was fifteen years ago. What has changed is how one considers those trips. In particular, what is needed for longer trips to be taken in buses, and for shorter trips to be taken on foot or by bicycle.

Highways and Roads, Bus Transit, and Bikeways were handled under "Building Public Facilities and Services." There was no discussion of the Walk Mode. This, in itself is a significant change to current

thinking which focuses on compact, walkable communities and a conscious shift in mode to non-vehicular alternatives.

Highways were described as two-lane roads connecting major developed areas. Kaumuali'i Highway (Route 50) runs south and west, while Kūhiō Highway runs north to east; Līhu'e is the hub where these connect. Kūhiō, Kaumuali'i, and Kapule Highways (built as a Līhu'e Bypass) were congested especially at peak times, and the State Department of Transportation was trending towards 4 lane divided highways or three lane sections. A temporary bypass mauka of Kūhiō Highway was built in 1995 using private cane haul roads.

Road conditions were described as level D, E, or F for average daily traffic. Poor conditions in Kapa'a Town and in parts of Līhu'e were noted. Calls for curing deficiencies included widening Kaumuali'i from Līhu'e to Maluhia and a permanent Kapa'a Bypass. The twenty year list of capacity improvements exceeded \$300 Million.

Bus transit at the time included six routes (there are now eight) and a paratransit system from Hanalei to Kekaha. This involved 30 buses (versus current 43) averaging 18,120 riders per month (there has been a four-fold increase). The transit policy was to increase ridership and expand service **subject to the availability of funds** (emphasis added).

The Bike section describes having 3.8 miles consisting of bikeways along Kapule Highway in Līhu'e and a bike path along the coast fronting Kapa'a Beach Park. The State Bike Plan (1994) proposed another 173 miles of bikeways island-wide, about two-thirds to be completed by the State and the balance by the County. Total costs were projected at \$40 million. The bicycle policy was to support development of a bikeway system to provide an alternative means of transportation, recreation, and visitor activities. A check of the current system shows little has changed (unfortunately).

11.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROECCESS

Work on transportation to be conducted by the GP Team includes:

- 1) Update current use data on bicycles and vehicles.
- 2) Incorporate the policies from the MLTP into the appropriate section(s) of the updated General Plan.
- 3) Incorporate data from studies currently in progress that calculate the amount of tax that would be derived from a GET surcharge and provide policy guidance for types of projects to receive priority for this new source of revenue for transportation.
- 4) Review tracking results for the goals of the MLTP. Identify and add discussions for what would it take to achieve them. Determine how these goals support (or not) other goals in the General Plan. For example, how do the walk and bicycle goals fit with the land use and compact community goals; and also, how do mobility goals fit with tourism goals.
- 5) Meet with the Kaua'i Transportation Agency to determine what was completed from the immediate (1-3 years) implementation phase of the MLTP as well as the likelihood for those in the mid-Range (through 2020), or any re-direction identified.
- 6) Update the latest measures for VMT and mode share. Engage Jim Charlier, transportation subconsultant and author of the MLTP, in a discussion on recommendations for how to handle policy coordination and eliminating discrepancies in the General Plan transportation policies.
- 7) Review the Land Use Program recommendations in the MLTP to identify how the General Plan policies can support and complement them and therefore help to guide future Community Plans, including transportation components that should be included in future Community Plans.

- 8) Identify future plans/studies that should be completed, such as an islandwide bicycle/pedestrian plan.
- 9) With limited funding for transportation projects, identify the need to establish transportation priorities based on goals.

11.5 RESOURCES

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12.0 ENERGY

12.1 DEFINING THE ISSUES

In 2013, Kaua'i's residents and businesses spent \$92 million on imported oil, accounting for 85% of Kaua'i's electricity use. The high cost of energy negatively impacts average household budgets, and contributes to the high cost of living on Kaua'i. Use of imported fossil fuels for energy results in an outflow of money from the local economy. Furthermore, the burning of fossil fuels degrades air quality and contributes to environmental and social problems on a global scale.



The majority of Kaua'i's electricity is generated at the diesel-fired power plant located at Port Allen. As reported in 2013, 15% of Kaua'i's electricity comes from renewable resources (primarily hydropower and solar resources). Renewables continue to demonstrate increasingly better financial and environmental returns, and their use is growing rapidly.

Kaua'i Island Utility Cooperative Board of Directors adopted an ambitious goal to use renewable resources to generate at least 50% of Kaua'i's energy by 2023. This goal exceeds the requirements established by Act 234, the 2007 law establishing the framework to reduce greenhouse gas emissions emitted in 2020 to the 1990 emission level. It also surpasses the requirements set by Act 73 in 2010, the Hawai'i Clean Energy Initiative, which calls for 70% clean energy by 2030, with 40% of that amount coming from renewable sources and the remaining 30 percent from energy efficiency improvements. KIUC is making rapid progress toward its goal, with renewables accounting for 15% of sales today, up from 5% in 2008. By 2015, renewable generation is projected to be at 42%, with a mix that includes solar, biomass and hydropower (KIUC 2013-2015 Strategic Plan).

Kaua'i has several projects that have been identified as "Hawaii's Clean Energy Leaders" by the Department of Business, Economic Development and Tourism's State Energy Office (last updated in 2012). These projects include:

- Green Energy Agricultural Biomass-to-Energy Facility / Green Energy Team, LLC (Biomass) Locally grown eucalyptus, albizia, and other agricultural waste will be used as biomass fuel to generate enough renewable electricity to power 8,500 Kaua'i households. 6.7 MW
- Port Allen Solar Facility / A&B, McBryde, KIUC (Photovoltaic) This PV array is built on 20 acres of industrial land adjacent to KIUC's Port Allen Station Power Plant. The facility is integrated into a planned battery storage system installed by KIUC. Partners include Hoku Solar and Helix Electric. 6 MW
- Po'ipū Solar / AES, KIUC, Knudsen Trust (Photovoltaic) This PV array to be built on Knudsen Trust Land will power 800 homes on Kaua'i. The facility will be connected to a battery storage system at the point of interconnection to the KIUC grid. 3 MW
- Anahola Solar / Homestead Community Development Corporation, REC Solar, KIUC (Photovoltaic) Developed by REC Solar, the project was undertaken by the Homestead

Community Development Corporation in partnership with KIUC on 53 acres of land owned by the Department of Hawaiian Home Lands. 12 MW

- Kālepa Water Project / KIUC (Hydroelectric) A dual purpose irrigation and hydroelectric project with a capacity of 4.0 MW and an estimated annual production of 15.2 GWh. The proposed project would utilize water from the existing Wailuā Reservoir and the South Fork Wailuā River. 4 MW
- Puu Opaē Water Project / KIUC (Hydroelectric) A dual purpose irrigation and hydroelectric project with a capacity of 8.3 MW and an estimated annual production of 40 GWh. The proposed project would utilize water from the existing Kokee Ditch Irrigation System, provide irrigation water for DHHL lands and ADC lands, and integrate with existing irrigation users. 8.3 MW
- Hanalei River Hydroelectric Project / KIUC (Hydroelectric) A small run-of-river hydroelectric project with a capacity of 3.0 MW and an estimated annual production of 14.5 GWh. The proposed project would involve diverting water from the Hanalei River to a new powerhouse located about 3.5 miles upstream of the Hanalei Bridge. 3 MW
- Puu Lua Hydropower Project /Pacific Light & Power, Konohiki Hydro Power (Hydroelectric) The Kokee Ditch will serve as the source for a modern, efficient pressurized irrigation system that will service over 6,000 acres of agricultural lands. Power generated at the Upper and Lower Puu Lua hydro plants will be sold to the Kekaha Agricultural Association and its members, with excess made available to the island of Kaua'i. 5.3 MW
- Kekaha Menehune Water Project /KIUC (Hydroelectric) A dual purpose irrigation and hydroelectric project with a capacity of 1.5 MW and an estimated annual production of 6.5 GWh. The proposed project would utilize water from the existing Kekaha Ditch Irrigation System for generation and to provide water and repairs for the Menehune Ditch. 1.5 MW
- Anahola Water Project / KIUC (Hydroelectric) A dual purpose irrigation and hydro project with a capacity of 300 kWh and an estimated annual production of 1.25 GWh. The proposed project would utilize the existing Upper Anahola Diversion and a rehabilitated reservoir, and provide irrigation water for DHHL lands in Anahola. 300 kW
- Olokele River Hydroelectric Project /Gay & Robinson, KIUC (Hydroelectric) The proposed Olokele River Hydropower Project will have a 6 MW capacity. 6 MW

Energy use and supply are linked to strategies and policies for land uses, development, building sizes, architectural design, transportation planning, environmental protection, air quality and economic development. Land use and permitting implications for particular renewables are as follows:

- Solar-electric: Building code regulations govern the location of panels on buildings and on the ground; ability to connect into the electrical grid and compensation for electricity generated. Smart grid technologies, including new meters that can be read and adjusted remotely, help KIUC manage and monitor its grid more efficiently. The intelligent grid and improved connections between energy generators and users.
- Wind: Land use codes govern the installation of wind turbines. While wind resources are plentiful and wind developers have explored opportunities on the island, their development is limited due to the risk of impacts to endangered and threatened species. The risk of violations under the Endangered Species Act have outweighed wind energy's potential returns on Kaua'i. Kaua'i has a high number of protected seabirds that are sensitive to lights and collisions with above ground structures. There has also been community opposition to noise and visual impacts associated with wind. Consequently, KIUC's and the *Kaua'i Energy Sustainability Plan's* stated position is that wind energy is not viable for Kaua'i at this time.

- **Hydropower:** On the west side are the two projects that are most viable for future KIUC hydro development. Both are on state land, with one using water from the Kōke'e Ditch and Pu'u Opae Reservoir, and the second using water from the Kekaha Ditch. A 4-megawatt project on the Wailuā River is also feasible technically and financially. While hydro energy is capital intensive, it is the lowest cost of power – 25 percent cheaper than solar/PV and about 30 percent cheaper all in than the cost of fossil fuel generation. Hydro energy requires Federal approvals to minimize and mitigate potential aesthetic impacts, cultural impacts and interests pertaining to maintaining waterways for agricultural, fishing, hunting, recreational, and tourism purposes.
- **Pumped storage:** Pumped storage is essentially a huge battery that stores water instead of electrons. It can use solar power to inexpensively pump water uphill to a storage pond during the day, then reuse the same water at night to turn a turbine and create electricity. KIUC is in discussions with the state Department of Land and Natural Resources (DLNR), the state Agribusiness Development Corporation (ADC) and the Department of Hawaiian Home Lands, which manage the two areas under consideration for pumped storage projects on the west side.
- **Ocean energy:** Ocean energy projects would be initiated by the State, and would require NEPA and SMA permits, at minimum.
- **Biomass:** Plants require sufficient quantities of land which are zoned or used for agricultural purposes and have water. The biomass-to-energy facility near Kōloa is fueled by biomass from several sources, including short-rotation trees grown on about 2,000 acres and cleared invasive tree species.
- **Landfill Biogas:** The County has allocated funds in its FY 2016 budget for construction of a biogas collection system at the Kekaha Landfill. Assuming the captured methane meets quality and quantity benchmarks, the next phase will be to construct a system to refine the methane into Compressed Natural Gas (CNG) that can be used to power Kaua'i County's public bus fleet. Previously completed studies have indicated that selling the gas to the Pacific Missile Range Facility for cogeneration could be economically viable for both the County and the Navy. Another possibility is power generation from the methane and selling the power to KIUC.

As Kaua'i's population expands to 82,000 people by 2035, so will its energy needs and the infrastructure to meet those needs. According to the *Kaua'i Energy Sustainability Plan*, KIUC is projecting a 2.3% annual increase in energy requirements, rising from 515 GWh of generation in 2009 to 789 GWh in 2028. These increases respond to projected increased demand. They also take into account technological and efficiency advantages gained from installing new equipment and systems.

The *Kaua'i Energy Sustainability Plan* recognizes the need to develop energy infrastructure while protecting natural scenery, wildlife, and habitats of endangered species. There is a need to in turn balance these divergent needs with fiscal constraints. The KESP recommended a 2% tax levy on gasoline and diesel from imported oil to build the proposed "Alternative Ground Transportation Modes & Fuels Fund". The KESP suggested that such a levy could fund:

- An improved public bus system.
- Incentives for efficient Hybrid Electric Vehicles (HEVs) that could cost Kaua'i citizens 40% less to operate than conventional internal combustion vehicles.
- A rental vehicle program for the visitor industry which would take rented vehicles off the road while improving the Aloha Spirit shared with visitors.
- Inexpensive conversion kits that would turn conventional gasoline engines into Flex Fuel engines capable of using either gasoline or ethanol to support local ethanol production.
- Purchase of vegetable oil presses that would allow local small farmers to produce Straight Vegetable Oil (SVO) for off-road vehicles, and potentially public buses.

- Incentives for efficient Plug-in Hybrid Electric Vehicles (PHEVs), residential chargers, and KIUC Smart Grid enhancements to enable night-time charging of the vehicles with a 220-Volt charger at people’s homes.
- A 5% fee for the administration of the “Alternative Ground Transportation Modes & Fuels Fund”, community outreach and education activities.

Technology advancements have been lowering the cost of renewables and increasing their viability. Individual households and businesses can now afford and utilize certain systems that were previously out of reach, such as photovoltaics. Larger energy producers and distributors are already adapting their business models to accommodate changes. Changes to land uses and zoning can reduce energy consumption. The 2010 KESP suggested reducing the miles traveled between work and home with smart growth policies. A survey conducted for the 2010 KESP reveals that 76.5% of people surveyed support “smart growth or sustainable communities policies” as a means toward reducing energy consumption.

The *Hawai’i Clean Energy Initiative 2011 Roadmap*, led by the State Energy Office and U.S. Department of Energy (with input from Counties, utilities, and private sector stakeholders), calls for Kaua’i to:

- Introduce multiple biomass facilities for electricity and biofuels production;
- Develop 15 MW of new hydroelectric generation;
- Develop a 10 to 15 MW solar thermal facility;
- Generate 1.5-3 MW from the Kaua’i County landfill gas system; and, generate approximately 350 KW of solar power. The Kaua’i Island Utility Cooperative reported that in 2013 renewable energy projects combined generated a total of 13.3 MW.

Households and businesses have a role by conserving energy.

To summarize, the major issues in Energy include:

- Kaua’i remains overly dependent on fossil fuels that are expensive and pollute the environment.
- Viable renewable energy is available in many forms, and there are plans and targets in place to support its expansion.

Continued investment in a diverse renewable energy portfolio and energy efficiency measures will be necessary to switch over from fossil fuels.

- The need for expanded energy infrastructure will need to be balanced with protecting natural scenery, wildlife, and habitats of endangered species, as well as fiscal constraints.
- Diverse, integrated alternate solutions are preferable to single purpose projects or activities.

The isolation of Kaua’i and its dependence on imported oil was never more apparent as the global economic recession took hold in late 2007. This dependence exposed Kaua’i Island Utility Cooperative and its members to a record surge in the price of oil at the same time the economic free-fall battered the budgets of island businesses and families. (Source: Kaua’i Island Utility Cooperative. 2013-2015 Strategic Plan.)

12.2 OPPORTUNITIES

The Energy Plan Advisory Committee, or EPAC, is a group of government and community members convened by the County Office of Economic Development who have guided the development of the *2010-2030 Kaua’i Energy Sustainability Plan* (KESP). The EPAC consists of participants from Kaua’i County, Kaua’i Island Utility Cooperative, representatives of several community organizations as well as individual community members. The purpose of the KESP is to ensure maximum energy efficiency and conservation

while facilitating Kaua'i's production and use of local, sustainable energy resources in place of imported oil by the year 2030. The document includes specific goals, actions and timelines for implementation.

The focus of County energy policy moving forward would be to encourage and support projects that offer integrated solutions and ancillary benefits. The KIUC west side water projects exemplify an integrated project development approach that both returns water to the natural environment and generates water for energy and agriculture production. KIUC is in a position to add value to the existing water system by integrating a pumped storage hydro project. This project could help provide revenues needed to more efficiently manage water resources; and manage competing needs by eliminating waste. At the same time, the project would provide major benefits to all Island residents in the form of more affordable clean energy.

To summarize, the major opportunities in Clean Energy Transformation include:

The Energy Plan Advisory Committee in collaboration with KIUC has set ambitious goals and is making headway toward achieving these goals.

12.3 HOW THE 2000 GENERAL PLAN TREATED ENERGY

- The Energy section of the GP will require significant updating from what it was in the 2000 GP. KIUC and the State Energy Office have readily available data that will allow the GP to be updated.
- The 2000 GP primarily documented the status of Kaua'i's electrical system and the degree to which the system satisfies the Planning Districts. The 2000 GP recognized that renewables and a new "Service Center" could decentralize the existing system. The 2000 GP text did not discuss the variety of renewable energy sources or how wind, solar, ocean, hydro, etc. might be used to supplement or replace fossil fuels.
- The 2000 GP recommended that the County work with the electric power public utility companies to (a) site and design power generation plants and transmission facilities to blend with the natural landscape and to avoid impacts to important historic sites and viewplanes. Solutions, include constructing underground facilities when economically feasible, and (b) develop a proactive process for siting and designing power generation plants and transmission lines that incorporates early and detailed consultation and negotiation among the utility, the County government, community stakeholders, and the general public.
- Policies are recommended to promote renewable energies, but targets for energy production are not specified.

12.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROECSS

Work on energy to be conducted by the GP Team includes:

- 1) Update the Energy section of the General Plan to reflect current energy alternatives (renewables) and advanced technologies (power grid).
- 2) The GP planning process can support KIUC's energy goals by examining land use policies and their impacts on energy production.
- 3) The GP planning process could consider policies to encourage and support renewable energy projects that add value to other activities and are compatible with or beneficial to underlying land uses.
- 4) Confirm that KIUC projections reflect population projections within the *Socioeconomic Analysis and Forecasts* Technical Report.
- 5) Confirm that KIUC projections support land use, infrastructure and economic development policies in the updated GP.

- 6) Energy policy will be reviewed by the CAC and presented at the next round of Community Meetings.

12.5 RESOURCES

Energy Plan Advisory Committee. February 2013. *Kaua'i Energy Sustainability Plan EPAC Recommendations 2012*.

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13.0 COMMUNITY HEALTH

14.1 DEFINING THE ISSUES

A coalition of health care providers and related agencies was formed in 2013 under the auspices of the Kaua'i Community Health Improvement Initiative (CHII). The CHII built on the work of Get Fit Kaua'i, a local organization whose mission is to improve the quality of life of the residents and visitors of Kaua'i County by working to promote opportunities for physical activity and access to healthy foods. The CHII expands the concept of health. Traditionally, "health" has been perceived as going to the doctor and reducing or curing disease. But in the context of the CHII and the GP, the relationships of the built environment, including affordable housing, walkable communities, active transportation choices, and access to healthy foods, all contribute to both community and individual health. This much broader concept of "health" can be incorporated into the GP.

The CHII partners include the Wilcox Memorial Hospital; Kaua'i District Health Office, County of Kaua'i; Department of Education – Kaua'i Complex; University of Hawaii – Kaua'i Community College; and, the Governor's Office (Kaua'i). They, in turn, reached out to stakeholders and formed a Leadership and Oversight Committee representing 30 different state and local organizations from the public, private and non-profit sectors. While the bonds between many of these organizations already existed, the planning process nurtured relationships. The CHII's priority issues are listed in the text box below.



An individual's health is inherently tied to the health of the community in which he or she lives. According to the World Health Organization, a healthy city is one that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and developing to their maximum potential. (Source: Community Health Improvement Initiative.)

The CHII conducted a *Community Health Needs Assessment (CHNA)* for the County in 2014. This Assessment evaluated health outcomes (mortality and morbidity), and the physical environment, social and economic factors, clinical care, and behaviors that impact health outcomes.

The “community building” process proposed by the CHII parallels the efforts of the GP planning process. The five priority themes of the CHNA -Health and Wellness, Medical Care, Education and Lifelong

Kaua’i’s Community Health Improvement Initiative Priority Issues:

Health and Wellness (Upstream prevention): 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, HIV, etc.

Medical Care: Available, accessible, affordable and integrated mental healthcare/substance abuse/developmentally disabled services and facilities. Available, accessible, affordable and integrated medical care – first to last breath.

Education and Lifelong Learning: Health education for keiki, kupuna, ohana, and school/work/church sites (health literacy and workplace wellness).

Housing: Transitional/homeless/affordable housing/senior housing.

Community Design and Planning: Walkable, bikeable, and safe communities to encourage and promote physical activities and social connectivity.

Learning, Housing, and Community Design and Planning - can be supported with GP implementing actions. The CHIP included 2-5 year strategies to achieve the vision, including recommendations for policies, systems and environment. Five working groups were created to address Built Environment, Housing, Education and Lifelong Learning, Medical Care, and Health and Wellness.

The table below illustrates health outcomes, the indicators used for each and whether Kaua’i residents are doing better or worse than the statewide average, *2020 Hawai’i Physical Activity and Nutrition Plan*, or nation. Other indicators are used to evaluate physical environment, social and economic factors, clinical care, and behaviors. A related issue is health equity, or ensuring that all people have access to the resources and infrastructure to support a healthy lifestyle. As recommended by the 2013 CHNA, equity of opportunity can be measured by “comprehensive non-discriminant policies, progressive tax structure, disparities in education, assistance in navigating through the healthcare system.”

Health Outcomes (Mortality)	Kaua’i County Better (B) or Worse (W) than the State or HP 2020	Kaua’i County Better (B) or Worse (W) than the Nation
Premature Death	W	B
Cancer Mortality**	B	B
Heart Disease Mortality**	B	B
Stroke Mortality**	W	W
Suicide Rate**	W	W
Infant Mortality**	B	B

Health Outcomes (Morbidity)		
Poor General Health	W	Comparable (Not statistically significant)
Poor Physical Health Days*		
Poor Mental Health Days*	W	W
Low Birth Weight	B	B
Breast Cancer Incidence	B	B
Cervical Cancer Incidence**	W	W
Colon and Rectum Cancer Incidence	W	W
Diabetes Prevalence	B	B
Heart Disease Prevalence	W	B
HIV Prevalence	W	B
Poor Dental Health	B	B
Population with Any Disability	W	W

Source: Kaua'i's Community Health Needs Assessment (2013)

* Not a CHNA.ORG dashboard comparison

** Compared to HP 2020 Target, not the State

Kaua'i's population is continuing to grow older, the median age is shifting upward, and life expectancy is increasing. While these trends point to improved health and longevity, Kaua'i's built environment will need to be modified to serve an older population. Such an environment is often called "age-friendly", meaning that it can accommodate the abilities of the very young, very old, and everyone in between.

The prevalence of chronic disease, like diabetes, is increasing, even though many chronic diseases can be prevented or controlled through lifestyle changes. The CHNA reports that Kaua'i County's residents have better access to recreation and fitness facilities and healthy foods than others in the State. However, 46% of restaurants on Kaua'i are fast food restaurants, and the establishment rate of fast food restaurants on Kaua'i (107.32 establishments per 100,000) people is much higher than that of the nation as a whole (69.26 establishments per 100,000 people).

The GP planning process, to date, has revealed resident dissatisfaction with a lack of pedestrian and bicycle infrastructure. Speeding vehicles makes people feel unsafe. Poor intersection design, an incomplete network of sidewalks, crosswalks, bicycle facilities, and other important features are lacking from the public realm. The CHNA suggests that busy lifestyles and/or a lack of health education negatively impact families in Kaua'i. Tobacco use is still allowed in many venues. Not all residents participate in vaccination and cancer screening, and many people with chronic diseases are not managing them well. The lack of affordable housing creates stress for families that, in turn, affects health. Prevalence of teen pregnancy, STDs, suicide, domestic violence, bullying, and injuries is too high. To summarize, the major issues in Community Health include:

- Individual and community health are mutually dependent and require planning that accounts for improving health and wellness, medical care, education and lifelong learning, housing, and community design and planning in order to succeed.
- The population is living longer and requires an age-friendly, safe physical environment.
- Community design and infrastructure should support healthy living.

13.2 OPPORTUNITIES

There are good foundations for improving the health of Kaua'i's residents. Get Fit Kaua'i's Built Environment Task Force has become a policy leader in community health issues. The Task Force "recognizes that Kaua'i's land use system should support active, healthy lifestyles through human-scaled, rather than automobile-centered, development." The task force is helping the County make the necessary changes to its planning system in order to support healthy community design. Milestones include the Kaua'i County Complete Streets Indicators Report and updates, Rice Street Week and work on planning for healthy communities. Complete streets projects in mixed-use, vibrant town centers can satisfy many recommendations offered by the CHII.

Other State and County health policies include:

- *A New Day in Hawai'i* (State)
- *Hawai'i Healthcare Initiative* (State)
- *DOH Strategic Plan: Healthy People, Healthy Community, Healthy Islands* (State)
- *Holo Holo 2020* (County)

To summarize, the major opportunities in Community Health include:

- Utilizing the Community Health Improvement Initiative's work products to:
 - Provide a framework for public health as a component of the General Plan.
 - Identify land use and planning issues that affect health
 - Provide baseline data and measurable indicators
 - Provide health-related goals, policies and strategies that can be considered in the General Plan
- Harnessing the energy and expertise of the CHII's working groups for future initiatives and to implement the recommendations of the GP.
- Compact, walkable communities whose built environment and mix of uses support healthy lifestyles and enhance social interaction.
- Complete streets and multimodal transportation options can contribute to healthier communities. "Active transportation" is a means of getting around that is powered by human energy, primarily walking and bicycling. Active transportation becomes easier and safer when streets are designed to accommodate pedestrians and people on bicycles.
- A dedicated coalition of volunteers and industry leaders committed to improving public health.

13.3 HOW THE 2000 GENERAL PLAN TREATED PUBLIC HEALTH

- The 2000 GP did not include a chapter on Community Health, and so this will be a new chapter. The CHII and CHNA have data and policy recommendations that can be used to draft this new chapter.
- The current, broader definition of community health speaks to the environment in which people live, making linkages between health housing, transportation, and other elements of the built environment. The 2000 GP did not acknowledge these links.

13.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

Work on Community Health to be conducted by the GP Team includes:

- 1) The 2014 *Kaua'i Community Health Improvement Plan* and the Built Environment Task Force *Evaluation of Public Health Policies in the General Plan 2000* present goals and recommendations that can be used to support public health policy adjustments in the General Plan. The connections between community health and other policy areas, including alternative transportation modes, recreational facilities, housing, public services, and characteristics of the built environment, can be emphasized in the GP planning process.
- 2) In order to sustain and improve community health, programs and policies can be assessed from an equity perspective.
- 3) The indicators used in the CHNA to assess community health can be considered as indicators to assess progress in implementing the GP.
- 4) Public Health policy will be reviewed by the CAC and may be presented at future Community Meetings.

13.5 RESOURCES

County of Kaua'i. June 2014. *Kaua'i Community Health Improvement Plan*.

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14.0 CULTURAL AND HERITAGE RESOURCES

14.1 DEFINING THE ISSUES

Kaua'i has thousands of archaeological sites and hundreds of historic buildings. Of these, approximately 60 historic buildings and complexes and 30 archaeological sites are listed on the National Register of Historic Places, the Hawai'i Register of Historic Places, or both. There are also listings for historic objects and historic structures, such as the Hanalei Pier. Native Hawaiian coastal burials, artifacts, and structures are particularly vulnerable to inundation and erosion.

The Hawaiian and Pacific Island cultures, however, are not simply of interest for historic purposes. These cultures, and those brought more recently by newcomers to Kaua'i, are alive and contributing to the shared values and aloha spirit that unites the Island.

The physical environment is closely linked to Kaua'i's cultural and heritage resources. There is great concern that development and the adverse impacts of sea-level rise will reduce access to traditional food sources and subsistence fishing. These activities, and others, help people sustain connections with a defined place and keep unique customs and practices alive.

Retention of Kaua'i's one lane bridges, especially on the North shore, helps preserve the character of the community. Similar bridges exist in Kōloa, Kekaha, and Waimea Districts. From time to time decisions balancing preservation and economic revitalization need to be made. It is critical that community desires drive such decisions.

To summarize, the major issues in Cultural and Heritage Resources include:

- Kaua'i's cultural and heritage resources contribute to maintaining a sense of place and belonging and provide a basis for properly caring for the land.
- Historic buildings and infrastructure may be more expensive to keep in good condition, but some are worth the investment.
- Heritage Resource maps have not been consistently or regularly updated.



Kahua O Kāneiolouma (pictured above) is a cultural site containing the remnants of an ancient Hawaiian village at Po'ipū. The 13-acre complex is under the jurisdiction of the County of Kaua'i and contains numerous habitation, cultivation, sporting or assembly, and religious structures dating to at least the mid-1400's.

The complex is largely intact but in need of rehabilitation. Under a Stewardship Agreement signed in August 2010, the County of Kaua'i granted formal custodianship of the Kāneiolouma complex to Hui Mālama O Kāneiolouma. The rehabilitation project was also included in Mayor Bernard P. Carvalho's *Holo Holo 2020* plan.

Following an outline developed by Native Hawaiian archaeological expert Henry E.P. Kekahuna, the Master Plan addresses a seven year horizon, with work in four overlapping phases. Work began in 2012.

- Important decisions need to be made as aging infrastructure reaches its life cycle age. These decisions must balance community character and wishes.

14.2 OPPORTUNITIES

Registration, or designation, on the State and National Registers of Historic Places may protect historic sites from demolition or inappropriate renovation; registered sites may also be eligible for restoration grants, tax incentives or assistance that leads to their upkeep.

Kauai's Historic Preservation Review Commission is a valuable organization of local experts. Given additional resources, this Commission can probably assist with promoting awareness of existing resources and implementing programs to expand and maintain Kauai's inventory of cultural and heritage resources.

To summarize, the major opportunities in Cultural and Heritage Resources include:

- Additional sites may be eligible for historic designation; listing them can prevent their demolition or inappropriate renovation.
- Mapped resources can be further protected with the County's Open District, or acquired with Public Access funds.
- The preservation of the Kaneiolouma site can serve as a model for County resource protection efforts.

14.3 HOW THE 2000 GENERAL PLAN TREATED CULTURAL AND HERITAGE RESOURCES

- The 2000 GP contains an extensive section titled "Caring for Land, Water and Culture". Several sub-sections, including "Overview", "Historic and Archeological Resources", and "Native Hawaiian Rights" remain largely current and relevant today.
- The 2000 GP recommended providing a buffer area and pedestrian access for historic/archaeological sites, to incentivize rehabilitation of historic structures, and to establish an "historic district" overlay with design guidelines where needed. This task has not yet been initiated.
- To further protect historic properties, the 2000 GP recommended studying the market, costs, sources of funding, and operational feasibility of creating an island wide low-cost rehabilitation loan program for historic structures. This task has not yet been initiated.
- The GP recommended that the State Historic Preservation Division (SHPD) prepare "Archaeological Resource Potential Maps" for Kauai, with assistance and input from the Kauai Historic Preservation Review Commission, the Planning Department, and the Kauai Burials Council. However, SHPD did not concur, and it has not yet been initiated.
- The Heritage Resource Maps need updating; not all of the data is not readily available.

14.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

Work on cultural and heritage resources to be conducted by the GP Team includes:

- 1) The 2000 GP called for the development of maps that identified the potential locations of archeological resources as a means of generating greater awareness of cultural resources and the need for their protection. This was not done.
- 2) The last local inventory of resources was conducted in 1990 (*County of Kauai Historic Resources Inventory and Management Plan*). This type of inventory can help determine what resources need maintenance or protection. However, updating this inventory is not within the scope of the GP Update.

- 3) The County's efforts to support the preservation/restoration of Kaneioulouma is a model for the preservation of other important cultural sites. The effort can be documented for inclusion in the GP during the meetings with agencies.
- 4) Heritage resources were mapped, as part of the South Kaua'i Community Plan. This can be repeated for the other Community Plan areas. The heritage maps included in the 2000 GP will serve as the basis for the maps included in the GP Update. Layers will be updated using existing data sources.
- 5) Kaua'i's rich cultural and heritage resources are a major attraction for both residents and tourists. A renewed interest in Hawaiian values and culture reveals itself in place names, art, fashion, and the increased number of Hawaiian schools for music, language, and dance, all of which contribute to the aloha spirit.

14.5 RESOURCES

State of Hawai'i Department of Hawaiian Home Lands. May 2004. *Kaua'i Island Plan*.

County of Kaua'i. 1990. *County of Kaua'i Historic Resources Inventory and Management Plan*.

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15.0 NATURAL RESOURCE MANAGEMENT AND CONSERVATION

15.1 DEFINING THE ISSUES

Kaua'i residents firmly believe that the natural environment provides the foundation for sustainability, which is the top priority in their communities. During the GP Update community meetings, the theme of "nature first" was reiterated over and over. The island's "natural capital" is seen as its greatest asset, and preserving it for current and future generations is of utmost importance. Care for and access to public trust resources (water, beaches, coastal areas, special places) was a particular theme.

Kaua'i's natural resources are bountiful, and include its public lands; above and underground inland waters; ocean waters; coastal areas; non-renewable resources such as fossil fuels and minerals; mountains and valleys; forests and fields; and the flora and fauna that depend on these areas. Natural resources have a critical role



in the functioning ecosystem. They are equally important for their natural beauty and contribution to community health and well-being, including recreation and the economy.

Increases in population and visitors create demands and pressures on natural resources. Opinions vary on the degree to which Kaua'i's resources are currently managed and how will they be managed in the future. There is overall agreement that Kaua'i's natural resources are threatened, and that proper stewardship is an urgent matter that requires a holistic approach. This is everyone's kuleana, and includes individuals, businesses, and government taking measures to reduce their ecological footprint and increase efficiencies rather than use more limited resources. It includes devoting more resources to ensure that native ecosystems and organisms are not irreparably harmed, and finding a balance between human use and enjoyment of nature and its preservation for future generations. The concept of malama 'āina is an appropriate one to capture this intent. Many in the community have also invoked ahupua'a management as a model that is instructive for current and future environmental management. Watershed councils and environmental organizations exist throughout the island and are prominent voices in the stewardship and management of water and other resources.

Invasive species pose a huge threat to the environment, threaten our environment, economy, agriculture, human health, and/or quality of life. Invasive species generally reproduce quickly and are able to spread from their initial intended area.

Much of Kaua'i's natural resources are owned and managed by multiple Federal, State, and local entities. Kaua'i has twenty-four managed reserve, preserve or park areas, shown below:

Kaua'i Reserves	Management
Alakai Wilderness Preserve	DOFAW
Halelea Forest Reserve	DOFAW
Hono O Na Pali Natural Area Reserve	DOFAW
Kalepa Mountain Forest Reserve	DOFAW
Keālia Forest Reserve	DOFAW
Kuia Natural Area Reserve	DOFAW
Līhu'e-Kōloa Forest Reserve	DOFAW
Mānā Plains	DOFAW
Moloa'a Forest Reserve	DOFAW
Na Pali-Kona Forest Reserve	DOFAW
Nonou Forest Reserve	DOFAW
Puu Ka Pele Forest Reserve	DOFAW
Wailua Game Management Area	DOFAW
Hā'ena State Park	DOSP
Kokee State Park	DOSP
Na Pali Coast State Wilderness Park	DOSP
Poli Hale State Park	DOSP
Wailua River State Park	DOSP
Waimea Canyon State Park	DOSP
Kanaele Preserve	TNC
Wainiha Preserve	TNC
Hanalei National Wildlife Refuge	USFWS
Huleia National Wildlife Refuge	USFWS
Kīlauea Point National Wildlife Refuge	USFWS

All lands - even those that are inaccessible and designated as preservation lands by the State – need protection. Erosion, invasive species, air and water pollution have wide-reaching impacts. Government regulations include the Special Management Areas (SMA), State Conservation District, and County Open District. Regulations under the County's control can be modified to further protect natural resources.

Some properties that contain natural resources are privately-owned and subject to be developed. These privately-owned resources are the most vulnerable, especially when owned by people who are land rich and cash poor. There may be a mechanism for inventorying such lands and developing a long-term protection and stewardship strategy beyond targeted acquisition. Community members have expressed concern that property owners (particularly high-profile or wealthy buyers concerned with privacy) try to limit access to public areas such as beaches, trails, and coastal lands. Maintaining adequate access to these areas is a recurring theme of community feedback.

The State of Hawaii plays a major role in managing natural resources on Kaua'i. The Department of Land and Natural Resources (DLNR) controls and manages the forest reserves, natural area reserves, and state parks. The forested watersheds harbor rare and endangered plant and animal species, and in some areas, the native ecosystem remains relatively intact. The DLNR exercises regulatory authority over land use in

the State Conservation District, which covers 55 percent of the island's land area. Anyone wishing to build in the Conservation District receive approval. DLNR has responsibility of the Public Land Trust, including ceded lands and submerged lands.

Endangered Species

Terrestrial ecosystems have changed significantly since the arrival of Europeans in 1778. Although Kaua'i's first settlers cleared much of the low-lying forests for agriculture and dwelling sites, the higher elevations were left relatively undisturbed. Forests continue to be depleted of sandalwood trees. The introduction of cattle and goats requires grazing land. The need for fuel, ranching activities, and crop production results in deforestation. Fires ignited by humans destroy native forests, especially during dry periods. Coupled with these disturbances are threats to native birds, plants, and invertebrates.

About 90% of the native Hawaiian plant species can only be found in the Hawaiian archipelago. Kaua'i has the highest number – 495 – of endemic plant species in the Hawaiian Archipelago. Over 140 of them are listed as federally endangered, and of these, 70 are on the verge of extinction (U.S. Forest Service, 2011).

Kaua'i is home to more tropical bird species than any of the other islands. There are over 80 different species which nest on the island and 21 of them are exclusively native to Kaua'i. Several species, in particular, are endangered and need protection from predators, invasive species, and habitat destruction. Examples include the Hawaiian Petrel, Newell's Shearwater, and Nene. Recent additions to endangered species lists suggests that the management of the Alaka'i Wilderness Preserve is critical to protecting wildlife (*Draft Hawai'i's State Wildlife Action Plan*, 2015).



Puaiohi or Small Kaua'i thrush – State and Federally Listed Endangered Species

Several endangered species of animals find refuge on, or just off of, Kaua'i's shores. The Hawaiian Monk Seal and the Hawaiian Hoary Bat are just two of the native species on the endangered species list. These animals, as well as three of the seven endangered species of Sea Turtles in the world, make Kaua'i's vast stretch of shoreline their home. Endangered Humpback Whales are also found in the waters around Kaua'i.

Critical Habitats

There is approximately 188,500 acres of forest on Kaua'i, occupying 55% of the island. The native 'ohi'a is the predominant forest type with over 109,000 acres or 58% of the forest acreage. Of this forest area, less than half, or approximately 88,000 acres is in forest reserve land. The majority of these reserves, or 64%, are native 'ohi'a and koa forests. The great majority occur inland at high elevations or on steep topography unsuited to development. In developable, low-lying areas, only scattered remnants remain. The Alaka'i Swamp has the largest block of undisturbed native forest on the island. The Kōke'e area, on the western side of the island, has wet, native 'ohi'a forests at higher elevations and dry, scrub koa forests

at lower elevations. Native forests are also found along the *pali* (cliff) walls in the backs of many valleys. Kaua'i has over 134,000 acres (39% of the island) of cliffside or *pali* lands.

Over 36,000 acres of shrubs occur on the island; the dominant species is haole koa with over 13,000 acres. Over 122,000 acres are classified as non-forest with cultivated land and grassland comprising over 64,000 and 34,000 acres, respectively.

Watersheds and Streams

Watersheds collect rain and condensation that is funneled into stream beds that either join other stream beds or terminate at the edge of the sea. The presence and severity of erosion can be used as a measure of the quality of a watershed. An islandwide photographic sample (*The Multiresource Forest Inventory for Kaua'i*) indicated that 13% (45,100 acres) of the island had slight to moderate erosion and 6% (20,825 acres) had severe erosion. Eighty-four percent of the severely eroded land is in the *pali* land class. Most of the severely eroded area is in Waimea Canyon and along lower ridges on Kaua'i's west side. Although many of the steep *pali* lands are naturally erosive, other areas in the lower Kōke'e area could benefit from watershed rehabilitation efforts.

The 2008 *Atlas of Hawaiian Watersheds and Their Aquatic Resources* divides Kaua'i into five regions. The Hanalei region has 32 watersheds. The Līhu'e region has 12 watersheds. The Kōloa region has 8 watersheds. The Waimea region has 4 watersheds. The Kekaha region has 10 watersheds. Priority watersheds for restoration in Kaua'i include: 1) Nāwiliwili Bay and coastal waters, including the three tributary watersheds of Nāwiliwili, Pū'ali, and Hulē'ia; 2) Waimea Bay and coastal waters, including the tributary watersheds of Waimea, Kapilimao, Waipao, A'akukui, and Mahinauli; and 3) Hanapēpē Bay and coastal waters, including the Hanapēpē River and watershed (*State of Hawaii Water Quality Monitoring and Assessment Report, 2014*).

Nonpoint source pollution, commonly called polluted runoff (*Hawaii's Implementation Plan for Polluted Runoff Control, 2000*), occurs when rainwater moves on the surface of the earth or through the ground and 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, floatables, and pathogens. In the simplest terms, nonpoint source pollution is any pollution that is not from a particular, or point, source. 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, results from people's activities on the land.

There are 17 impaired inland freshwater bodies and 23 impaired marine/coastal water bodies in Kaua'i (*State of Hawaii 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.

A key concern is the long-term organizational structure for watershed and stream management. Each restoration project must develop and draw upon a network of government and community-based organizations. Agencies or organizations must step forward to accept responsibility and be funded to coordinate restoration and management over the long term.

Ocean Resources

The most vulnerable resources are those threatened by climate change and sea-level rise. Recommendations for improved protection of these resources are summarized in the 2014 *Kaua'i Climate Change and Coastal Hazard Assessment*. The impact of climate change on the land, beaches and oceans could be severe and is a concern (see the Climate Change and Coastal Hazards section of this paper for more discussion). The 2014 *Kaua'i Climate Change and Coastal Hazard Assessment* reports that nearshore reefs and coastal ecosystems are already under great pressure from overfishing, land-based runoff, and other human impacts. Increasing temperatures, ocean acidification, and runoff with changing precipitation patterns will further destabilize nearshore ecosystems. On Kaua'i, approximately 70% of beaches are experiencing erosional trends.

Sea-level rise and related impacts such as increasing storm surge heights threaten to alter the physical setting and impacts for nearshore environments. Fish species that depend on shallow water or inter-tidal and sub-tidal plant communities will be at risk of habitat loss. Changing water depths could negatively affect species types and quantities. Future inundation of coastal lands with sea-level rise and changing precipitation and runoff patterns could further degrade coastal water quality, in addition to the existing threats to water quality from nonpoint source pollution, such as sediment, nutrients, pathogens, oil, toxins, and polluted runoff. Impacts of certain farming practices have been hotly debated on Kaua'i.

To summarize, the major issues in Natural Resource Management and Conservation include:

- Healthy natural resources are a key to sustainability and resilience.
- Native flora and fauna are threatened by a myriad of drivers, including habitat loss, invasive species, and climate change. Development contributes to these drivers, including the development of natural resources.
- Privately owned properties may have resources that are not protected, or whose resources are difficult to monitor.
- County and State parks are challenged to maintain facilities.
- Resource protection is a shared responsibility and duty.
- Sedimentation from rivers, streams, and other runoff is negatively impacting coastal areas.
- Beaches are being lost due to coastal erosion and human impacts to sand supply.

15.2 OPPORTUNITIES

Encouraging the formation of citizens groups to take responsibility for local natural resources and partnering with the State and non-profits for research purposes can lead to an improved environment, generate local capacity and awareness, and potentially lead to funding for more environmental protection and conservation activities. Environmental leaders on Kaua'i include:

- The Nature Conservancy manages two critical habitat areas on Kaua'i via management agreements with the landowner: the Kanaele Bog and Wainiha Preserve.
- National Tropical Botanical Garden is dedicated to preserving tropical plant diversity and stemming this tide of extinction - through plant exploration, propagation, habitat restoration, scientific research, and education. NTBG's gardens and preserves are safe havens for at-risk species that otherwise might disappear forever.
- The Kaua'i Invasive Species Committee (KISC) is a voluntary partnership of government, private and non-profit organizations, and concerned individuals working to prevent, control, or eliminate the most threatening invasive plant and animal species in order to preserve Kaua'i's native biodiversity and minimize adverse ecological, economic and social impacts.

- The Kaua'i Endangered Seabird Recovery Project (KESRP) is a Division of Forestry and Wildlife (DOFAW) project, administered through the Pacific Studies Co-operative Unit of the University of Hawai'i. Formed in 2006, the project focuses on the Newell's Shearwater, Hawaiian Petrel and Band-rumped Storm-Petrel. KESRP identifies the breeding distribution of these rare seabirds, monitors their breeding colonies, undertakes research projects to understand their life histories and the various threats which they face, and works with partner projects and organizations to ensure their long-term conservation.
- Mālama Hulē'ia is a voluntary non-profit organization dedicated to improving key parts of the Nāwiliwili Bay Watershed on Kaua'i by eliminating the red mangrove - an alien and highly invasive plant species. Over the last 50 years, the red mangrove has been changing native wildlife habitats in and along the Hulē'ia River and destroying the 'Alekoko Fish Pond.
- The Surfrider Foundation, Kaua'i Chapter, is a non-profit environmental organization dedicated to the protection and enjoyment of the world's oceans, waves and beaches for all people, through conservation, activism, research and education.
- The Kaua'i Watershed Alliance partners (KWA) focus on protecting the uppermost watershed areas on Kaua'i from invasive alien plants, animals, and other threats. The Nature Conservancy is coordinating the implementation of an overall management strategy for the KWA to protect the 144,004 acres of partnership lands.
- Hanalei Watershed Hui is a non-profit environmental organization that strives to care for the Ahupua'a of Hanalei, Wai'oli, Waipā, and Waikoko. They are guided by Hawaiian and other principles of sustainability and stewardship, integrity and balance, cooperation and aloha, cultural equity and mutual respect.
- The Kaua'i Invasive Species Committee (KISC) is a voluntary partnership of government, private and non-profit organizations, and concerned individuals working to prevent, control, or eliminate the most threatening invasive plant and animal species in order to preserve Kaua'i's native biodiversity and minimize adverse ecological, economic and social impacts.
- Malama Mahaulepu is working to preserve, for future generations, the irreplaceable natural and cultural resources of Maha'ulepu.
- Sierra Club's mission is to explore, enjoy, and protect the wild places of the earth; practice and promote the responsible use of the earth's ecosystems and resources; educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives.
- Kaua'i Forest Bird Recovery Project aims to promote knowledge, appreciation, and conservation of Kaua'i's native forest birds. Its efforts focus primarily on three federally endangered species: the Puaiohi, 'Akikiki, and 'Akeke'e, with the goal of facilitating recovery of their populations in the wild.

The Department of Land and Natural Resources supports the formation of local groups to monitor environmental health and build community awareness. Makai Watch Groups are now active in Hanalei and Hā'ena. The State, working with the University and other non-profits, like the Nature Conservancy of Hawai'i, uses Kaua'i as a testing ground for environmental action. For example, the Aquatic Invasive Species Response Team is working on a method to eliminate snowflake coral from the pier at Kaua'i's Port Allen.

Regulations already exist to help manage and conserve natural resources. They include the Special Management Areas (SMA), State Conservation District, and County Open District. The SMA program helps ensure that permitted uses and activities are designed and carried out in compliance with the Hawaii Coastal Zone Management (CZM) program objectives and policies as set forth in Chapter 205A, Hawaii Revised Statutes. The SMA Permit system administered by the County regulates development within a geographically defined boundary that extends from the shoreline inland. Within each county, SMA boundaries may range from about 100 yards to several miles inland from the shoreline.



The County's Open District was established to ensure an adequate amount of open lands is provided for the recreational and aesthetic needs of the community and to provide for the effective functioning of land, air, water, plant and animal systems or communities. It is intended to preserve, maintain or improve the essential characteristics of land and water areas that are: (1) of significant value to the public as scenic or recreational resources; (2) important to the overall structure and organization of urban areas and which provide accessible and usable open areas for recreational and aesthetic purposes; (3) necessary to insulate or buffer the public and places of residence from undesirable environmental factors caused by, or related to, particular uses such as noise, dust, and visually offensive elements.

The State Conservation District is comprised primarily of lands in existing forest and water reserve zones and includes areas necessary for protecting watersheds and water sources, scenic and historic areas, parks, wilderness, open space, recreational areas, habitats of endemic plants, fish and wildlife, and all submerged lands seaward of the shoreline. The Conservation District is administered by the State Board of Land and Natural Resources and uses are governed by rules promulgated by the State Department of Land and Natural Resources.

While these regulatory programs provide a significant measure of protection, they can be complemented and strengthened by adopting smart growth policies that seek to contain urban development within compact, walkable town cores. Urban edge boundaries and zoning requirements can also be implemented to direct the extent and character of development.

To summarize, the major opportunities in Natural Resource Management and Conservation include:

- Several regulatory mechanisms are in place to protect or conserve natural resources.
- Many local groups are working as environmental stewards.

15.3 HOW THE 2000 GENERAL PLAN TREATED NATURAL RESOURCE MANAGEMENT AND CONSERVATION

- The 2000 GP contains an extensive section titled “Caring for Land, Water and Culture”. Several sub-sections, including “Watersheds, Streams and Water Quality”, “Coastal Lands”, and “Scenic Views” remain largely current and relevant today.
- The 2000 GP recommended revising the CZO to better protect natural resources by revising the Drainage Way Constraint District and/or creating an overlay zone for streams, wetlands, and flood plains. The policies governing Natural Resource Management and Conservation are mostly intact.

15.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

Work on natural resource management to be conducted by the GP Team includes:

- 1) Meet with SMA regulators to determine whether additional direction or recommendations in the GP would support resource protection.
- 2) Introduce data and information from the climate change study conducted for the GP Update.
- 3) Extract appropriate policy material from recent master planning for the County parks.
- 4) Update Table 3-1: Water Bodies with Impaired Water Quality, Island of Kaua'i, 1997 (in the 2000 GP) with currently available data from the Hawaii Department of Health *2014 State of Hawaii Water Quality Monitoring And Assessment Report: Integrated Report to the U.S. Environmental Protection Agency and the U.S. Congress Pursuant to §303(d) and §305(b), Clean Water Act (P.L. 97-117)*.
- 5) Develop current data and maps on drainage issues. However, this is outside the scope of the GP Update.
- 6) During community workshops, seek input on non-profit organizations on natural resource protection, and determine how and whether these organizations can play a larger role in implementing resource protection actions in the updated GP.
- 7) Add descriptions of the role of the County, State and Federal Government in resource protection.

15.5 RESOURCES

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16.0 PARKS AND RECREATION

16.1 DEFINING THE ISSUES

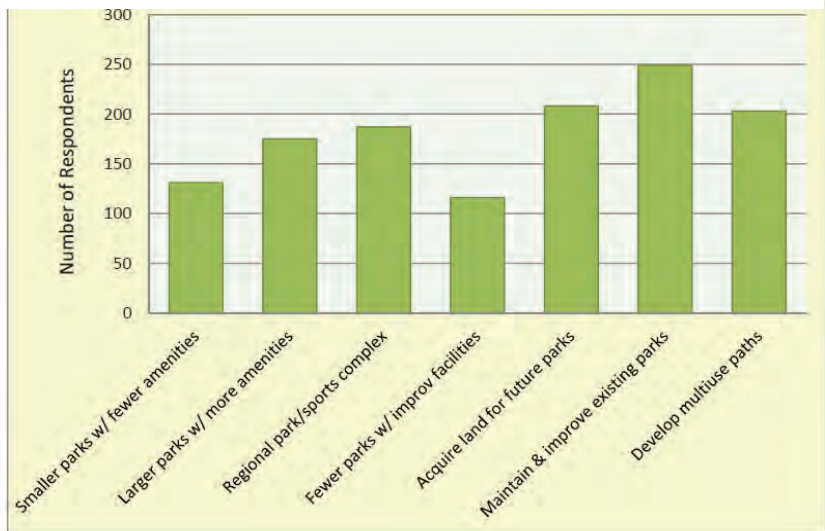
The County of Kaua‘i has an extensive park system that includes 85 park properties. They range in size from the small 0.2-acre Horner Park to the anticipated 138-acre Ahukini Coastal Park and are spread all over the island. In addition to the park lands, the County maintains Kaua‘i’s public 18-hole Wailuā Golf Course and two cultural preserves – Ka Ulu A Paoa and Ke Aku A Laka in Hā‘ena and Kaneioulouma in Po‘ipū.



Kaua‘i is also fortunate to have State parks, the Na Ala Hele Trails, and federally protected areas, such as the Kīlauea Point National Refuge. The Kōke‘e and Waimea Canyon State Parks are adjoining parks located on the west side of Kaua‘i. Officially established in 1952, the parks occupy 6,182.4 acres of land. Their combined acreage is approximately 1.75 percent of the total land area on the island, and 40 percent of the State Parks acreage on Kaua‘i. The two parks have significant cultural, historic, natural and scenic resources, and thus, are very popular. These Parks are called out because the challenges they face are recently documented (the Kōke‘e and Waimea Canyon State Parks Master Plan was completed in 2014) and are representative of maintenance and capacity issues other parks on Kaua‘i elsewhere.

Given that people are living longer, the recreation needs of seniors will increase over time; and yet, planning to meet the needs of youth remains important because youth have more limited leisure-time choices. The County’s Department of Parks and Recreation continues to work on providing the programming and facilities to meet the diversity of recreational needs. A survey conducted as part of the 2013 parks and recreation planning process revealed community priorities, which are illustrated in the graph at right.

SURVEY QUESTION 13: THE COUNTY IS ESTABLISHING A SERIES OF PRIORITIES TO DIRECT FUTURE DEPARTMENT ACTIONS. HOW IMPORTANT OR UNIMPORTANT ARE EACH OF THE FOLLOWING?



Source: 2013 Parks and Recreation Master Plan

The pace of park improvements may not be keeping up with demand. The Department of Parks and Recreation survey also found that residents already perceive that the biggest challenges facing County parks are maintenance, lack of amenities, and lack of facilities desired by users. The diversity of facilities and programs offered, coupled with the distance between properties and their varied sizes

means that staff spend a lot of time driving from facility to facility and a great variety of equipment is needed to maintain the properties.

From a maintenance and resource perspective, it is more efficient to manage large parks, or “super parks”, as opposed to smaller parks or gathering places. However, smaller neighborhood parks play an important role in fostering healthy communities. Neighborhood parks can often be reached by foot or bicycle and, thus, contribute to a healthy lifestyle and cleaner environment. Such parks or local gathering places also contribute to healthy communities – they facilitate neighbor interaction and participation in community decision-making. Such places, also called “civic spaces,” are where people can get to know one another and discuss neighborhood matters. Attractive communities generally have a diversity of parks – large and small – that meet the needs of its people.

The desire for additional park facilities will need to be balanced with preserving the intent of the Open district. As an example of how this balance can be met, the CZO was amended in 2012 to exclude public shared use paths greater than 10 feet in width from the lot coverage provision. In the case of shared use paths wider than 10 feet, the Planning Director’s approval is required to exceed the standard.

Accessibility to parks is a key priority that relates to community health and social equity. Parks should be accessible for people of all ages and abilities, including persons with disabilities. A pedestrian and bicycle network that connects parks with town centers and complies with ADA requirements is key to accomplishing this. When private lands are involved, it can be difficult to negotiate adequate access to shoreline and inland recreational areas. Adequate access means (at minimum) providing parking and means for the general public to access the area on foot.

To summarize, the major issues in Parks and Recreation include:

- The State and County Parks are heavily used and require more maintenance and facility upgrades than they are currently receiving. Many existing park facilities require improvement.
- Improving and maintaining existing park facilities is more important than building new facilities.
- Facilities and programs need to accommodate a population that is aging and living longer.
- The County needs both small and large parks to accommodate the diversity of user needs.
- Certain zoning regulations define how future parks production or improvement can be accomplished.

16.2 OPPORTUNITIES

In 2006, Kaua’i voters approved a Charter amendment that created the Department of Parks and Recreation. As a result there is now greater capacity to manage and improve the parks system and facilities.

The County’s Department of Parks and Recreation developed and adopted its *Master Plan* in 2013. The Plan is aligned with the 1978 *Parks and Recreation Master Plan*, 2000 *General Plan*, and 2009 *Statewide Comprehensive Outdoor Recreation Plan*. It contains four primary goals that build on previous planning work and address the needs of current and future park and open space users. These are listed on the following page.

There are programs that encourage the community to participate in creating and helping maintain parks. These include: the County's community-based program for park improvements called Ho'olokahi, "Adopt-a-Park", and partnerships with other local departments or schools and non-profits. Other mechanisms for collaborating can be explored.

Sometimes the Department may collect a fee for a facility's use. Adjusting fees and improving the deposit program to better match public demand and expenses would help to recapture a portion of the costs for facility maintenance and upkeep.

While the preservation and public access to natural and cultural resources has always been critical, Kaua'i has a new tool with which to implement its goals. The Public Access, Open Space, and Natural Resources Preservation Fund (Fund), was established in 2002. The Fund receives a minimum of 0.5% of Kaua'i's annual certified real property taxes. Ordinance No. 936, enacted in 2012, increased the set aside to 1.5% of real property taxes. The Fund may be used to acquire land or property entitlements for: public outdoor recreation and education; preservation of historic or culturally important land areas or sites; protection of significant habitats or ecosystems; preserving forests, beaches, coastal areas and agricultural lands; conserving land to reduce erosion, floods, landslides and runoff; improving or acquiring public access for all people to public land and open space; and, conserving land for scenic views. Shared use paths – one of the top priorities identified in the Parks and Recreation master planning process – could be targeted for acquisition (or extension / improvement) using the Public Access Fund.

The Public Access, Open Space, and Natural Resources Preservation Fund Commission (aka "Open Space Commission") was formed in 2004 to solicit public input and work with the Planning Department to develop an annual list of priority projects to be considered for funding. Other funding opportunities include Hawai'i's Legacy Land Conservation Program and the Land and Water Conservation Fund administered by the U.S. Department of the Interior.

The 2014 *Draft Infrastructure & Public Facilities Needs Assessment Study* suggests that the park dedication fee assessed at the time of subdivision approval is too low and does not capture the true costs of facilities and land needed to meet the requirements of a growing population. The Needs Assessment Study recommends that the park dedication fee be replaced with a Park Land and Facilities Impact Fee.

To summarize, the major opportunities in Parks and Recreation include:

- The Public Access Fund and Parks Trust provide funds for acquisition, access and improvements of land beyond the annual County budget.
- User fees can be adjusted to better reflect costs of maintenance, or be instituted to generate funds for improvements.
- Research on impact fees reveals that the park dedication fee could be revised and updated.

Goals of the 2013 Parks and Recreation Master Plan

1. *Parks and Recreation Facilities – to provide outstanding support and services for a variety of park and recreation experiences;*
 2. *Physical and Cultural Resources – to ensure stewardship of the natural, historic, and cultural environments for long-term recreational use and enjoyment;*
 3. *Recreation Programs – to provide recreation programs that reflect the interests on Kaua'i citizens and improve their quality of life and well-being; and,*
 4. *Planning, Coordination, and Implementation - to promote implementation of the Master Plan.*
-

- Partnerships with other entities can expand the Department of Parks and Recreation's ability to keep facilities clean and functioning properly, as well as instill a sense of ownership in the contributing public.

16.3 HOW THE 2000 GENERAL PLAN TREATED PARKS AND RECREATION

- The Parks and Recreation section in Chapter 8 of the 2000 GP addresses County parks. State parks are addressed in greater detail in Chapter 3 titled "Caring for Land, Water and Culture" and Chapter 4 "Developing Jobs and Businesses" (primarily within the "Visitor Impacts on Parks and Natural Resources" sub-heading).
- The 2000 GP recognized the regulatory constraints that parks face in certain zoning districts. The 2000 GP recommended simplifying the zoning and permitting procedures for the operation of outdoor recreation activities on private lands. It also suggested clarifying the definition of outdoor recreation to include, but not be limited to, bicycle and horseback riding, hiking, off-road sightseeing, fishing, tent-camping, and other such uses, which are dependent on open lands. These recommendations remain valid, but have not yet been initiated.
- The 2000 GP recommended amending the State Land Use District boundaries to remove Wailuā Golf Course and Kukuioolono Park from the Conservation District and place them in either the Urban or the Agriculture District. The Conservation District is inappropriate zoning for actively-used recreation facilities that serve urban communities. In addition, the Conservation District Rules prohibit golf courses, which makes it extremely difficult and costly to carry out planned improvements. It is recommended that a strip of land along the Wailuā beach be retained in the Conservation District, consistent with other coastal areas through the Island. This task has not yet been initiated.

16.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

Work on parks and recreation to be conducted by the GP Team includes:

- 1) The data within the 2000 GP pertaining to existing park sizes, categories and locations can be updated with the recently completed Parks Master Plan.
- 2) The GP could consider social equity issues. Do all communities have access to parks with a range of activities for children and the elderly?
- 3) Community centers may be considered for multiple purposes. For example, more centers with certified kitchens can serve as incubators. Community centers could also be used as satellite educational centers.
- 4) Update Table 8-9: County Parks, by District and Type from the 2000 GP with data from the 2013 *Parks and Recreation Master Plan*.
- 5) Discuss the goals and objectives in the *Parks and Recreation Master Plan* with the CAC, Planning Department and community.
- 6) The *Master Plan* includes district-specific priorities and implementation time frames that can serve as the basis for additional discussion regarding public health and multimodal land transportation initiatives.
- 7) Better understand the regulatory constraints that face park production and improvement.
- 8) The GP planning process can promote a discussion that goes beyond "how to maintain" parks, to "what kinds of places help create vibrant, healthy communities?"

16.5 RESOURCES

County of Kaua'i Department of Parks & Recreation. 2013. *Kaua'i Parks & Recreation Master Plan*.

17.0 GOVERNMENT OPERATIONS AND FISCAL MANAGEMENT

17.1 DEFINING THE ISSUES

The County's tax base is small compared to its land mass. The limited road network and distances between communities means that providing public services is expensive. Visitors need almost all the same services that residents receive. The government staff is already stretched thin, and yet the Island's population grows and their needs and expectations continue to increase. As a world-class tourist destination, Kaua'i is expected to have not only beautiful scenery, but the cleanest public facilities and most modern and attractive amenities. To do this requires working with the State, Federal entities and other counties.



While Kaua'i is managing its responsibilities, and continues to introduce new mechanisms that promote accountability and transparency, new regulations and reporting requirements are adding to the workload. Certain plans, as documented in this Paper, are outdated. Information and data gaps make decision-making difficult. Until 2002, Kaua'i County did not have a GIS database to assist in planning and relied on paper maps, but such systems, albeit useful, require regular updating. The collective proposed actions contained within the recently prepared technical reports and planning documents are likely more than the County (and its tax base) can afford or manage within the next 20 years.

To summarize, the major issues in Government Operations and Fiscal Management include:

- The GP planning process will need to prioritize actions because the government staff and resources are limited. Several recommended actions included in the 2000 GP have not yet been implemented.
- The technical reports prepared to date, already contain more recommendations than the government may be able to reasonably implement.
- Residents seek transparency in government, including but not limited to accessible performance measures.

17.2 OPPORTUNITIES

Systems that facilitate operations and fiscal management are in place. These include a streamlined government structure, management policies, and processes that assist with developing operating funds and capital improvement planning. Kaua'i has embraced a transparent reporting system and performance measures with the assistance of the Kaua'i Planning and Action Alliance. *Measuring What Matters for Kaua'i* includes critical community indicators that, in turn, facilitate decisions about the economy and the `aina. It includes qualitative and quantitative information

Holo Holo 2020: A plan that focuses on engaging organizations, businesses, residents and visitors to be part of creating an island that is sustainable, values our native culture, has a thriving and healthy economy, cares for all keiki to kupuna, and has a responsibility and user-friendly local government.

on significant aspects of Kaua'i to assess the current status and to identify trends over time. For the GP Update, they can be helpful in determining if the island is moving in desired directions. And if not, the indicators help to suggest where changes in policies, programs or resource allocations are needed to correct the course. In 2012, KPAA examined 49 indicators to assess the status of:

1. Economic and Business Climate
2. Public Education
3. Community Health and Well-Being
4. Civic Engagement
5. Natural Environment
6. Land Use and Rural Character
7. Culture and Arts

These progress reports are a step in the right direction, and more can be done to improve how the County government communicates with the public and uses data in its decision-making processes.

The Planning Department has developed a systematic method to work with other departments to organize capital improvement and service priorities by providing guidance on setting priorities. This has helped establish the basis for the six-year Capital Improvement Program and County appropriations. The Planning Department's efforts to evaluate departmental proposals and align them with the GP prior to submission to County Council has contributed to a more orderly and comprehensive decision-making. A more robust grant and foundation seeking effort, plus more partnerships with other governmental agencies will supplement the County's budget.

Hawaii's impact fee legislation (Chapter 46, Part VIII of Hawaii Revised Statutes Section 46-141 through 148 adopted in 1992) authorizes counties to adopt impact fees for any "types of public facility capital improvements specifically identified in a county comprehensive plan or a facility needs assessment study". Impact fees can be instituted to cover some of the costs of increasing public infrastructure and facility capacity in anticipation of population growth. According to the *Draft Infrastructure & Public Facilities Needs Assessment Study*, "Essentially, impact fees require that each developer of a new residential or commercial project pay its pro-rata share of the cost of new infrastructure facilities required to serve that development." The study recommends assessing uniform county-wide fees for transportation, parks (park and facilities or just facilities), fire, police and solid waste.

Depending on the type of land use – single family, multi-family, hotel/motel, commercial, industrial – the one-time fees range from approximately \$8,000 to \$20,500 per unit (i.e., dwelling, room, or 1,000 square feet) and could be collected at the building permit (or certificate of occupancy) stage. If such fees are adopted, the County would need to develop the administrative capacity to collect, account for, expend in a timely manner, and update regularly the fees. In addition to deciding whether to recommend the adoption of impact fees in the GP, other considerations will be necessary. For example, impact fees may be perceived as increasing the cost of living on Kaua'i.

To summarize, the major opportunities in Government Operations and Fiscal Management include:

- Under the theme of Kaua'i Kākou, the public sector, private sector and non-profits can assist with implementation of the GP actions.
- Methods to better document GP implementation progress can be included in the GP. Develop indicators of progress where they do not exist.
- Impact fees may be called for to assist with infrastructure capacity in anticipation of population growth.

17.3 HOW THE 2000 GENERAL PLAN TREATED GOVERNMENT OPERATIONS AND FISCAL MANAGEMENT

- The Government Operations and Fiscal Management topic will require significant attention because the 2000 GP text is quite limited. It was limited because of “Implementation”, public facility plans, and financing, the production of development plans for communities, and what the Planning Department’s role is in GP implementation, necessary zone changes, and GP monitoring and review.
- A role that the private sector or non-profits can play in helping implement particular components of the GP was not addressed in 2000 GP. As directed by the 2000 GP, the Planning Department has begun collaborating with community organizations to develop indicators and benchmarks to measure progress relative to the GP and to other community goals, as evidenced by KPAA Annual Community Indicators Report, Complete Streets Indicators Report, and collaborative work with the CHII.
- The Mayor’s various initiatives toward more transparency and improved governance are readily available and can be incorporated into the updated GP.

17.4 IMPLICATIONS FOR THE GENERAL PLAN UPDATE PROCESS

Work on government operations and fiscal management to be conducted by the GP Team includes:

- 1) Specify actions the government can take to implement the recommendations contained in the GP.
- 2) Identify how the government can work more effectively with the State to accomplish actions recommended in the GP.
- 3) Consider technological advancements and best design practices that offer cost-effective opportunities for implementation of GP actions.
- 4) Discuss public / private/ non-profit partnerships to implement actions in the General Plan and to increase participatory governance and Kaua’i’s self-sufficiency.
- 5) Consider a policy on impact fees and gather community feedback on it.

17.5 RESOURCES

County of Kaua’i. July 2013. Kaua’i’s Community Health Needs Assessment

Holo Holo 2020. *Annual Report 2013-2014, County of Kaua’i.*

Kaua’i Planning and Action Alliance. January 2014. *Measuring What Matters for Kaua’i: Community Indicators Report 2014.*

Group 70 International. August 1, 2014. *County of Kaua’i, Infrastructure & Public Facilities Needs Assessment Study (Draft).*

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18.0 OVERARCHING THEMES

The policy areas listed in this paper do not exist in isolation. They are inherently linked to one another. The General Plan includes all of these policy areas precisely because they are related. Actions in one policy area impact other policy areas. This paper attempts to capture the complexity of these links. The GP planning process will bring greater clarity to these issues, acknowledge the tension that sometimes exists among policy areas, and identify actions that can lead to the realization of the Vision for Kaua'i.

Below is a summary of the overarching themes that emerged from the review of policy areas. These themes reflect what has been heard from the public, County staff, and CAC to date, as well as the information contained in the technical reports and other planning documents.

KAUA'I KĀKOU: SUSTAINABILITY AND STEWARDSHIP

- ❖ Kaua'i has a finite ecological and financial carrying capacity. That is, its environmental systems (resources used and waste generated) and tax base (ability of the tax base to finance improvements) are not unlimited. Thus, they may limit or set directions for future growth. The General Plan will be governed by the overarching theme of Kaua'i Kākou: We're moving forward together to collectively plan for a more sustainable Kaua'i, in the spirit of malama 'āina (stewardship of the land). Coupled with the value of "Lōkahi", or collaboration and teamwork, "Kākou" promotes synergy when developing solutions and alternatives. A corollary to this is transparency and accountability starting with a honest look of where Kaua'i is in achieving the Vision laid out in the 2000 GP. The GP Update can provide a vision and tools for allowing for growth, positive change, and vibrancy within the context of preserving the rural and historic character and natural resources for today's population and future generations. Achieving a more healthy and resilient way of living involves the collective stewardship of resources.

INFRASTRUCTURE AND GROWTH MANAGEMENT

- ❖ Infrastructure systems - water, sewer, solid waste, roads- are close to or exceeding existing capacity. Unless expanded or improved, these infrastructure systems will limit development, job opportunities, and housing growth. Given Kaua'i's commitment to sustainable development, alternatives such as green infrastructure (systems and practices that use or mimic natural processes to manage wastewater and stormwater), complete streets design, and decentralized/distributed systems for electricity, water, wastewater treatment, and other services may be viable compared to traditional methods of providing such services. The extension of water and sewer lines often results in new development in a linear manner along the line; whereas, decentralized systems and green infrastructure can provide service in very specific areas. Regardless of how services are provided, decisions regarding growth and where growth occurs, including the infrastructure required by growth, must be directed by the GP, and not the availability or unavailability of infrastructure.

DISASTER-RESILIENT ASSETS

- ❖ Kaua'i's physical assets include components of the built and natural environment without which the entire island would suffer. Physical assets can be assessed in terms of their vulnerability to climate change and the like. Kaua'i has approximately 90 miles of coastline and 60 beaches, with more beach shoreline than any other Hawaiian island. Flooding and related hazards will be exacerbated by climate change and sea-level rise. Without actions that result in greater resiliency and the ability to adapt to existing and future hazards, the natural and built

environment are and will both be threatened. Roads and infrastructure close to the shore, including Kaua'i's landmark beaches, will be affected. Climate change and sea-level rise will negatively impact Kaua'i's major industries - agriculture and tourism. Land uses and design along the coast and some mauka areas will need policies for protection.

FUTURE USES OF AGRICULTURAL LANDS

- ❖ A large amount of land is zoned for agricultural purposes at a time when the industry is in transition. This includes 144,000 acres in the State Land Use Agricultural District, within which 80,000 acres, or 41%, are located in the 2000 General Plan Agricultural District. Concern regarding GMO-type crops and availability of water for irrigation purposes have opened discussions on what kinds of agricultural uses are needed and where. "What to do with agricultural lands" is a food security and resilience issue. Pressure to open lands for housing, as well as the desire to maintain open spaces, a workforce familiar with farming practices, and interest in locally produced food for both local consumption and export, may support growth boundaries and the maintenance of agricultural lands.

COST OF LIVING

- ❖ The cost of living continues to increase. Housing costs are extremely high, and the pace of production of affordable housing is inadequate to serve the need. In February 2015 the *Honolulu Star-Advertiser* reported that the median sale price for single-family houses on Kaua'i was \$730,000. Sixty percent of the housing inventory is affordable to less than 25% of residents, contributing to the concern that parts of Kaua'i are becoming places for only the wealthy. According to HUD income limits, the majority of the existing housing supply can only be afforded by households earning over 180% of the average median income. Kaua'i households spend an average of 62% of their income on housing and transportation. Kaua'i's utility rates, especially electricity, are some of the highest in the United States. Kaua'i residents are creatively managing the high cost of living by supplementing groceries with backyard food production, recycling, bartering, second and third jobs, bicycling/car-pooling to work, and turning living rooms into bedrooms for long-term guests and extended family. However, there is evidence that these solutions aren't enough. The number of homeless individuals and families is increasing. Youth are leaving rural communities or the Island to find better opportunities, leading to a deterioration in the community fabric. There are certain contributing factors, like shipping costs, that Kaua'i cannot control; but opportunities for the public/private/non-profit sector production and maintenance of affordable housing and reduction of transportation costs (the other large household cost) are available.

NEED FOR A MORE DIVERSE AND VIBRANT ECONOMY

- ❖ Both the existing 2000 General Plan and in the Comprehensive Economic Development Strategy (2010) for Kaua'i identify the need to encourage diverse economic growth opportunities that will provide living-wage employment to Kaua'i residents. This includes identifying convergences between smaller economic clusters with high growth potential, supporting entrepreneurs, small businesses, and increasing economic opportunity for all ages. By implementing policies and programs that meet shared needs with growth clusters, the GP has an opportunity to strengthen the island's economic base, and therefore also strengthen the County's ability to implement the GP vision.

PUBLIC, PRIVATE AND NON-PROFIT SECTORS PULLING TOGETHER IN THE SAME DIRECTION

- ❖ Many non-profit organizations and citizen groups are committed to Kaua'i's improvement over time. The 2000 General Plan focused predominantly on government services and actions paid for with tax revenue. Given the independent nature of Kaua'i's residents and desire for greater self-sufficiency, the energy of existing non-governmental entities can be harnessed to implement actions proposed in the General Plan. An option worth examining, given the limitations of the existing tax base and the GP Update's over-arching theme of Kaua'i Kākou, involves more County partnerships with non-profits and the private sector, as well as fee for service programs and privatization of services for more inclusive stewardship.

VIBRANT, WALKABLE TOWNS AND HEALTHY COMMUNITIES

- ❖ Kaua'i's historic, walkable towns surrounded by open spaces are the backbone of future development. They not only draw visitors, but serve as gathering places for residents. The idea is to preserve and improve the existing urban fabric with appropriate infill and age-friendly public spaces to promote safe and pleasant multi-generational communities. Complete streets are needed such that people can walk and bike to and within town centers. Mixed-use, dense communities where people shop, live affordably, work and play contribute to healthy communities.

SUMMARY

The table below shows how the overarching themes capture the various policy areas in the GP contract.

Overarching Themes	Policy Areas
<p>1. SUSTAINABILITY AND STEWARDSHIP: How to protect the environment and quality of life for today's population and future generations?</p>	<ul style="list-style-type: none"> • Sustainable Kaua'i • Land Uses & Growth Management • Tourism • Economic Development • <i>all the rest!</i>
<p>2. INFRASTRUCTURE AND GROWTH MANAGEMENT: Infrastructure systems are close to or exceeding existing capacity, thus limiting development and, in turn, job growth.</p>	<ul style="list-style-type: none"> • Infrastructure & Services • Land Uses & Growth Management • Public Health • Renewable Energy • Economic Development
<p>3. DISASTER-RESILIENT ASSETS: The impact of sea-level rise and climate change on agriculture, tourism, and infrastructure.</p>	<ul style="list-style-type: none"> • Economic Development • Climate Change & Hazards • Natural Resource Management • Cultural & Heritage Resources • Parks & Recreation
<p>4. AGRICULTURAL LANDS: How much, whether to designate, how to protect?</p>	<ul style="list-style-type: none"> • Agricultural Lands • Open Space & Access • Affordable Housing • Cultural & Heritage Resources • Public Health • Economic Development
<p>5. COST OF LIVING: Maintain / produce affordable housing and reduce transportation costs.</p>	<ul style="list-style-type: none"> • Affordable Housing • Multimodal Transportation • Government Operations & Financing • Coordination with the State • Coordination with DHHL
<p>6. NEED FOR MORE JOBS AND A DIVERSE ECONOMY: How to diversify?</p>	<ul style="list-style-type: none"> • Economic Development • Infrastructure • Multimodal Transportation
<p>7. KAUA'I KĀKOU: PUBLIC, PRIVATE AND NON-PROFIT SECTORS PULLING TOGETHER IN THE SAME DIRECTION: How to harness the energy of existing non-governmental entities as a means of implementing GP actions.</p>	<ul style="list-style-type: none"> • Government Operations & Financing • Coordination with the State
<p>8. VIBRANT, WALKABLE TOWNS AND HEALTHY COMMUNITIES How to maintain and improve the compact urban fabric?</p>	<ul style="list-style-type: none"> • Sustainable Kaua'i • Land Uses & Growth Management • Public Health