



SOUTH KAUAI COMMUNITY PLAN

KŌLOA • PO'IPŪ • KALĀHEO • 'ŌMA'O • LĀWA'I

EXECUTIVE SUMMARY

Prepared by:



With:



July 2015

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Mahalo nui loa to the dedicated staff of the County of Kaua’i Planning Department and their associates from sister agencies who participated in the development and fine tuning of this document. We also want to thank the countless hours spent by our Citizens Advisory Committee and members of the public who helped craft the vision, policies, and direction for the future of South Kaua’i. This project would not be possible without you.

Citizens Advisory Committee

- Louis Abrams, Kōloa Community Association
- Chip Bahouth, Starwood Resorts
- Peter Baldwin/John Horwitz/Rick Robinson, EA Knudsen Trust
- Ted Blake, Kōloa community representative
- Maxine Correa, Kalāheo community representative
- Russ Hasegawa, Kōloa Elementary School
- Arryl Kaneshiro, ‘Ōma‘o community representative
- Lila Metzger, Kalāheo Community Association
- Jody Kjeldsen, Po’ipū Beach Resort Association
- Marty Kuala, Mālama Māhā‘ulepū
- Sam Lee, Po’ipū community representative
- Rupert Rowe, Kāneiolouma Heiau
- Tom Shigemoto, A&B Properties
- Scott Sloan, National Tropical Botanical Garden
- David Hinazumi, Grove Farm Properties

County of Kaua’i Planning Department

- Michael A. Dahilig, Planning Director
- Marie Williams, Project Manager
- Peter Nakamura (in memoriam)
- Ashlee Jimenez (former project assistant)
- Marisa Valenciano
- Lee Steinmetz, Transportation Planner
- Ian Jung, County Deputy Attorney
- Ruby Pap, UH Sea Grant Land Use Agent

Subconsultants

- Opticos Design, Inc., Form-Based Code
- Cultural Surveys Hawai’i, Archaeology
- Fehr & Peers, Traffic & Transportation
- The Limtiaco Consulting Group, Civil Engineers
- Ron Ho & Associates, Inc., Electrical Engineers

DEDICATION

Peter Nakamura (July 17, 1953–November 25, 2013)

Dedicated to the memory of Peter Nakamura, Manager for the Long Range Division of the County of Kaua’i Planning Department, an exemplar of public service, whose intelligence, diligence, and kindness blessed all those he worked with.

Stella Burgess (January 11, 1953–February 18, 2014)

For Aunty Stella Burgess, whose never-fading aloha will be remembered by the people she blessed and in the places she kept. A source, a pillar, a steward of Hawaiian culture for the South Shore community and island.

DISCLAIMER

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1 INTRODUCTION

The South Kaua'i Community Plan (SKCP) is an update to the 1978 Kōloa-Po'ipū-Kalāheo Development Plan. It is a long-range plan with a 20-year time horizon, from 2015 to 2035, and is one of six regional plans for the island referred to as Development Plans in the County of Kaua'i Charter, Article XIV (Figure 1-1). The plan is driven by a community vision that calls for balanced, responsible development that enhances existing communities and preserves the local rural lifestyle. It provides guidance for the future growth and physical development of the South Kaua'i region. The plan will direct public policy and land use decision making to address growth management and embrace themes of sustainability, urban form, and resource protection.

1.1 PLANNING AREA

The boundary of the South Kaua'i Community Plan planning district (Planning District) generally follows the Kōloa judicial district boundary except along the western boundary which is defined by Wahiawa Gulch. The eastern boundary follows Hā'upu mountain ridge, Knudsen Gap, and Mount Kahili (Figure 1-1). The Planning District includes the towns of Po'ipū, Kukui'ula, Kōloa, Ōma'ō, Lāwa'i, and Kalāheo and encompasses an area of approximately 31,300 acres (49 square miles). It is home to the second largest population on the island with 11,000 residents.

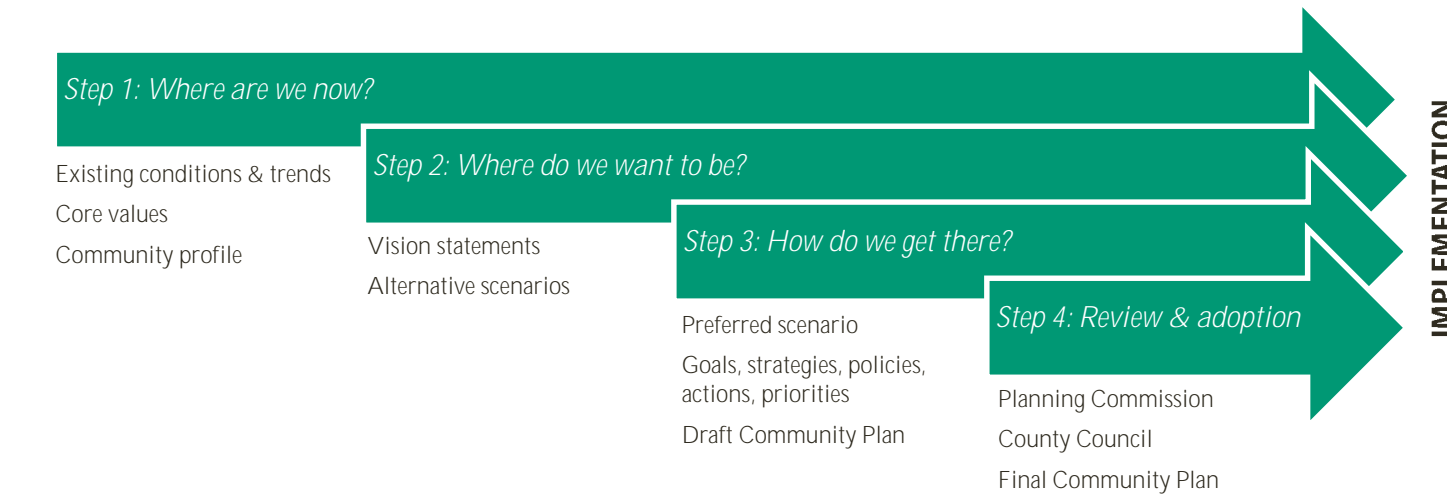
Figure 1-1: South Kaua'i Planning District



1.2 PLANNING PROCESS

There are four major steps in the development of this community plan (see Figure 1-2). The first involves background research and developing an understanding of the community's core values and existing conditions. This information was compiled into a Community Profile that is available as a separate document. The second step includes the development of vision statements for each of the major communities and the Planning District as a whole. Alternative scenarios were also investigated. Step three narrows down the alternatives into a preferred development scenario with accompanying policies, guidelines, priorities, and action plans summarized into a draft community plan. The final step involves the adoption process which includes Planning Commission and County Council review and approvals.

Figure 1-2: Four Step Planning Process



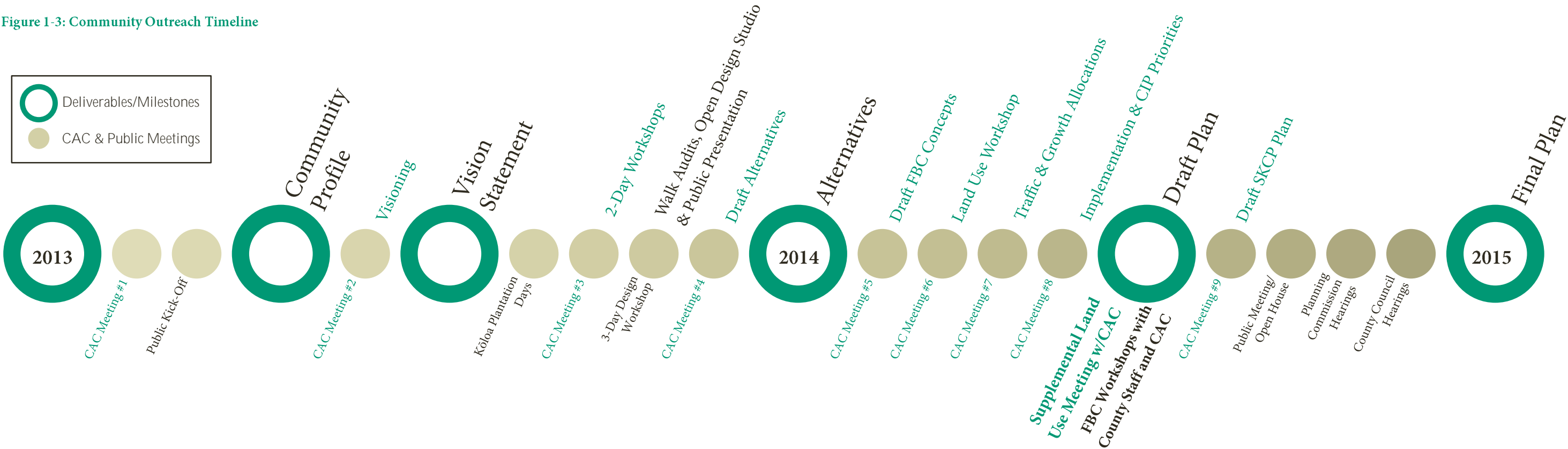
1.3 COMMUNITY OUTREACH

Community involvement is critical to helping the planning process create an informed vision for the future of South Kaua'i. Initiated in April 2013, this plan is the result of an extensive public outreach process that allowed for community input at various stages of plan development. A summary of the community outreach process is provided in Appendix A of the South Kaua'i Community Plan.

1.3.1 Citizens Advisory Committee

As part of the planning process a Citizens Advisory Committee (CAC) was formed to provide balanced representation from different community and business interests as well as representatives from the different towns within the planning area. The 15-member Citizens Advisory Committee was appointed by the Mayor and tasked to advise the project team in the development of the community plan. They have been instrumental in developing the land use and multimodal transportation maps and various concepts presented in this report. Eleven CAC meetings were held throughout the planning process and the CAC has reviewed and commented on drafts of this report. The community plan is a compilation of their vision as representatives of their beloved South Kaua'i communities and the desire for a better tomorrow for generations to come.

Figure 1-3: Community Outreach Timeline



1.3.2 Public Meetings

Community input and comments were sought at various times and locations from South Kaua'i residents and stakeholders. First, a series of public kick-off meetings were held. 6,326 "wish cards" were mailed as invitations to the events in Kōloa, Kalāheo, and Po'ipū.

Then, a series of small group meetings and interviews were conducted. The Kōloa Plantation Days provided another opportunity for community input. Next, community members participated in a 3-day intensive design workshop to help develop alternative plan scenarios. Lastly, the planning process concluded with a public open house meeting to share the draft plan prior to Planning Commission and County Council meetings required for adoption. Figure 1-3 shows the schedule of public events woven between the CAC meetings and deliverables.



Mapping stations at the kick-off meetings provided an opportunity for the public to identify issues and opportunities through the region. (Photo Credit: Dennis Fujimoto/The Garden Island)

1.3.3 Online and Print Outreach

Website – A website was created as a way to easily disseminate information and updates about the plan to the community. The website provides an overview of the plan, links to resources, document downloads, a mailing list sign-up, calendar of events, and an image gallery. The address is: www.southkauaicmp.com.

Surveys – Public surveys were administered to understand the most important elements of the plan as identified by the community. The online versions posted were identical to the printed surveys distributed at workshops and events, and the results were tabulated together. Two online surveys were distributed through the South Kaua'i community plan website and hosted by SurveyMonkey.com.

Photo Campaign – An Instagram photo campaign was launched at the Kōloa Plantation Days festival to provide another way for the younger community to get involved in the planning process. The online photo campaign was initiated to attract a larger audience and expand community outreach. Entrants were asked to submit photos via Instagram showing their most cherished places in South Kaua'i or themed places as determined by the project team. Winning photo submissions were selected and are featured here in the South Kaua'i Community Plan.

Wish Cards – As noted, 6,326 wish cards were mailed to all South Kaua'i residents as invitations to the three public kick-off events. The cards asked residents to express their "wish for South Kaua'i." Some participants wrote text descriptions, others drew pictures. Index cards, distributed at the community meetings, served the same purpose.

Social Media – The County of Kaua'i Planning Department's Facebook page was used as a platform to keep the community informed and updated of the planning process and to gain feedback.

2 COMMUNITY VISION

2.1 VISION STATEMENTS

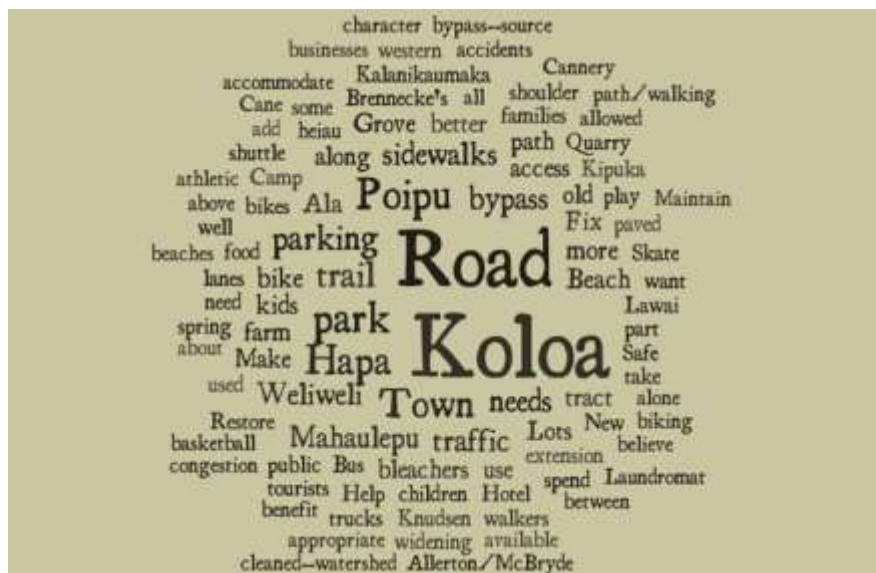
The vision statements for the overall South Kauaʻi Planning District and the five individual towns were developed from the nearly 700 individual comments collected during the community kick-off events and outreach. "Word clouds" generated from the comments highlighted the most important issues and inspired the statements. The overall vision for the South Kauaʻi Community Plan region is provided below. The vision statements for the individual towns are shown in bold in the following sections and capture the unique hopes for the future of each town. The current vision statements are followed by the Kauaʻi General Plan's vision statements from the 2000 update, shown in italics, and the word clouds.

South Kauai 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.

2.1.1 Kōloa

KŌLOA will be a thriving commercial and residential community that maintains its rural feel and historic “old town” charm by preserving, enhancing and protecting its vast cultural treasures.

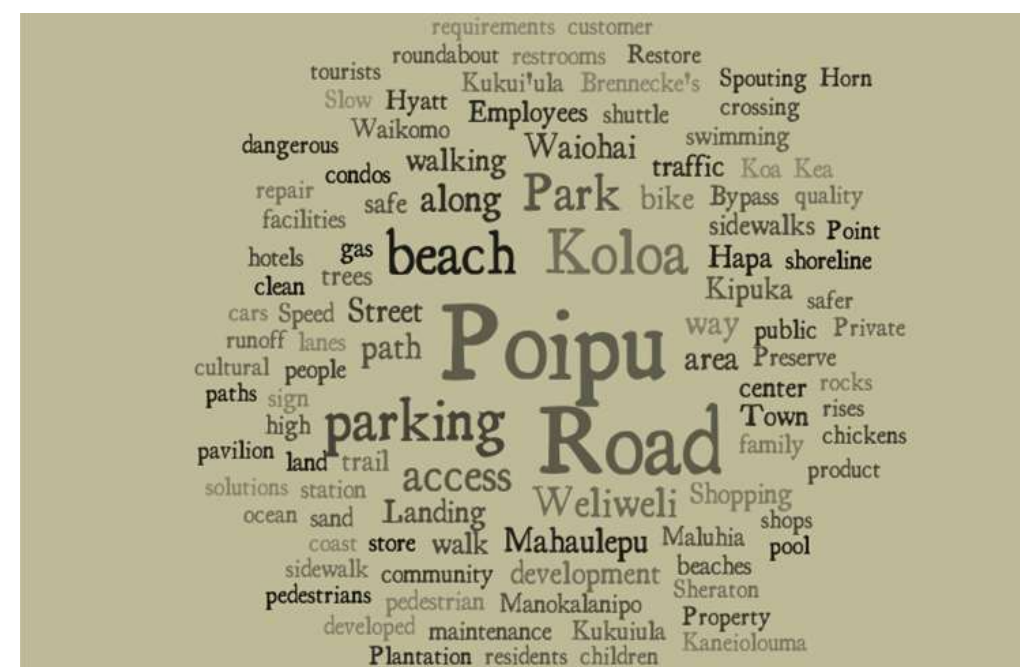
Kōloa's history is preserved through the plantation/western architecture in the town core, its historic churches, and other historic buildings. In the town core, renovations and new buildings follow the style of "Old Kōloa Town." Shaded by building canopies and large trees, pedestrian walkways connect "pockets" of public parking at each end of town. The town provides Kōloa and Po'ipū residents with vital services such as grocery stores, the Post Office, and the Neighborhood Center. Both visitors and residents are also attracted to Kōloa because of its unique shops, restaurants and taverns. Outside of town, the former Kōloa Sugar Mill is in active use as a light industrial center and a food processing and packing facility. Coffee, papaya and other export crops are being grown on former sugar lands.



2.1.2 Po'ipū

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.

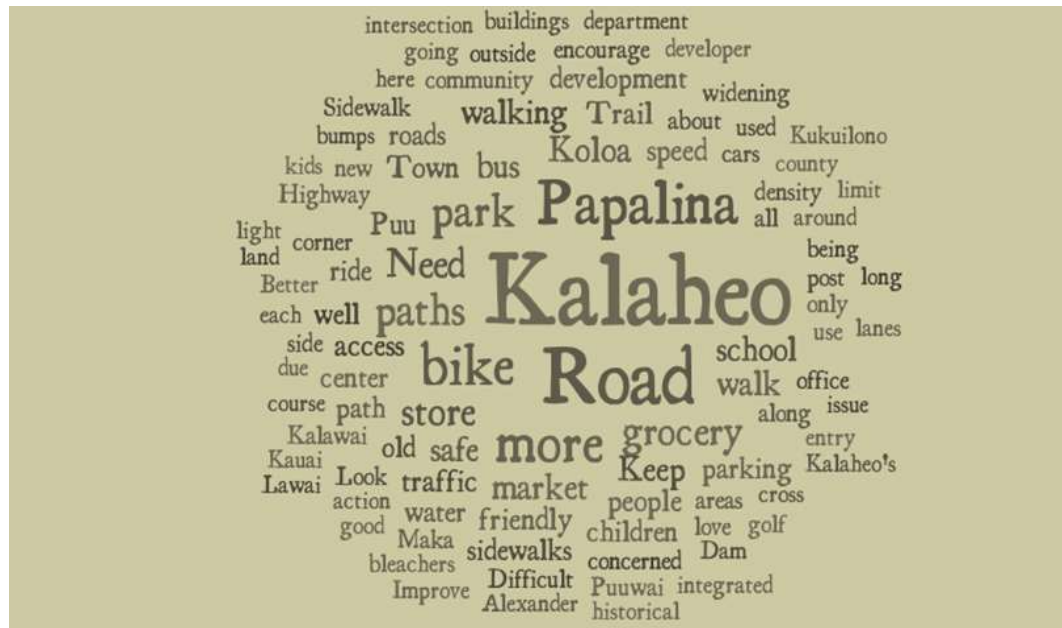
Po'ipū is a beach resort that accommodates both a residential community and the island's largest Visitor Destination Area. Supported by the growing community of Kukui'ūla to the west and by historic Kōloa Town to the north, Po'ipū is home to about 40 percent of Kaua'i's resort accommodations and is a 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. Walkers, joggers and bicyclists enjoy the continuous pedestrian/bicycle pathway that runs along the shoreline from the Spouting Horn to Māhā'ulepū.



2.1.3 Kalāheo

KALĀHEO will remain as a residential community enhanced by a neighborhood-scaled commercial center and supported by small local businesses.

In Kalāheo, numerous homes dot the hillsides mauka of town and around Kukuilono Park. The population of Kalāheo is growing, as homestead and agricultural subdivisions created in the 1970's 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 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.

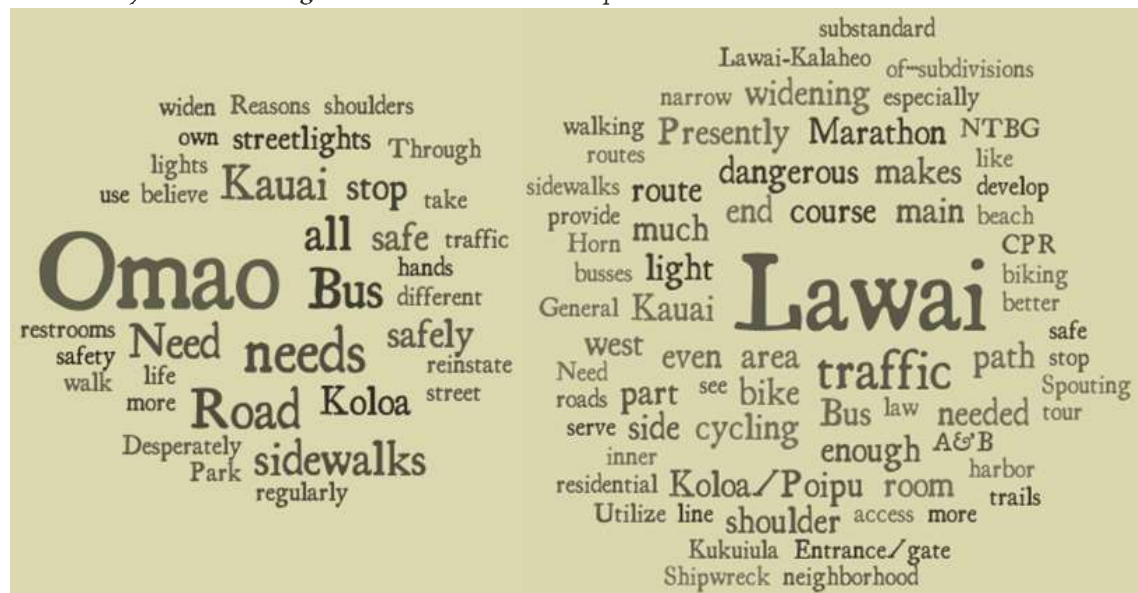


2.1.4 'Ōma'o and Lāwa'i

'ŌMA'O will maintain its value as a small rural residential community.

LĀWA'Ī will remain a rural crossroads with a limited commercial area centered on the Post Office and Old Cannery.

Ōma'o and Lāwa'i are valued as small rural residential communities. Pasturelands, hills and stream valleys give variety to the landscape and create separation between settlements, preventing the appearance of sprawl. 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.



2.2 GUIDING PRINCIPLES

The vision for South Kaua'i will be implemented through the following guiding principles.

1. **Watershed Management** - Manage the watershed mauka to makai in recognition of the ecosystem services and interrelatedness of nature.
2. **Cultural Stewardship & Interpretation** - Protect and care for the natural, historic, and cultural features as living sites. Weave these rich resources into a story of the region, creating a sense of place that connects people to the past and allows them to be integrated into modern life.
3. **Hazard & Climate Risk Management** - Prepare for potential impacts due to natural hazards and climate change.
4. **Compact Walkable Neighborhoods** - Focus growth on compact, defined settlement areas to reduce sprawl, enhance the sense of community, maintain the rural character of the place, and preserve open space. Develop Kōloa, Kalāheo, and Poʻipū Gateway town cores as vibrant mixed use places in concert with their historic character and their community context.
5. **Multimodal Transportation System** - Develop a multimodal pedestrian-friendly transportation system to reduce dependence on the automobile, improve safety, and promote a healthy lifestyle.
6. **Sustainable Resorts & Tourism** - Develop the Poʻipū Resort area as a sustainable visitor destination—one that provides eco-friendly products and services, leverages local businesses, relies less on cars, and is centered on a vast historic area and culturally rich coastline.
7. **Economic Development Opportunities** - Emphasize the competitive advantage assets of the Planning Area--sandy beaches, ocean conditions and resources, sunny climate, photovoltaic (PV) energy potential, natural and cultural points of interests, irrigated important agriculture land, and existing network of trails and roads. Encourage local food production, small business development, and workforce development.
8. **Diversity of Housing Types** - Support workforce housing development within and around town cores.
9. **Public Infrastructure and Facilities** - Prioritize to meet basic needs and support economic development.

3 COMMUNITY PROFILE

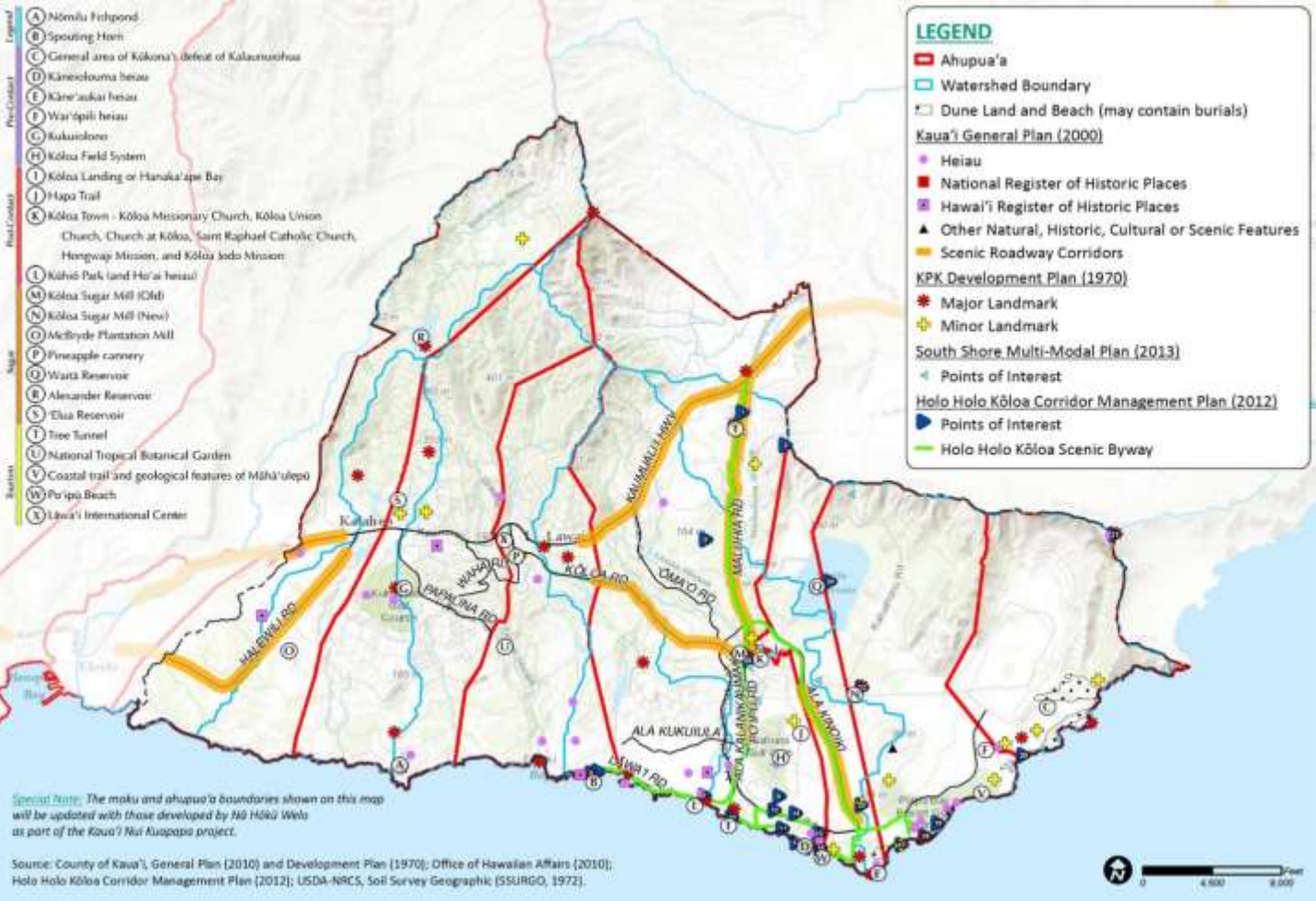
The Community Profile summarizes available information to describe the existing conditions of the South Kaua'i Community Plan Planning District. This information, which was gathered during the initial phase of the process, provided an objective foundation to analyze issues, develop a vision, and brainstorm alternative scenarios and policies. The following sections describe the rich history, natural resources, and the existing conditions of the Planning District.

3.1 CULTURAL AND HERITAGE RESOURCES

In her book, *The Kaua'i Album*, Carol Wilcox states that “the history of Kōloa is in many ways Hawai'i's history in a microcosm” (1981). In fact, Wilcox's statement can apply to all of South Kaua'i, from Kalāheo to Lāwā'i to Kōloa and Po'ipū. South Kaua'i was home to a large pre-contact population that supported itself through a unique agricultural system. It is the setting of numerous mo'olelo, or legendary stories, and a few examples are notable for their association with some of the region's prominent geographic features. It is the birthplace of Prince Kūhiō and the home of eminent pre-contact royalty. It was an important port for the whaling and sandalwood industries and hosted the first commercial sugar mill in Hawai'i. Today, it attracts thousands of tourists annually to its shores and world-class resorts. South Kaua'i provides a rare opportunity to share the story of Hawai'i by experiencing the features of a single region.

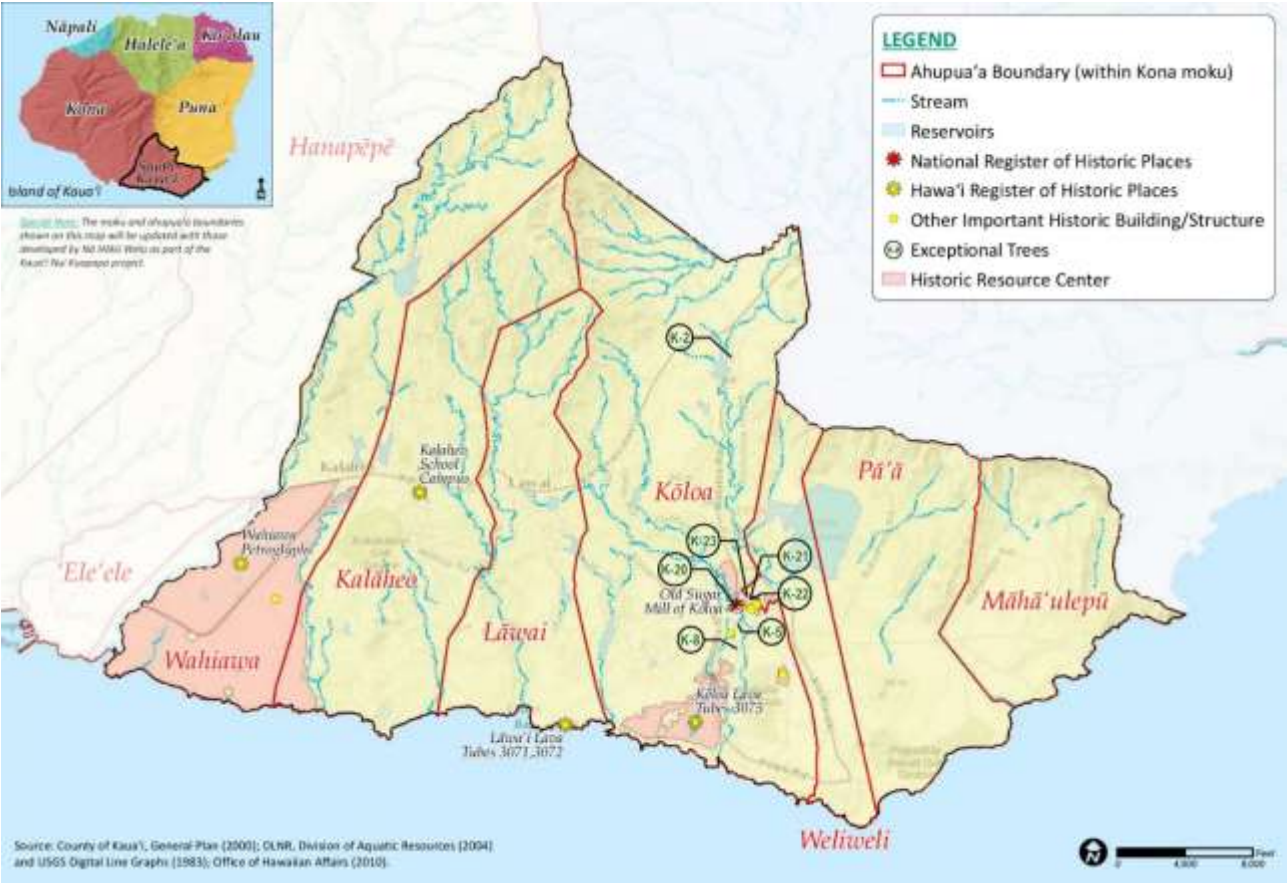
Figure 3-1 shows the richness of South Kaua'i's history. A list of these sites is provided in Appendix B of the SKCP report.

Figure 3-1: Heritage Resources Map



More than 1,000 archaeological sites have been documented within the Planning District. Archaeological evidence indicates that most of the ahupua'a was home to a number of traditional Hawaiian activities such as agriculture, habitation, transportation/pathways, religious activities including burial interment, and resource gathering. South Kaua'i has a large number of heiau, the most significant of which include Kāneiolouma in the ahupua'a of Kōloa, Kāne'aukai in Weliweli, Wai'ōpili in Māhā'ulepū, and the destroyed Kukuilono (“Lono's light”) in Kalāheo. Remnants of the more recent sugar and ranching industries, such as ditches, flumes, sugar mills, pipelines, barbed wire fences, stone walls, and structural foundations, also appear frequently in the archaeological record of the ahupua'a.

Figure 3-2: South Kaua'i Ahupua'a and Registered Historic Places



Within the Planning District, there are five sites on the Hawai'i Register of Historic Places, which formally recognizes districts, sites, structures, buildings and objects and their significance in Hawai'i's history, architecture, archaeology, engineering and culture (Figure 3-2). They are:

- Wahiawa Petroglyphs (SHPD #30-09-3169)
- Lāwā'i Lava Tubes (SHPD #30-10-3071, -3072)
- Kōloa Lava Tubes (SHPD #30-10-3075)
- Old Sugar Mill of Kōloa (SHPD #30-10-9302)
- Kalāheo School Campus (SHPD #30-10-9391).

The Old Sugar Mill of Kōloa is also listed on the National Register of Historic Places as a National Historic Landmark.

The County of Kaua'i is also engaged in a cultural and historical project called “Kaua'i Nui Kuapapa: Talking about Our Island” to identify the borders of the original six moku of Kaua'i and Ni'ihau, as well as the estimated 54 ahupua'a land divisions. The South Kaua'i Planning District is a portion of the Kona Moku. The moku and ahupua'a boundaries may differ considerably from the modern boundaries as they will be based on maps and information from the early 1800s to reflect King Kaumuali'i's era. The maps will be tied to historical and cultural information, which will be made available via a public information app linked to signage posted at moku and ahupua'a boundaries. The information will also be integrated into Kaua'i public school curriculum.

3.2 PHYSICAL ENVIRONMENT

South Kaua'i has a vast physical environment, ranging from the top of Kapalaoa Summit (3,267 feet) down to the plains where it gently slopes out to the coastline. Hā'upu Ridge is the dominant topographical feature on the east side of the Planning District, rising approximately 2,300 feet above mean sea level.

The geology of the Planning District is dominated by cinder cones (pu'u), ash beds, and olivine deposits resulting from the Kōloa Volcanic Series, which occurred 1.5 million years after the island's main shield-building phase. Other areas of geological interest include the Makauwahi Cave, which is the largest limestone cave in the state of Hawai'i, and Spouting Horn, a blowhole originally called Puhi (eel) located just east of Kuku'i'ula Bay.

The soils of the Planning District are primarily Oxisols, which are reddish in color, resistant to weathering, and have very low native fertility. Just over a quarter of the Planning District's acreage is considered “highly erodible land” and much of the remaining land as “potentially highly erodible land.” A portion of the Planning District has been classified as having a high level of potential agricultural productivity. Most of the District has been designated as Important Agricultural Lands under HRS Chapter 205, Part III.

There are two vegetation zones in the Planning District: wet forest above the 300' elevation and lowland dry and mesic forest below 300'. Most of the dryland and mesic forest has been transformed by human activity, but a significant portion of the native wet forest and remnants of dry native forest and shrubland remain. The U.S. Fish and Wildlife Service identified both plant and invertebrate “critical habitats” in the Planning District. Invasive alien species are prevalent throughout the Planning District, even in protected critical habitat areas, and continually threaten the integrity of native biodiversity. There are also seven Exceptional Trees designated in South Kaua'i and protected by ordinance from any damage or removal (KCC §22-5). They are mapped in Figure 3-2 and listed in Table 3-1. They are also included in the SKCP land use map for reference.

Table 3-1: South Kaua'i Exceptional Trees

No.	Tree	Location
K-2	Tree Tunnel (<i>Eucalyptus Robusta</i>)	Both sides of Maluhia Road (TMKs 2-7-02:01 and 2-8-01:05)
K-5	Baobab (<i>Adansonia digitata</i>)	Behind Kōloa Missionary Church, southeast corner (TMK: 2-8-10:01)
K-8	Earpod (<i>Enterlobium cyclocarpum</i>)	In front of Kaua'i Mortuary on Po'ipū Road (TMK: 2-8-10:45)
K-20	Monkey Pod (<i>Samanea saman</i>)	Behind old Yamamoto Store near river (TMK: 2-8-07:16)
K-21	Monkey Pod (<i>Samanea saman</i>)	Honpa Hongwanji Mission and Kōloa Early School (TMK: 2-8-04:56)
K-22	Monkey Pod (<i>Samanea saman</i>)	Honpa Hongwanji Mission and Kōloa Early School (TMK: 2-8-04:56)
K-23	Monkey Pod (<i>Samanea saman</i>)	Behind Kōloa Early School (straddles TMKs 2-8-04:03 and 53)

Several designations and management systems provide various degrees of protection of the Planning District's natural resources. The Conservation District encompasses nearly all of the remaining native vegetation. Within the Conservation District is the Kanaele Preserve, the Līhu'ē-Kōloa Forest Reserve, and land managed by the Kaua'i Watershed Alliance.

Due to its large size and wide range of elevations and microenvironments, the climate of the Planning District is quite varied. Located on the drier, leeward side of the island, the mean annual rainfall in the Planning District ranges from 35” at the coast to 160” at the highest mauka elevations. During the summer months (May-September), the sun is higher in the sky, temperatures are warmer, and the trade winds occur more steadily. The winter months (October-April) are cooler, trade winds are less frequent, and wide-spread storm rainfall is more common. Brief periods of intense rainfall can lead to flooding and soil erosion. The rainfall intensity for a 10-year storm in Kōloa is approximately 2.5 inches per hour.

The Planning District has six watersheds with eleven streams: three perennial streams and eight intermittent streams. All of the perennial streams are listed as impaired by the State Department of Health because they do not meet certain state water quality standards. There are two large reservoirs in the Planning District: Alexander Reservoir, which is currently home to a 1,000 kilowatt hydroelectric power plant, and the Waitā Reservoir, which was once a marsh and is fed from Ku'ia Stream.

Groundwater occurs as basal, perched (water bodies “resting” or “settled” within rock), and most likely dike-impounded water. The Planning District is mostly encompassed by the Kōloa Aquifer System with a small portion in the Hanamā'ulu Aquifer System. The estimated sustainable yield of the Kōloa Aquifer System is 30 million gallons per day (MGD), and current pumpage is estimated at only 0.342 MGD. However, the State Commission on Water Resource Management warns that due to Kaua'i's geology, it can be difficult to generate a steady supply of water by pumping water from the aquifers.

The energy generating potential of the solar and wind resources of the Planning District is significant. Solar radiation in the Planning District is among the highest on the island, ranging from 300 cal/cm2/day in the mauka regions to 450-500 cal/cm2/day along the coast. Tradewinds blow 70% of the time with high-wind areas at the crests of lower mountain ridges.

3.3 COASTAL ENVIRONMENT

The south-facing Planning District generally has higher surf during the summer months from South Pacific swells and occasionally during the winter months from Kona storms.

For most of the nearshore waters of the Planning District, the State Department of Health (DOH) water quality classification is Class A. Between Ho'ai Bay and Makahū'ena Point, the DOH classified the nearshore waters as Class AA, which are to “remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions.” In Class A waters, the best degree of treatment is required and the discharge must be compatible with recreational uses and protection of fish, shellfish, and wildlife. Under the inland water classifications, Class I waters similarly have the goal of remaining as pristine

According to the 2009 study performed by the Coastal Geology Group from the UH School of Ocean and Earth Sciences and Technology (SOEST), shoreline change rates along South Kaua'i shorelines ranged from a small amount of accretion to erosion at 1-2 feet per year. Rocky shorelines and other stable shorelines were not included in the study.

Existing shoreline public access points are shown in Figure 3-3. There are seventeen accesses with legal documents, which give the public the right to use the accesses, or easement documents, which are close to being recorded. The map also includes accesses that have easement documents executed (or signed) but not recorded.

Figure 3-3: Existing Public Shoreline Accesses



3.4 BUILT ENVIRONMENT

South Kua'i is comprised of five distinct towns—Kōloa, Po'ipū, Kalāheo, Lāwa'i, and 'Ōma'o. New development in Kukui'ula extends Po'ipū to the west.

Place Types. Very few of the towns are considered walkable at this time due to limited and disconnected sidewalks, few marked pedestrian crosswalks, and the barrier of Kaumuali'i Highway. A map of the sidewalks inventoried in 2010 is provided in Figure 3-4.

Most of the towns have a rural character with a small commercial and retail area consisting of restaurants, tourist-oriented shops, food markets, and other small businesses. Po'ipū/Kukui'ula and pockets of Kalāheo have the most potential for larger, taller developments depending upon infrastructure service. Kōloa, 'Ōma'o, and Lāwa'i are restricted to smaller-scale infill development.

Figure 3-4: Existing Sidewalk Inventory (Kua'i Planning Department 2010)



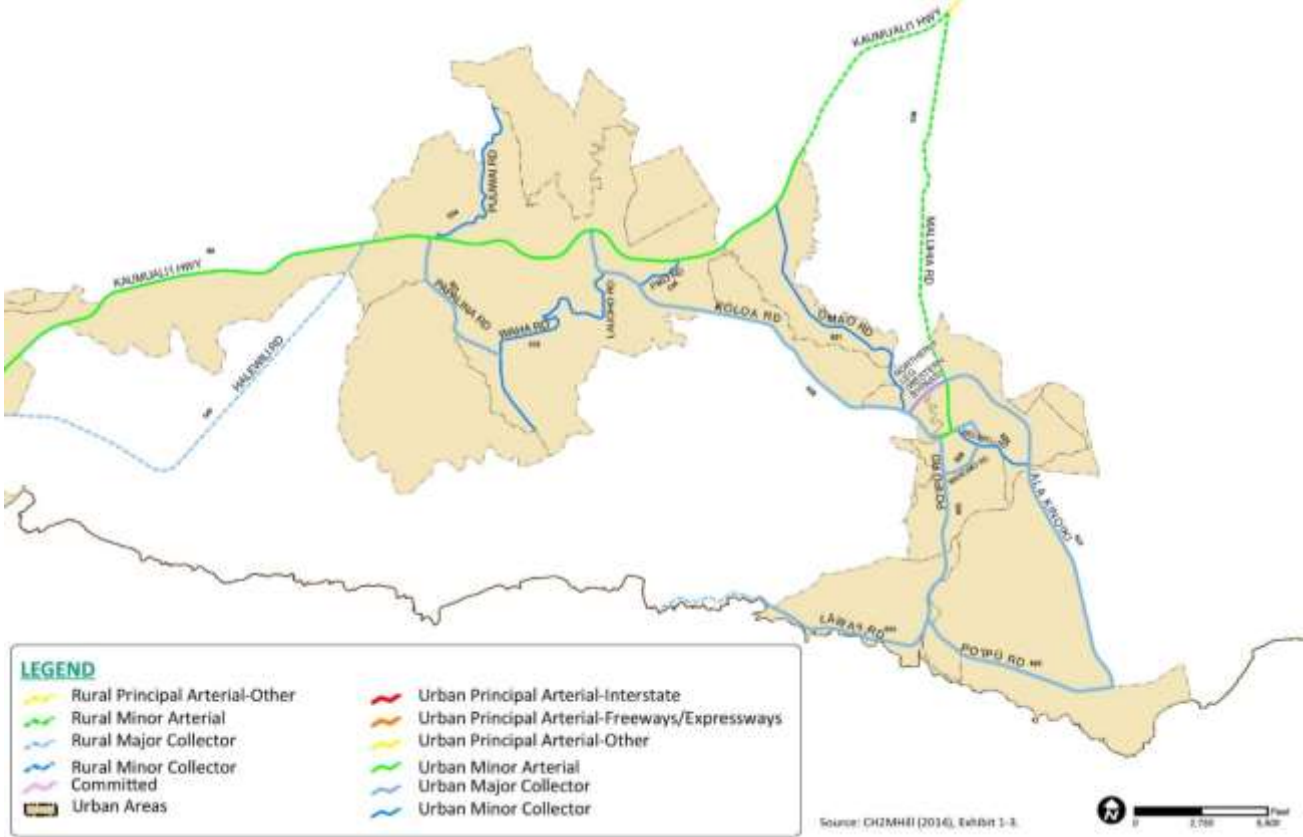
Roads. The Planning District is served by Kaumuali'i Highway (Route 50), one of two major highways on Kua'i. Kaumuali'i Highway, a two-lane state arterial, begins at its intersection with Kūhiō Highway (Route 56) in Līhu'e and ends at Mānā on the west side of Kua'i. Between Puhi and Līhu'e, the highway has been widened to 4 lanes. It is the only state or county roadway categorized as a National Highway System facility within the Planning District. However, there are other public roadways eligible for Federal Highway Administration (FHWA) funding, called federal-aid highways. They are listed in alphabetical order below and shown in Figure 3-5:

- Ala Kinoiki
- Kōloa Road
- Halewili Road
- Kaumuali'i Highway
- Lāwa'i Road west of Kukui'ula Harbor
- Laoho Road-between Waha Road and Kōloa Road
- Maluhia Road
- Māhā'ulepū Road-between Weliweli Road and Ala Kinoiki
- Northerly Leg of Western Bypass (committed to construction)
- 'Ōma'o Road
- Papalina Road
- Po'ipū Road
- Piko Road
- Pu'uwai Road
- Waha Road
- Waikomo Road
- Weliweli Road

There are two traffic signals in the Planning District: one at the Kaumuali'i Highway and Papalina Road intersection and the other at the intersection of Kaumuali'i Highway and Kōloa Road.

Previous roadway plans and traffic studies have proposed a number of improvements or additions to the road network in the Planning District. Most of these prioritized traffic flow over different modes of transportation in their analyses. The transportation study for the SKCP considers all modes of transportation for its analyses and is summarized in Section 4.3.

Figure 3-5: Federal-Aid Highways



Public Transportation. The Kaua'i Bus is the only public transit system serving the island of Kaua'i and is managed by the County of Kaua'i Transportation Agency. Two of the agency's seven fixed route bus services operate within the South Kaua'i Planning Area—the Kekaha to Lihue mainline and the Kōloa Shuttle, which circulates through residential neighborhoods in Kalāheo, Kōloa and Po'ipū. Currently, riders must transfer in Kalāheo between the two lines and there is no service to Ōma'o (see Figure 3-6).

Figure 3-6: Existing Public Transit Routes



Bike Facilities. The only districts on Kaua'i with any bicycle infrastructure are the Lihue and East Kaua'i Districts, and much of this infrastructure is disconnected. However, cyclists are allowed to use any of the island's public roads; some of which are fairly safe for bicycling, while others can be difficult. In South Kaua'i, Maluhia and Po'ipū Roads have high traffic volumes and/or high traffic speeds with little to no shoulder space (Charlier 2012).

Pedestrian Facilities and Safe Routes to Schools. In 2007, the Kōloa-Po'ipū Area Circulation Plan analyzed existing pedestrian facilities and identified Kōloa Town safety improvements as the highest



priority, primarily to provide safe passage to students walking to and from Kōloa School. They recommended adding sidewalks along Waikomo Road and Po'ipū Road for Kōloa School students and improving sidewalks through the downtown core. It also recommended adding sidewalks along all of Po'ipū Road, most of Ala Kinoiki, and Ho'owili Road between Po'ipū Road and the Makai Promenade.

The principal at Kalāheo Elementary has voiced a similar concern with the narrow sidewalk on Pu'u Road and no sidewalks on the lower part of Papalina Road from Waha Road leading in to town.

The County of Kaua'i has been successful in acquiring Safe Routes to Schools (SRTS) funds for pedestrian and bicycle improvements for South Kaua'i as well as other communities around the island. Within the Planning District, SRTS has funded the installation of rapid flashing crosswalk beacons at Kalāheo Elementary School, and the installation of lighted crosswalk systems and the restriping of Po'ipū Road in front of Kōloa Elementary School to add a bike lane and paved shoulder. Community support of existing and proposed SRTS infrastructure on Kaua'i has been very strong. Both Kalāheo and Kōloa Elementary Schools have active SRTS programs that aim to educate students and encourage both walking/biking to school and the installation of SRTS infrastructure.

3.4.1 Infrastructure & Utilities

3.4.1.1 Water

The Kaua'i Department of Water (DOW) provides potable water services to all five towns within South Kaua'i. Water in the Kalāheo-Kōloa area is supplied by twelve underground sources. It is pumped, treated, and stored in fifteen tanks dispersed throughout the region.

In 2011, water consumption in the Planning District was roughly 3 MGD. DOW's Water Plan 2020 forecasts South Kaua'i water usage to be approximately 5 MGD in 2020 and approximately 6.8 MGD in the year 2050. See Table 3-2. A number of new water supply related projects are being developed in the South Kaua'i area to work on meeting this projected demand including storage and transmission facilities.

Table 3-2: Water Use 2011 Consumption and 2020/2050 Forecast

Location	Consumption (GPD)		
	2011	2020	2050
Kalāheo	511,000	746,000	902,000
Lāwa'i-Ōma'o	299,000	458,000	564,000
Kōloa	329,000	798,000	1430,000
Po'ipū	1,844,000	2,953,000	3,970,000
Total	2,983,000	4,955,000	6,866,000

Perennial streams and man-made ditches channel water to various non-potable reservoirs in the South Kaua'i area. Twenty-one reservoirs, the largest of which is the Waitā Reservoir, provide non-potable water for irrigation of South Kaua'i's lands. In addition to the reservoirs, an estimated 0.47 MGD of wastewater was recycled in 2013 and used, in combination with surface water, for landscape irrigation and golf course water features.

3.4.1.2 Wastewater

All wastewater generated in South Kaua'i is treated by individual and private systems. There are twenty-five private small packaged wastewater treatment plants in the Kōloa-Po'ipū area that serve resorts, hotels, and apartments. Most of the treated wastewater is recycled and used for irrigation at golf courses or discharged to injection wells. Future development

will require added capacity or construction of a new facility. Large capacity cesspools, septic tanks, and cesspool systems are also used for wastewater treatment and disposal throughout South Kaua'i, primarily in older residential communities.

3.4.1.3 Drainage

Developed areas throughout the South Kaua'i region have gutters and storm drain systems. However, the Planning District is primarily rural with stormwater generally sheet flowing and percolating into the ground during smaller rainfall events or channeled via swales and culverts either natural or manmade to streams that ultimately discharge into the Pacific Ocean.

There is an existing flooding problem at the makai end of Mano'okalanipō, near the corner of Ho'one and Ho'owili Roads, in Po'ipū. The area is prone to flooding because it is in a low-lying area and gravity flow to the downstream beach park is not accessible. The Department of Parks and Recreation has been in communication with the US Army Corps of Engineers with regards to the problem and received some recommendations and possible solutions. Unfortunately, the cost estimates for the proposed solutions were extremely high and flooding continues to occur with heavy rainfall events.

3.4.1.4 Solid Waste

Kaua'i County collects all residential curbside solid waste once per week and transports it to one of four transfer stations where it is compacted and taken to the Kaua'i County's Kekaha Landfill. Starting Summer 2016, all residential refuse collection will be automated. Residents will be required to select one of two cart sizes: 96 gallons or 64 gallons. Commercial establishments must contract independently with a private hauler to collect and haul solid waste, or they can transport their waste directly to a refuse transfer station. In 2013, the South Kaua'i Planning District generated the most solid waste in tons per year compared to other planning districts. The high solid waste generation is due in part due to the high number of hotel and resort condominiums as well as large- and small-scale agricultural activities in the area. The County has plans to offer automated curb-side green waste collection island-wide in the coming years, to coincide with curb-side recycling collection. Currently, there are no locations in the South Kaua'i district that accept green waste.

Garden Isle Disposal is contracted by Kaua'i County to operate and maintain the county's recycling program, which includes newspaper, plastic, glass, aluminum cans, and cardboard. Beverage containers (aluminum cans and glass/plastic bottles) can be recycled for a 5-cent refund, as part of the State's HI-5 beverage container redemption program. The County does not provide curbside collection, but there are two Residential Recycle Drop Bins in South Kaua'i. Commercial establishments can recycle materials, including cardboard, newspaper, office paper, plastic, HI-5 beverage containers, and tires, by contracting Garden Isle Disposal or hauling their recyclables to the Kaua'i Resource Center in Līhu'e.

3.4.1.5 Power and Communications

Kaua'i Island Utility Cooperative (KIUC) provides island wide utility electric service through a combination of fossil fuel burning power plants, hydroelectric power plants and large scale solar energy systems. Currently, renewables generate approximately 15% of the island's electrical energy. Three utility companies provide telecommunications services for Kaua'i: Hawaiian Telcom, Oceanic Time Warner Cable, and Sandwich Isles Communications.

3.4.2 Parks & Recreation

The Planning District contains 110.66 acres of county parkland that includes one passive park, six neighborhood parks, two district parks, and three beach parks. Some of the notable county-owned parks include Kōloa (Knudsen) Park, Kukuī'ula Harbor Park, Spouting Horn Beach Park, Kalāwa'i Park, and Po'ipū Beach Park. Some of the non-county-owned parks and recreational resources include the Kōloa Heritage Trail, Māhā'ulepū Heritage Trail and Coastline, Prince Kūhiō Park, and the Wahiawa Mauka State Park Reserve (County of Kaua'i Department of Parks and Recreation). Additionally, the National Tropical Botanical Garden (NTBG)—known for its stone walls, taro patches, and abundance of plants—is located in Lāwa'i Valley and a portion of the Wahiawa Mauka State Park Reserve is located in the northern part of the

Kōloa-Po'ipū region. The Planning District also has two Neighborhood Centers in Kōloa and Kalāheo which include kitchen facilities and serve as venues for community meetings, classes, and large gatherings. Po'ipū Beach Park Mauka Preserve is a special use area for the restoration of Kāneioulouma Heiau.

There are three golf courses within the Planning District, all of which are privately owned: Kukuīolono Park and Golf Course, the Kiahuna Golf Club, and the Po'ipū Bay Golf Course, which was home to the PGA Grand Slam of Golf from 1994-2006.

3.4.3 Public Safety and Services

Police. The Planning District is under the jurisdiction of the Kaua'i Police Department's 311-square mile Waimea District, which employs 28 officers who operate out of the Kōloa Sub-station, the only police station in the District. It is located at the Kōloa Neighborhood Center.

Fire. There are two County-operated fire stations in the Kōloa region. The Kōloa Station is located near the roundabout on Po'ipū Road and the Kalāheo Station is on Kaumuali'i Highway next to the neighborhood center. Only the Kōloa Fire Station has an emergency medical response unit (ambulance), but both stations are responsible for responding to emergency calls. The Kaua'i Fire Department also operates the Water Safety Operations Bureau, which provides lifeguard services and “promotes prevention and safety awareness to all persons who frequent...beaches and provides training for staff and public entities.” Po'ipū Beach Park is the only area that is stationed with lifeguards within the Planning District.

Medical. The clinics that specialize in neighborhood medical care include Wilcox Health's Kōloa Medical Clinic and Hawai'i Health Systems Corporation's Kalāheo Clinic. Hawai'i Health Systems Corporation anticipates opening a new clinic location in the Kukuī'ula area. For more advanced or immediate services, South Kaua'i residents must travel to either the West Kaua'i Medical Center in Waimea or Wilcox Memorial Hospital in Līhu'e. Patients also fly or are sometimes airlifted to O'ahu hospitals for more advanced or critical care. According to a 2012 Department of Health study titled State of Hawai'i Primary Care Needs Assessment Data Book, Kaua'i County was designated a “Medically Underserved Population (MUP).”

Schools & Libraries. The State of Hawai'i Board of Education divides Kaua'i into three complexes, each of which contains a high school and all of its feeder intermediate and elementary schools. Kalāheo Elementary falls under the Waimea Complex, headed by Waimea High School in Waimea, and Kōloa Elementary falls under the Kaua'i Complex, headed by Kaua'i High School in Līhu'e. Most public school students in the region attend one of the two elementary schools in the Planning District and then enroll in Kamakahelei Middle School in Puhi and Kaua'i High School in Līhu'e. Only about 25-30 percent of Kalāheo Elementary students stay within the Waimea Complex (Burkman, personal communication 2015). In general, the facilities at both Kōloa and Kalāheo Elementary Schools significantly exceed state standards. The only private school in this region is the K-12 Kahili Adventist School. The Kōloa Public Library is the only library located in the Planning District.

3.5 SOCIO-ECONOMIC CHARACTERISTICS

The following section includes data summarized from the 2010 US Census Bureau and the 2035 projections drafted by SMS Research & Marketing Services, Inc. for the County Planning Department's General Plan update (initiated in 2015).

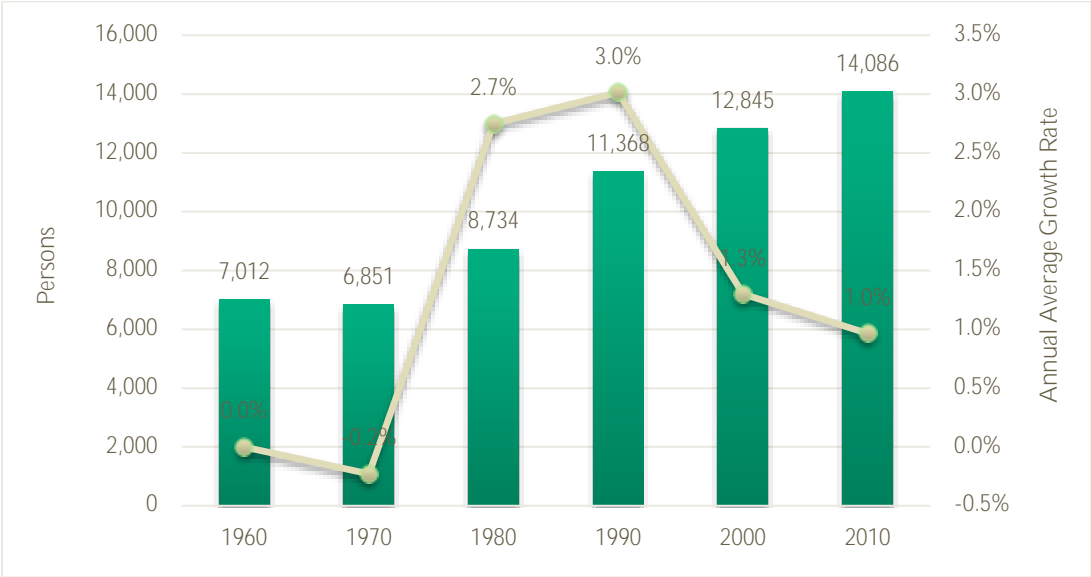
3.5.1 Population Size

The Planning District includes two census county divisions (CCD): 'Ele'ele-Kalāheo (407) and Kōloa-Po'ipū (406), which roughly correspond to the Kōloa judicial district. The census designated places (CDP) in the Planning District include:

Po'ipū, Kōloa, 'Ōma'o, Lāwa'i, and Kalāheo. In this section, "Kōloa District" refers to the combined census divisions ('Ele'ele-Kalāheo (407) and Kōloa-Po'ipū (406)) rather than the judicial district.

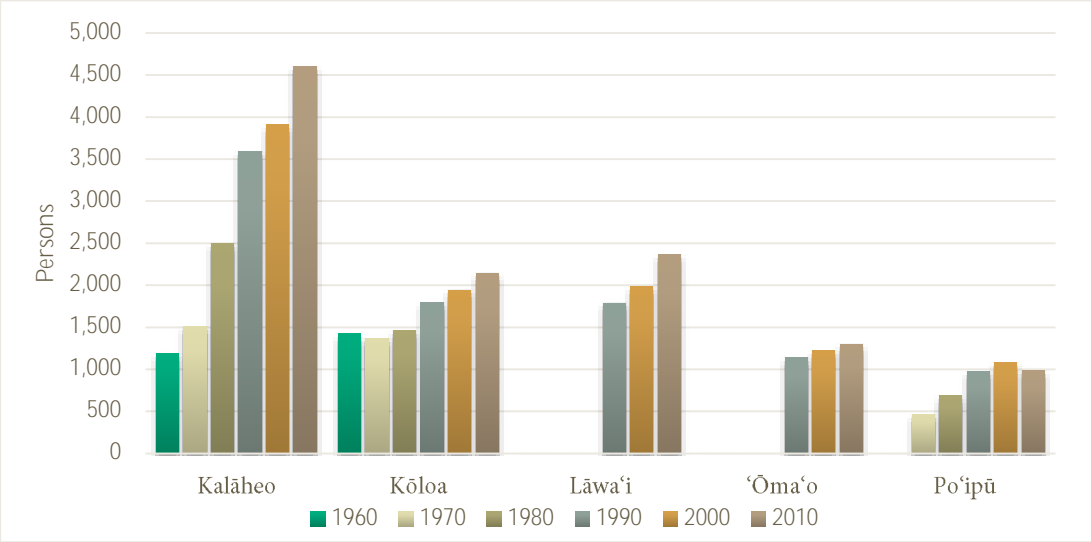
In 2010, approximately 14,000 people resided in the Kōloa District. This number represents a doubling of the population during the fifty-year period since 1960. See Figure 3-7. However, population growth in the Planning District has not exceeded the 20-year projection developed for the 1980 Kōloa-Po'ipū-Kalāheo Development Plan. The Plan estimated that population growth would occur at an annual average rate of four percent over a 20-year period, which is significantly more than actual average annual growth rate of two percent between 1980 and 2000 and the more recent one percent rate in the last two decades.

Figure 3-7: Kōloa District Resident Population, 1960-2010



Kalāheo has been the district's most populous CDP since 1970. At 4,595 residents in 2010, Kalāheo's population is more than double the population of the next largest CDP, Kōloa. See Figure 3-8.

Figure 3-8: Population Growth by Town, 1960-2010

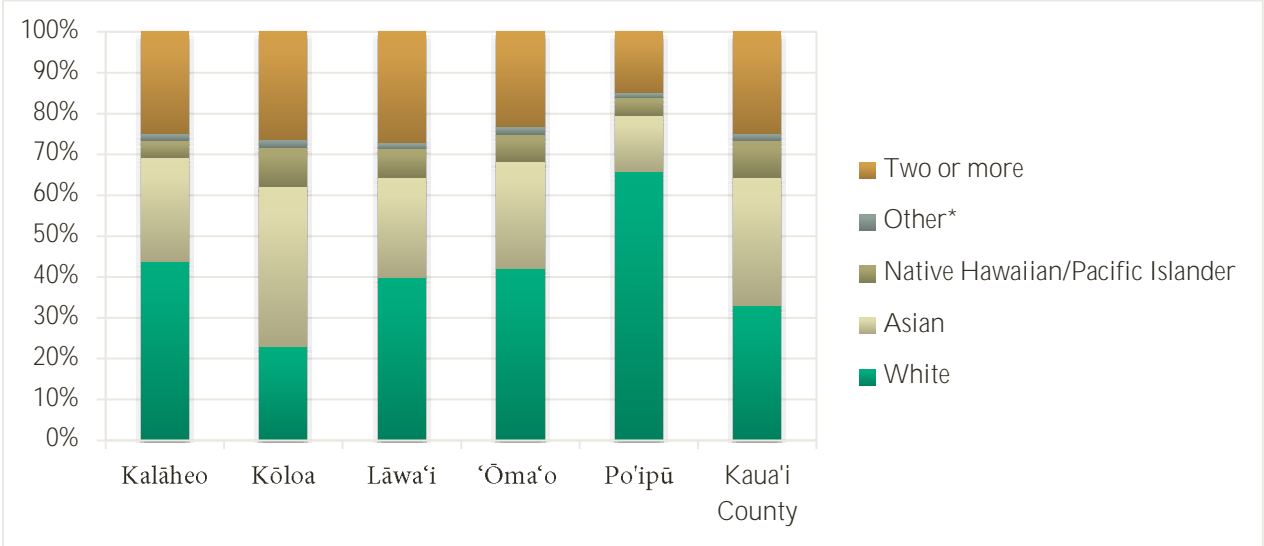


Population Forecast. SMS's 2035 population forecast assumed that the Lihū'e Planning District will have the largest portion of the projected growth with South Kaua'i receiving higher than average growth and the rest of the districts relatively little growth. For South Kaua'i, the population is estimated to reach 16,855. In 2010, South Kaua'i had roughly 17.4 percent of the county population and is projected to have 19.2 percent of the 88,013 populace in 2035 (SMS 2014).

3.5.2 Population Characteristics

Ethnic Composition. Since 1990, the largest racial group in the district has been White, followed by Asian with Japanese and Filipino populations comprising most of the latter. However, the breakdowns within each community and compared to the island as a whole differs widely. See Figure 3-9.

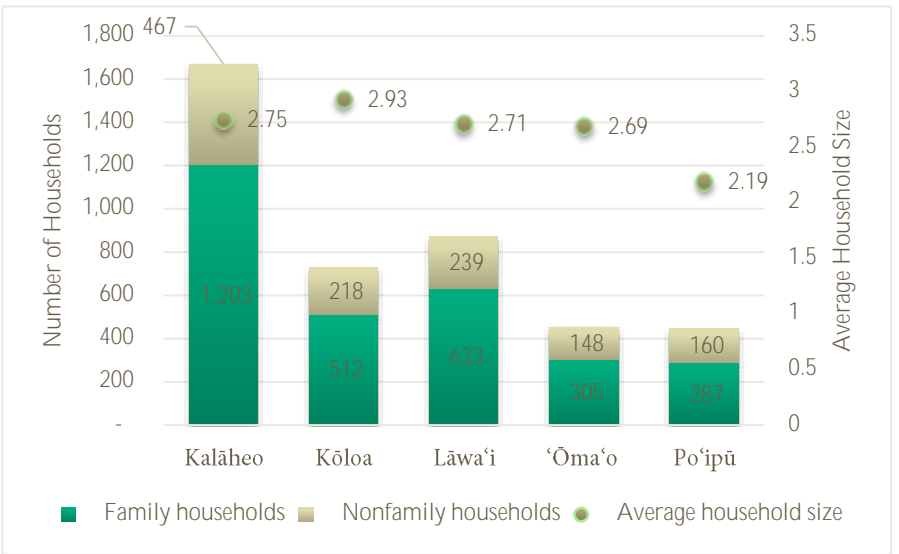
Figure 3-9: Racial Composition by CDP and for Kaua'i County 2010



*Black Alone, Alaskan Native/Native American Alone, Other Alone

Age. Similar to the rest of the island, the Kōloa-Po'ipū CCD has an aging population. The median age for the CCD was 35 in 1970 and has steadily increased to 45 in 2010. The division is older on average compared to the county as a whole, which had a median age of 41.1 in 2010. There are also some dramatic differences in median age among the CDPs. Between 2000 and 2010, Kalāheo's median age decreased, while all other towns increased. In 2010, Kalāheo and Kōloa had the district's youngest median age of 36.0 and 36.9, respectively, while Po'ipū had the oldest median age of 57.2.

Figure 3-10: Number & Types of Households by Town, 2010



persons per household for the Planning District will remain relatively constant and be the lowest on the island in 2035 at 2.76 (SMS 2014). As a proportion of total households, family households decreased as the number of non-family households increased, including homes where the householder lives alone. Po'ipū has the lowest percentage of family households (35.8 percent) whereas nearly three-quarters of all households in Kalāheo, Kōloa, Lāwa'i and 'Ōma'o were family households in 2010. See Figure 3-10.

Income & Poverty. Median household income for all CDPs except Kalāheo increased between 1989 and 2011 according to the American Community Survey (Figure 3-11). Po'ipū had the highest median income (\$95,446) and the highest percentage of households earning over \$150,000. 'Ōma'o and Lāwa'i displayed similar income distributions over time, while Kōloa went from having the lowest median household income of the CDPs in 1989 and 1999 to one higher than Kalāheo CDP.

All of the CDPs except Kōloa were below the County of Kaua'i's average poverty rate of 7.2 percent. Lāwa'i had the lowest rate at only 1.9 percent. Kōloa's poverty rate was the highest at 10.2 percent as of 2011.

3.5.3 Housing Characteristics

Housing growth has significantly exceeded the 20-year growth projected in the 1978 Kōloa-Po'ipū Development Plan. The housing stock in the Kōloa District grew from 3,952 to 6,641 units between 1990 and 2010, an increase of 68 percent most of which occurred in Po'ipū. However, in the 2010 census, 86 percent of Po'ipū's housing stock was categorized as "seasonal." In 2010, Kalāheo had the largest housing stock with approximately 1,800 units, followed by Po'ipū (1,588), Lāwa'i (959), Kōloa (814), and 'Ōma'o (493). Over 80 percent of the housing units in Kalāheo, Lāwa'i, and 'Ōma'o are single family residences. In Kōloa, less than 60 percent are single family residences, and in Po'ipū, it is approximately 30 percent.

Housing Costs & Affordability. Between 1990 and 2010, median housing prices increased in all the towns at a dramatically faster rate than the rest of the County (Figure 3-12). In 2010, Po'ipū had the district's highest median housing price at \$928,600 while Kōloa had the lowest median price at \$528,000 – just half of the Po'ipū price.

Rental costs also increased in all CDPs between 1990 and 2010. As was the trend with median housing value, Po'ipū also had the highest median rent in the district at

Figure 3-11: Median Household Income by CDP, 1989-2011

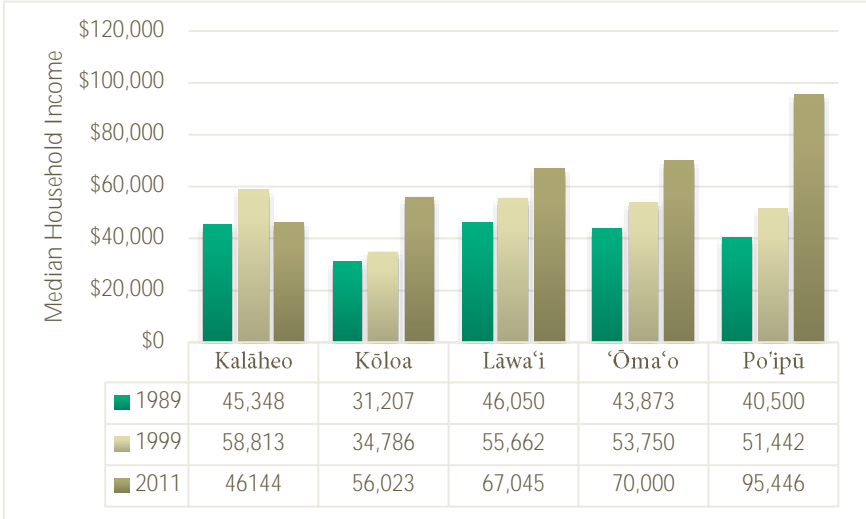
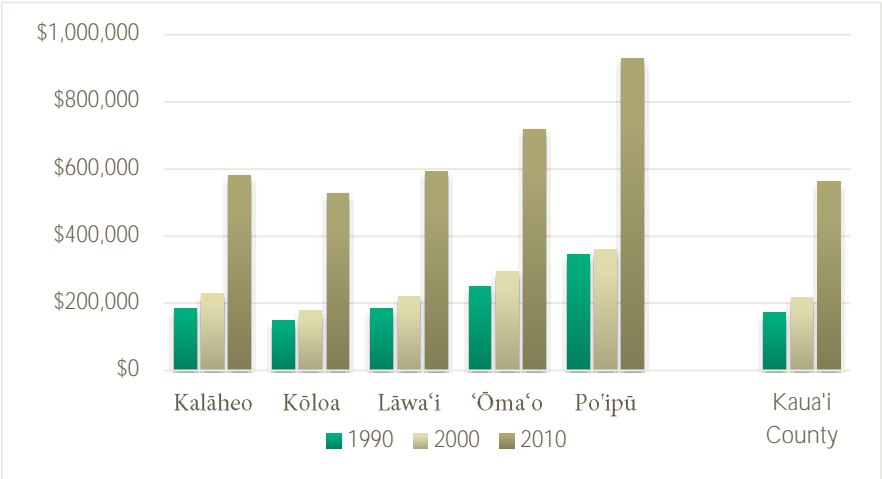


Figure 3-12: Median Value, Owner-occupied Housing Units, 1990-2010



\$912 in 2000 and doubling to \$1,802 in 2010, while Kōloa had the lowest median rent with \$442 also nearly doubling to \$861 in 2010.

3.5.4 Economy

According to the 2010 Census, Kaua'i's labor force totaled 34,981 and had an unemployment rate of 5 percent (Figure 3-13). The historical data for Kaua'i County indicate an upwards trend in labor force growth, equating to 1.1 percent a year since 1990. Since 1993, county unemployment rates slowly declined to a low of 2.4 percent in 2006 but then soared to 9.3 percent in 2009 during the global recession. On the CDP level, in 2010, participation in the labor force ranged from 49 to 97 percent of the respective CDP population 16 years and older, compared to the County at 78 percent. Approximately 11 to 25 percent of the workforce in all CDPs is employed by the government, with the majority employed by the State. In all CDPs, about a quarter of the workforce was employed in sales and office occupations. Approximately 18 percent of all workers in the county's accommodation/food services/arts/ entertainment industry work in the Planning District. Sixteen of Kaua'i's Top 100 Employers are located in the district, according to a survey conducted by InfoUSA in 2008.

Approximately 30 percent of the households of the Planning District CDPs received social security, but 40 percent of households in Po'ipū receive social security, reflecting its relatively older population.

Figure 3-13: Annual Employment, Kaua'i County 1990-2012

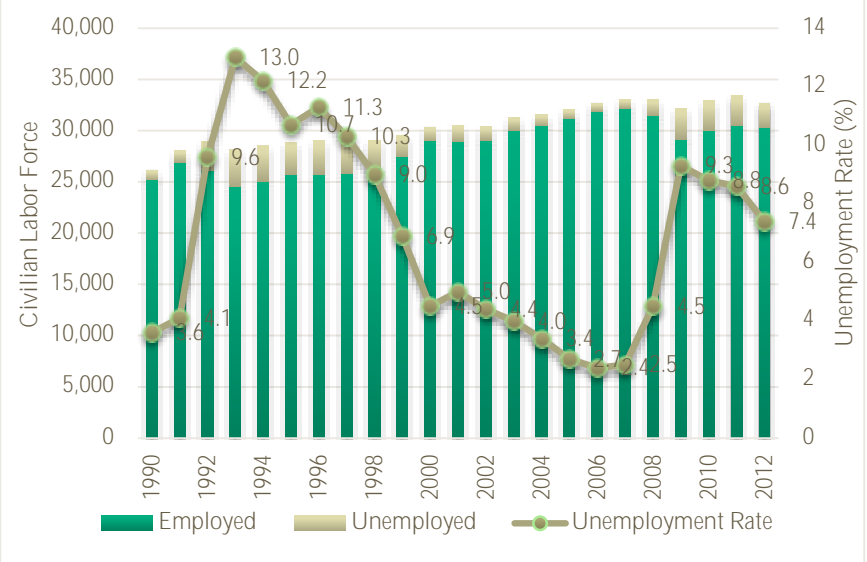
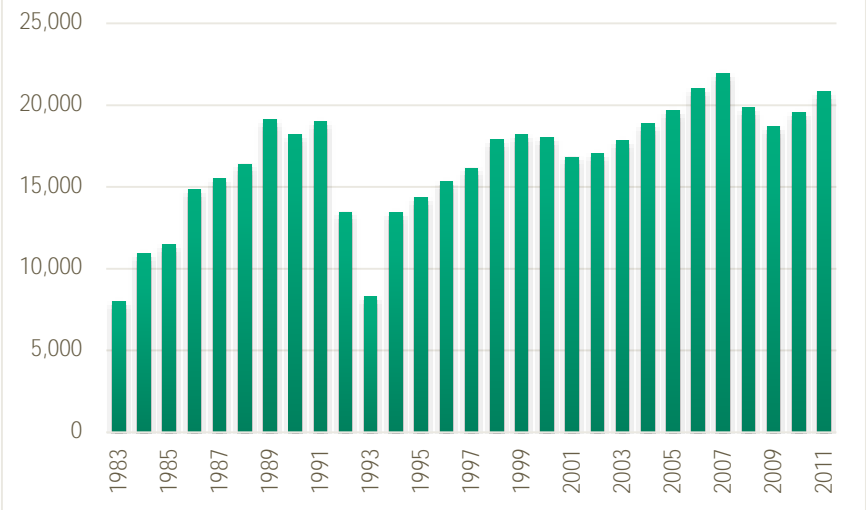


Figure 3-14: Average Daily Visitor Count, Kaua'i County



visitor count (ADVC) grew from approximately 8,000 visitors to nearly 22,000 visitors in 2007. See Figure 3-14. It is projected that Kaua'i County's ADVC will steadily increase to 27,000 in 2035 according the latest estimates from DBEDT.

Travel to Work. In Kalāheo, 'Ōma'o and Lāwa'i, 86 to 89 percent of residents worked outside of their town and had to commute to work while in Kōloa and Po'ipū, 25 and 40 percent, respectively, were employed locally. Overwhelmingly, the primary means of commuting is automobile travel. Approximately 1 to 5 percent of the workforce in the Kōloa District walked to work, except in Kalāheo and Po'ipū where no one walked to work.

Tourism. During an average 24-hour period in 2012, 22,318 visitors were present on Kaua'i. Since 1983, Kaua'i's average daily

3.5.5 Visitor Units

According to the Hawai'i Tourism Authority's (HTA) 2014 Visitor Plant Inventory (VPI), the greatest number of visitor units on the island are located in the Po'ipū-Kukui'ula area and account for roughly 36 percent of Kaua'i's total inventory. There are seven anticipated resort projects in the district that are all located in the Po'ipū-Kukui'ula area, and two undeveloped but residentially zoned properties within the VDA. If buildout of all projects occur, an additional 1,961 units could be added to the area. While this is unlikely to occur in the next few years, buildout is possible within the 20-year planning horizon of the Plan. Buildout represents an increase of 64% from the year 2014 visitor unit total in the region.

For South Kaua'i, between 3,877 and 4,406 visitor units will be required by 2035 (SMS model 2014). With an existing 3,065 visitor units in 2014, the difference between the forecasted and existing number of visitor units is between 812 and 1,341 units. By applying SMS's medium estimate of an average of 70 percent occupancy rate to the number of permitted and potential visitor units (1,961), the net difference between the projected required number of units and permitted units is between 561 and 32 units. Depending on how many of the permitted units are actually built, especially at Kukui'ula and Pilimai at Po'ipū, and the two zoned but not permitted parcels, the number of visitor units could be relatively close to the projected need on the high side of the projections. Should these developments stall or be lower than expected, additional permitting for visitor units may be required. On the low side of the projections, there is a potential excess of 561 units.

3.6 NATURAL HAZARDS & CLIMATE RISKS

The following sections summarize information from the County's 2009 Multi-Hazard Mitigation Plan Update, the State Civil Defense (SCD) website, the Federal Emergency Management Agency (FEMA) website, and the State Department of Land and Natural Resources website as they relate to the South Kaua'i Planning District.

Hurricanes. Kaua'i has sustained two direct hits from hurricanes since reliable recordkeeping began in 1950—'Iwa in 1982 and 'Iniki in 1992. Both caused extensive damage to South Kaua'i, particularly in Po'ipū. However, redevelopment following both storms occurred in precisely the same locations, resulting in a once again densely developed shoreline although decisions were made by some developers to locate golf courses closer to the shoreline and increase building setbacks.

Tsunami. All Kaua'i coastlines have observed tsunami run-up heights of over ten feet, which caused significant damage and historically, loss of life. The tsunami evacuation zones were last updated in 2013.

Earthquakes. According to historical records, the history of earthquakes in Kaua'i has been low and Kaua'i is considered the least vulnerable to earthquakes of all the major Hawaiian Islands. However, there is always a concern that an earthquake in Hawai'i or somewhere within the Pacific Rim could generate a tsunami or cause enough damage elsewhere to interrupt the supply of goods and services to Kaua'i.

Landslides & Rockfalls. The construction of Kaumuali'i Highway through Kalāheo and Lāwā'i required cutting into hills, and portions of the graded lands have slid and resulted in rockfalls. Destruction of roads from landslides could result in cutting off vehicular access, which could present a major problem because of the lack of redundancy and alternative routes in Kaua'i's road system. In South Kaua'i, the old cane roads are relatively well maintained due to their continued use by agricultural operations and provide potential emergency relief routes should something cut off access on the highway.

Flooding. Flooding can occur from excess rainfall, storm surges, high tide wave action, unmanaged drainage systems, or sea level rise. Stream flooding on Kaua'i is characterized by flash floods, as well as prolonged flooding associated with slowly passing rainstorms that saturate the soils. Flooding in the Planning District has historically occurred at the Po'ipū

Beach Park parking lot, in Kalāheo Stream, in Po'ipū and Kōloa due to overland flow, and along the coast due to tsunami run-up.

Dam Failures. Dams and reservoirs in Hawai'i are used for agriculture, drinking water storage, flood control, recreation, and various other purposes. Approximately 23 regulated and 7 unregulated dams as defined under the Hawai'i Dam and Reservoir Safety Act of 2007 are located within the Planning District. The State DLNR Engineering Division's Dam Safety Program is charged with carrying out the requirements of the Act including dam safety inspections of all state regulated dams, working with owners to develop or update their Emergency Action Plans, reviewing permit applications, providing training, and regulating and promoting dam safety statewide.

Coastal Hazards, Climate Change, Shoreline Erosion, & Sea-Level Rise. Sea level around the island of Kaua'i is currently rising at an average rate of 1.53±0.59 mm/year, or about 6 inches/century, and, unlike global records, accelerated sea level rise has not yet been detected in the Hawai'i tide gage records (Sea Grant 2013). Potential impacts of sea level rise include increased coastal erosion rates, flooding, and wave inundation, drainage issues and groundwater inundation, as well as increased vulnerability to hurricanes and tsunami (Sea Grant 2013).

According to the Kaua'i Climate Change and Coastal Hazards Assessment (KC3HA) prepared by the UH Sea Grant College Program, the four key coastal hazard impacts for Kaua'i are: 1) coastal flooding and wave inundation, 2) erosion, 3) inland (stream) flooding, and 4) wind. All of these impacts can be generated by a variety of hazard events or processes and all are exacerbated by climate change and associated sea level rise. Scientific studies also indicate that climate change may increase tropical cyclone frequency, result in unpredictable rainfall and weather patterns, increase ocean acidification, and cause coastal ground saturation and migration and expansion of wetlands (IPCC 2014; PIRCA 2012). The consequences of these hazard impacts can be seen in increased runoff, landslides, beach loss, and slope failures, all of which can affect the community. Mitigation programs, policies, and practices should be designed around these impacts and consequences, not just the event that causes them (Sea Grant 2014). Kaua'i's primary focus on mitigating impacts from climate change and coastal hazards has been adaptation and a reduction on the dependence on fossil fuels.

UH SOEST estimated that changes along South Kaua'i's shorelines ranged from a small amount of accretion to erosion at 1-2 feet per year. However, erosion rates may increase with sea level rise. Recently, sand erosion at Po'ipū Beach has been a particularly major concern for residents and the visitor industry. For long term solutions to the problem, the County of Kaua'i Department of Parks and Recreation commissioned a study completed by Sea Engineering, Inc. in March 2013 to understand the coastal processes at Po'ipū Beach and determine how to restore the beach to its 1975 location. Maintenance of the tombolo, beach nourishment, construction of a new rock rubblemound structure at the Keiki Pool, and restoring the vegetation line seaward to its pre-'Iniki location were recommended.

Droughts. Drought impacts vary in timing and severity, but can be generally categorized into three sectors: water supply; agriculture and commerce; and environment, public health, and safety. According to a recent report from the US Drought Monitor, the southern coastal areas of Kaua'i were experiencing "Abnormally Dry" conditions as of December 2014.

Wildfires. After Hurricane 'Iniki devastated Kaua'i's wild land areas in 1992, and the windblown debris increased fuel and potential for fires, the Kaua'i Wildfire Prevention Analysis and Plan provided a wildfire risk assessment for the island in 1994 and 1995. Geographic areas were assessed according to the potential for wildfire prevention risk and vulnerability. The following areas within the Planning District were assessed as described in the table below.

Area Name	Risk	Hazard	Value
Kōloa/Mauka	Low	Moderate	Moderate
Kōloa/Makai	High	High	High

Source: County of Kaua'i (2008, 2012); DLNR, Division of Forestry and Wildlife, Fire Management Program (2007); ESRI, ArcGIS World Topographic Basemap (2013).

Critical Facilities & Shelters. State of Hawai'i Public Emergency Shelters in the Planning District include:

- ‘Ele‘ele Elementary School [Special Needs + Pet Friendly + General Population] (652 permissible occupants)
- Kalāheo Elementary School [Special Needs + Pet Friendly + General Population] (964 permissible occupants)
- Kōloa Elementary School [Special Needs + General Population] (884 permissible occupants)

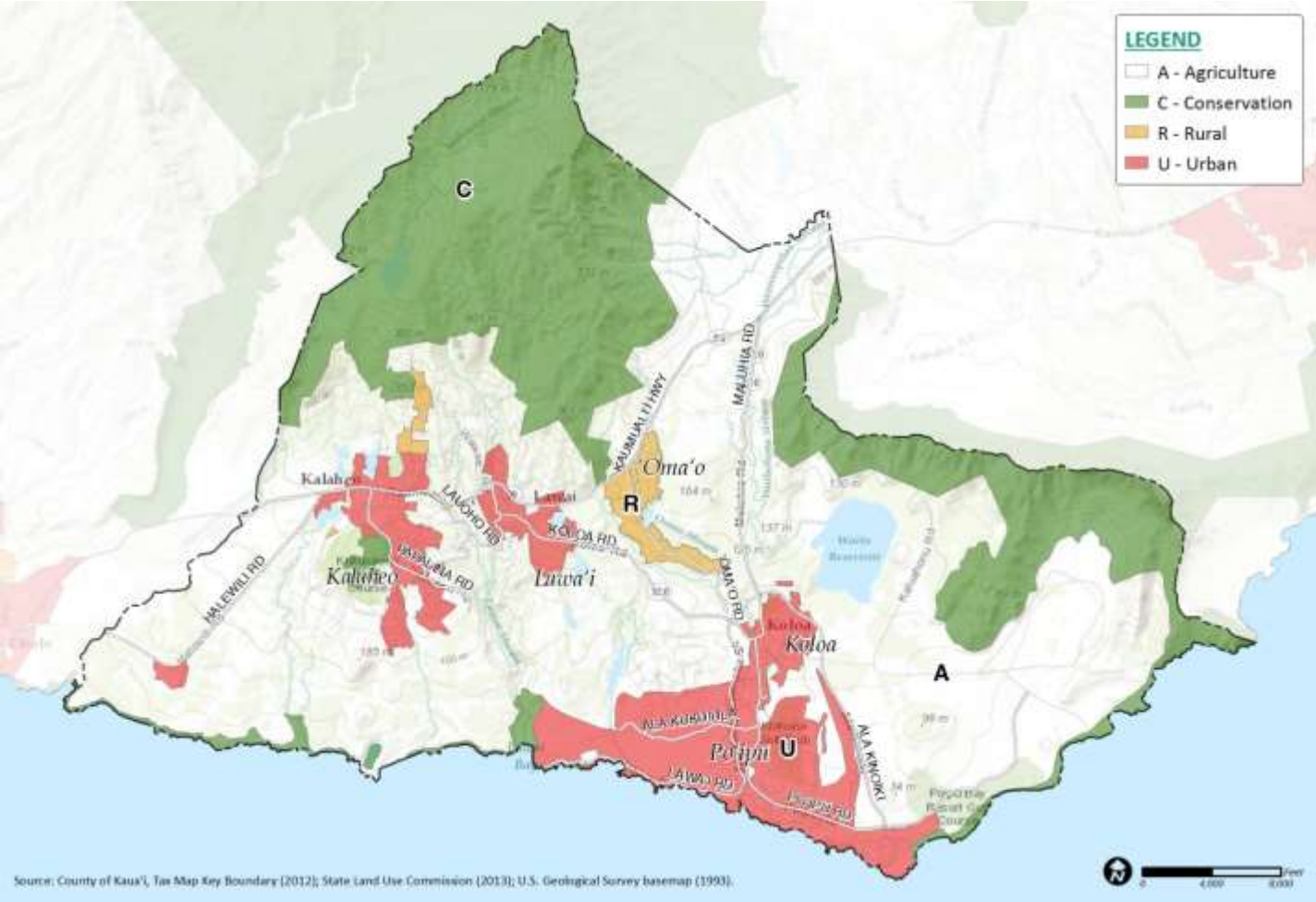
In addition, hotels with more than 500 rooms have been consulted as partners to provide shelter spaces for visitors in addition to their guests. It has been several years since evacuation and safety plans have been updated at area resorts. There is also concern that many visitors now stay at individual vacation units which may not have a way to broadcast emergency information or to provide directions to their guests.

3.7 REGULATORY CONTEXT AND EXISTING LAND USE

3.7.1 Regulatory Context

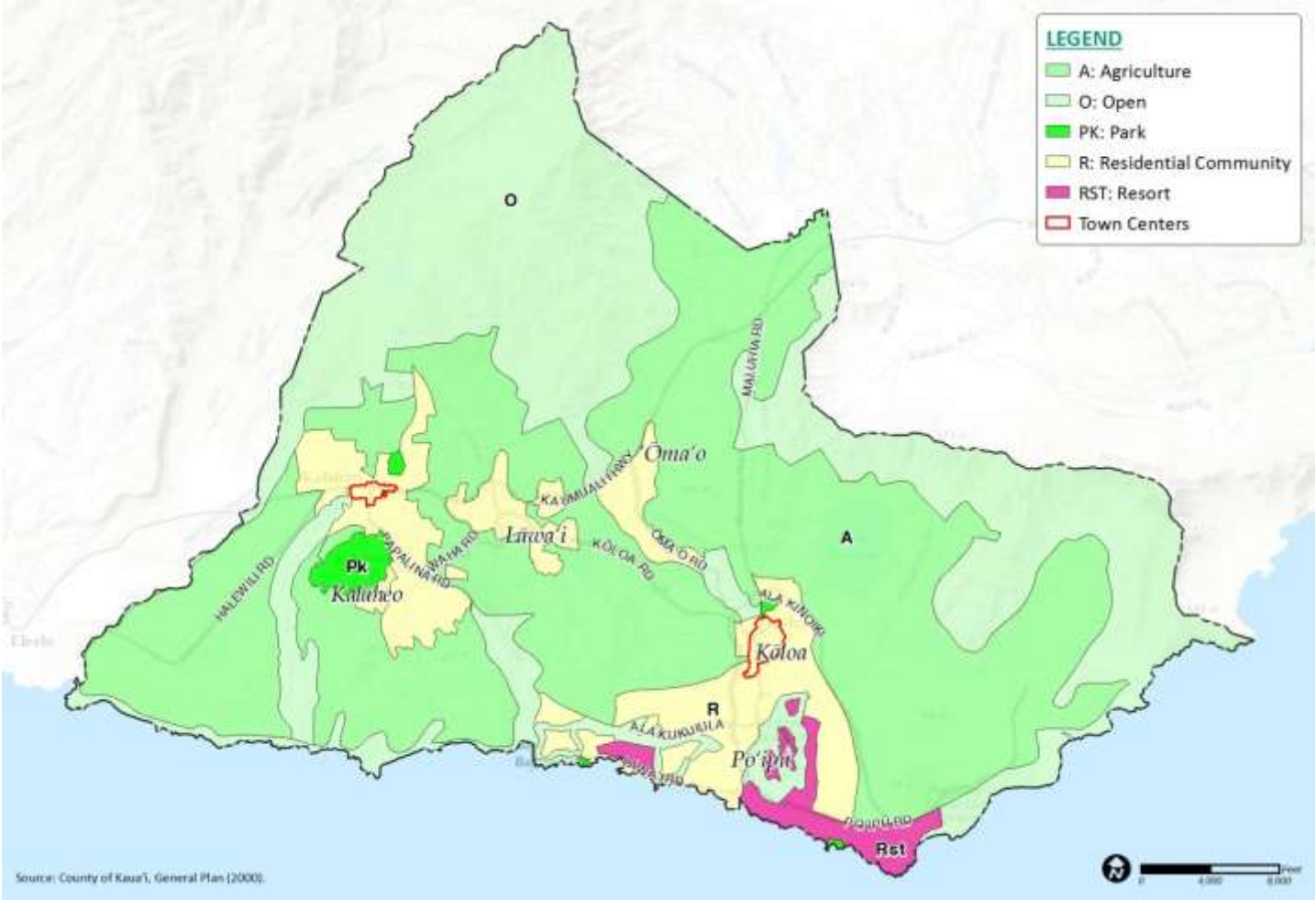
State Land Use Districts. Approximately 70 percent of the Planning District’s land is in the Conservation District. Of the remaining 30 percent, the Agricultural District covers 29 percent, the Rural District covers less than one percent, and the Urban District covers just over one percent. Of the six planning districts on Kaua‘i, only Līhu‘e has more land under the Urban District. See Figure 3-15.

Figure 3-15: State Land Use Districts



County of Kaua‘i General Plan. The County General Plan Land Use Map depicts policy for long-range land uses and was last updated in 2000. Kalāheo and Kōloa are designated as Town Centers and the Residential Communities correspond to the Urban State Land Use District in Kalāheo, ‘Oma‘o, Lāwa‘i, and Kōloa and the Rural State Land Use District for ‘Oma‘o. The Po‘ipū-Kukui‘ula area is one of Kaua‘i’s three primary resort destinations and contains the highest number of visitor units on the island.

Figure 3-16: General Plan Land Use Map



Kōloa-Po'ipū-Kalāheo Development Plan. The Kōloa-Po'ipū-Kalāheo Development Plan, last updated in 1978, is one of six regional plans that establishes specific guidelines to carry out the long-range development goals and objectives of the County General Plan. This South Kaua'i Community Plan updates the maps and land use policies of that plan.

County Zoning. Forty-one percent (41%) of all zoned lands within the Planning District are zoned Agricultural. The next largest areas are zoned “Conservation” (28%) and “Open” (22%). Approximately 2,500 acres, or eight percent (8%) of the Planning District, is zoned Residential. Resort (123 acres), commercial (97 acres), and industrial (28 acres) zoned lands together make up less than one percent of the Planning District.

Special Management Area & Shoreline Setback Area. The Special Management Area (SMA) boundary generally follows the General Plan's Open designation along the shoreline. In Po'ipū, the SMA boundary follows Po'ipū Road, extends mauka of Prince Kūhiō Park, and roughly parallels Lāwa'i Road west of Kōloa Landing. The depth of the no-build shoreline setback is a minimum of 40' and can extend up to 100' based on average lot depth or 100 times the annual coastal erosion rate for structures with a building footprint greater than 5,000 square feet. The County is currently amending the shoreline setback ordinance so these requirements may change in the near future. See Figure 3-18.

Figure 3-17: Zoning

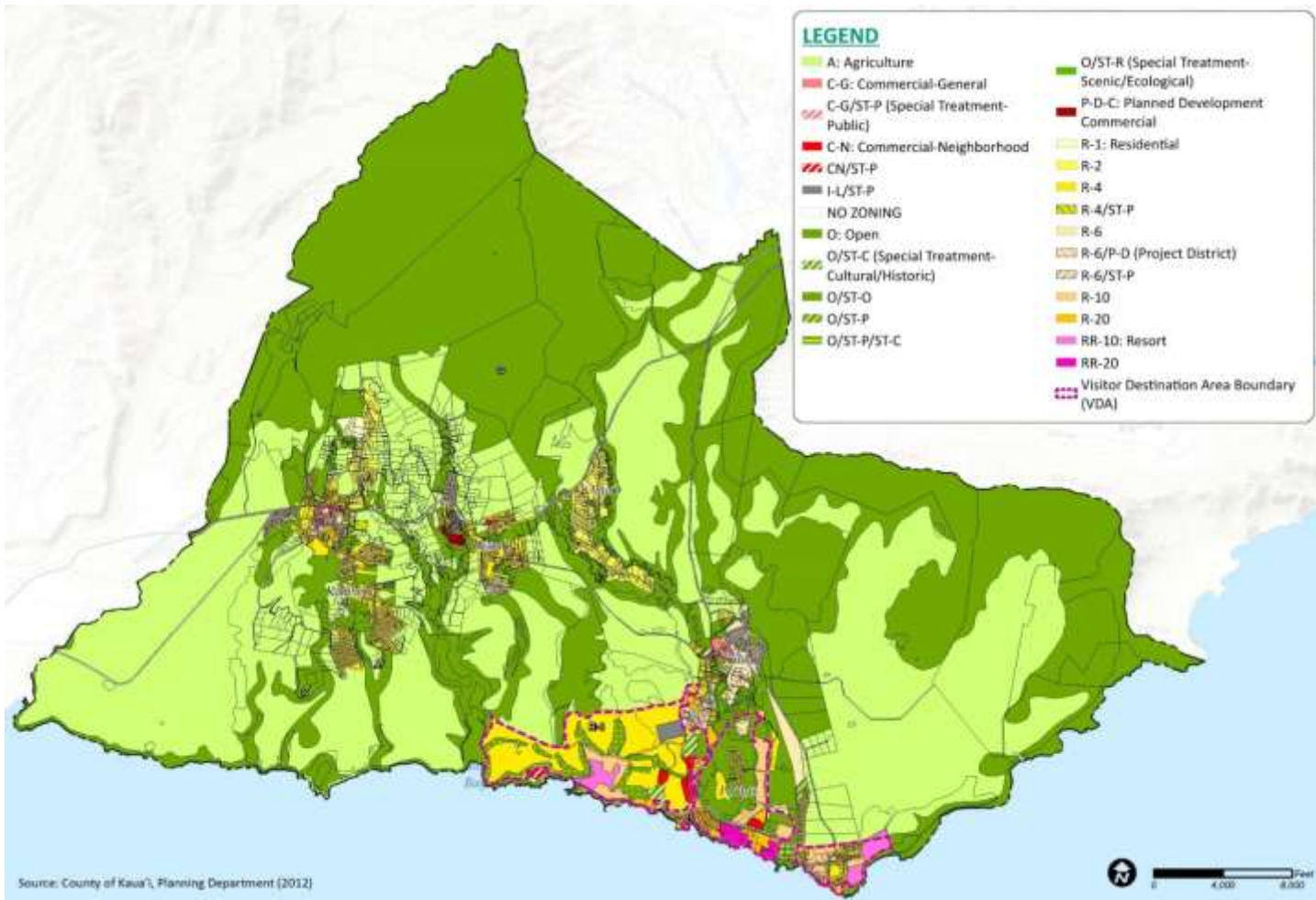


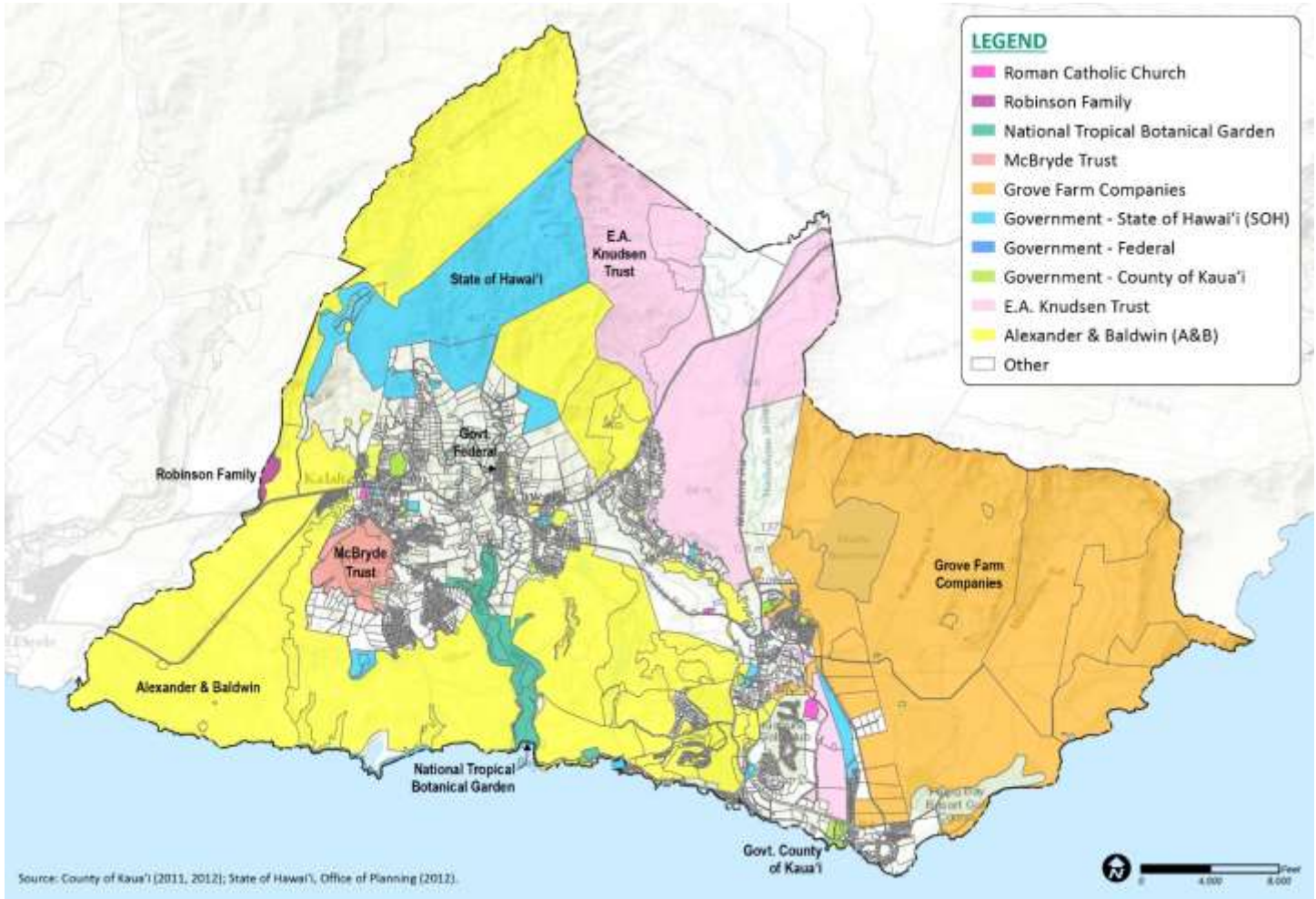
Figure 3-18: Special Management Area



3.7.2 Existing Land Use

Landownership. Three private landowners own approximately 61.5 percent of the land within the Planning District. Alexander & Baldwin owns 9,999 acres (31.9%) in the western portion of the Planning District. Grove Farm Company and its affiliated companies own 7,699 acres, or 24.5% of the Planning District. The Eric A. Knudsen Trust owns 1,603 acres (5.1%). State, county, and federal land comprises only about seven percent (7%) of the District’s land. The remaining 31.5 percent is a variety of smaller private or nonprofit landowners. See Figure 3-19.

Figure 3-19: Major Landowners



Development Trends. Historically, an average of 75 lots were created through subdivision on an annual basis in the Planning District. In 2006, this number skyrocketed to over 400, but declined precipitously to below 50 in 2007. In 2009, no lots were approved to be subdivided.

The County Zoning Ordinance (CZO) requires vacation units to be located within defined visitor destination areas (VDA) (CZO §8-17.2 & -17.8). The majority of vacation units on the island are in the Planning District, specifically the Kōloa/Po'ipū/Kukui'ula area. Time-share units and multi-family vacation units existing prior to September 22, 1982 and located outside a VDA are considered legally nonconforming uses (CZO §8-17.5); single-family vacation units existing prior to March 7, 2008 are legally nonconforming uses provided they are Holders of a Non-Conforming Use Certificate (CZO §8-17.10).

Projects entitled but not yet built within the Planning District include resort, commercial, residential, and mixed-use (commercial and residential) totaling approximately 1,000 housing units, 2,100 transient accommodation units, and over 120,000 s.f. of commercial space. These projects are located in Kōloa, Po'ipū, and Kukui'ula, with one project in Kalāheo. Affordable housing projects in the Planning District include 208 rental units in Kōloa, 28 elderly rental units in Kalāheo, 111 for-sale units in Kalāheo (13 for-sale units expired in Po'ipū), and 37 self-help units in 'Ele'ele that falls outside but in proximity to the Planning District. With the median housing value in the Planning District at \$416,200, only about 50% of the properties are affordable to a family earning 140% of the County's median income.

Important Agricultural Land Designations. In the Planning District, the State Land Use Commission has approved petitions from Grove Farm and Alexander & Baldwin to voluntarily designate a total of approximately 6,000 acres as Important Agricultural Land (IAL). See Figure 3-20.

Figure 3-20: Important Agricultural Lands, as of 2013



4 POLICES & GUIDELINES

4.1 LAND USE

The County of Kaua'i Comprehensive Zoning Ordinance (CZO), Ordinance No. 935, and accompanying zoning maps prescribe the allowable uses of land for the County of Kaua'i. The CZO identifies the various zoning districts, the uses allowed within each zoning district, and the applicable development standards and procedures within each zoning district. The South Kaua'i Community Plan Land Use Map illustrates the desired long-range land use pattern for the South Kaua'i Community Plan area through 2035 (Figure 4-1). It supports the community's vision and is intended to be at a level of detail between the County's broad-brush General Plan land use policies and the detailed development of the zoning districts. The CZO is the County's underlying zoning code and shall apply within the Planning District. However, the only exceptions will be within the proposed Special Planning Areas (SPAs) as described below and in the adopted South Kaua'i Form-Based Code (FBC). Within the SPAs, the development standards of the CZO would be overridden by the FBC.

4.1.1 Walkable Mixed-Use Special Planning Areas

In order to accommodate the growth projected for South Kaua'i and to fulfill the community's wishes for safe, pedestrian- and bike-friendly roadways, new SPAs are recommended for specific areas where compact, walkable communities are desired in both new and existing town cores and nodes. The purpose of these SPAs is to identify where projected residential growth and supporting mixed-use commercial uses will be directed. These areas are either infill areas or areas that are appropriate for future development based on their proximity to employment and/or town centers and transportation networks. These SPAs will be required to follow the design and land use standards detailed in the FBC regardless of the underlying zoning. These areas are also tied together by multimodal transportation networks within South Kaua'i to preserve the rural feel of the region and encourage people to walk, bike, and ride transit for a healthier lifestyle.

There are six areas where the proposed Special Planning Areas will be applied within South Kaua'i:

- Kōloa Town
- Kalāheo Town
- Po'ipū Roundabout
- Lāwa'i Cannery
- Po'ipū Gateway Mixed-Use Village
- Numila

The areas within the three SPAs with Regulating Plans and transects are further classified into "Neighborhood Center," "Neighborhood General," or "Neighborhood Edge" on the Land Use Map to highlight the cores of these communities and the transition to the surrounding areas. These land use designations are used primarily for those areas within the SPAs.

- **Neighborhood Center.** A small-scale, low-rise, mixed-use center of commerce, residential, and community activity in rural character and setting in which principal establishments are oriented to the street. Land use mixtures may include retail, office, and dining establishments, compatible service businesses and light industry, and residential uses. Commercial activity is concentrated along street frontages in typically "main street" settings.
- **Neighborhood General.** A small cluster of small-scale, low-rise commercial and service businesses which serve primarily the immediate community. Its primary visual appearance is rural residential in character. Buildings are generally compatible in scale and form with adjacent residential areas.
- **Neighborhood Edge.** Primarily single-family homes or small-scale multi-family residential in single-family building form in which rural development standards are employed and provisions for pedestrian circulation, landscaping, and open space are emphasized.

Only those areas within the SPAs and transect designations shown in the Regulating Plans will be required to follow the FBC.

The three future SPAs which are intended to have Regulating Plans detailed with transects at a future time are labeled either as a **Large Village** or a **Small Village** on the Land Use Map based on the characteristics of their envisioned built form and relationship to the other walkable communities within the South Kaua'i Planning District.

These places types are general placeholders for the future SPAs until their Regulating Plans with transect zones are determined. These areas are colored in two shades of purple on the Land Use Map. As noted, additional master planning efforts must be completed to determine what suite of transect zones would be appropriate within its boundaries based on the requirements set forth below. They also will be required to use the transect zones defined in the South Kaua'i FBC. The Po'ipū Gateway Mixed-Use Village is classified as a Large Village and Lāwa'i Cannery and Numila are classified as Small Villages. Not all of the parcels within these SPAs will necessarily change dramatically in terms of land use or form. In fact, the whole point of the FBC is to be consistent and compatible with the existing building forms and uses. Preservation and reuse of historic buildings are also highly recommended.

4.1.1.1 Kōloa Town

Kōloa's main street is one of the most successful walkable centers of all Kaua'i despite the lack of continuous sidewalks and busy trafficked streets. Kōloa's town core has character, with a canopy of monkeypod trees and covered porch commercial buildings, bisected by Waikomo Stream. The center, primarily along Kōloa Road between Po'ipū Road and Waikomo Road, is arranged compactly and although on-street parking is currently a bit haphazard, it does provide a buffer for pedestrians along the storefronts, enabling Kōloa to support a thriving pedestrian environment.

In order to support and encourage this compact pattern and prevent Kōloa from sprawling outwards, future growth in this area is envisioned as tighter and denser within the town core. Mixed-use commercial is encouraged within the Neighborhood Center and an estimated 450 new residential units are required through 2035. Building heights will remain two stories maximum, respecting the Historic Kōloa Town Core Special Treatment-Cultural/Historic District (KCC §10-6.3(d)).

4.1.1.2 Kalāheo Town

Kalāheo's town core centers mainly on the highway between Papalina and Hokua Roads and makai to Pu'u Road. Kalāheo Elementary School borders this area on the east and Kalāheo Gulch on the west. Safer pedestrian and bicycle networks is the main focus of this area, connecting the neighborhoods with the school, the Kalāheo Neighborhood Center, Kalawai Park, and commercial uses along the highway. The community has voiced the desire to have a local market or grocery store in Kalāheo and some potential locations include vacant or redeveloping properties along the highway. Due to the limited infrastructure available in the area, primarily the lack of a centralized wastewater treatment facility, only 50 new residential units are projected for this area through 2035.

4.1.1.3 Lāwa'i Cannery

The future Lāwa'i Cannery SPA encompasses approximately 18 acres makai of Kōloa Road and includes existing commercial uses and the former cannery properties currently zoned PD-C. No growth has been allocated for the area but it is designated as a Small Village as there are several businesses that attract activity to this crossroads. The area will require additional master planning to determine which transects would be appropriate. However, improved pedestrian facilities, safer parking areas, and the ability to redevelop the area without undergoing the Project Development process could help

the area transform into a walkable core at the crossroads. A multi-use path is also recommended to continue along Kōloa Road to Piko and Oyama Roads, which intersect the highway at the Lāwa'i Post Office bus stop locations.

4.1.1.4 Po'ipū Roundabout

The beautifully landscaped Po'ipū Roundabout on Ala Kalanikaumaka, Lāwa'i, and Po'ipū Roads has quickly become a visual landmark for the community. The Shops at Kukui'ula adjacent to the roundabout on the southwest quadrant has also become a center of activity for the community and is recognized by the CAC as having desirable architectural form. Its internal public space is busy with pedestrians and convenient for activities such as farmers markets. Because of this, the areas immediately surrounding the roundabout and the pedestrian paths have become popular. Encouraging medium-density mixed-use development around this node could make the community even more active and vibrant with pedestrians and cyclists. The Shops at Kukui'ula itself, however, is not included in the SPA due to existing restrictive covenants that dictate permitted uses and architectural design.

4.1.1.5 Po'ipū Gateway Mixed-Use Village

The Po'ipū Gateway Mixed-Use Village is envisioned to be a new mixed-use community with ample workforce housing located directly mauka of the Po'ipū resort district so people will be able to walk, bicycle, or take a short transit ride to and from work. Over 1,100 new residential units are allocated to the area for future growth and a mixed-use commercial center with a range of retail and services should be included to support the new community. Based on an estimate of the area required for park dedication for the 1,100 units, a roughly seven-acre park is shown conceptually along Ala Kinoiki, providing an open view to Pu'u Wanawana. There is also a 30 foot buffer around Pu'u Wanawana and a greenbelt or trail should be provided through the community connecting to Pu'u Hunihuni to keep that view corridor open as well. Potential park facilities could include a playground, active playfields, and a community center.

A separate master planning process will be required in order to determine the mix of transects that will apply. However, the CAC felt that this would be the only area within the planning district in which taller buildings up to 3 stories would be appropriate. The reasons include the proximity to the existing resort area, which already includes many 4-story buildings, and the need for affordable workforce housing in Po'ipū. Along the mauka and eastern edges, the transect zones should transition to T3 zones to blend into the surrounding agricultural areas. The Po'ipū Gateway Mixed-Use Village Floating Zone will be required to provide a minimum of 1,100 new residential units as a condition of plan approval.

4.1.1.6 Numila

Numila is an area currently located within the State Land Use Urban District. Future master planning efforts will be required to determine the preferred suite of transects to apply in the area. It will also need to be integrated with the adjacent Future Growth Area related to the Hanapēpē-ʻEleʻele Community Plan. Therefore, new residential units are limited to roughly 150 units based on existing entitlements.

4.1.2 Natural

The intent of the Natural land use designation is to preserve or maintain undeveloped areas such as mountain ridges, coastal bluffs, sand dunes, and beaches as well as protect the State Land Use Conservation Districts, the forest reserves, critical habitats of endangered native plant and wildlife, and archaeological preserves. It also includes the National Tropical Botanical Garden's Lāwa'i Kai Special Subzone of the State Land Use Conservation District, Nōmilu Fishpond, the lower reaches of Kalāheo Gulch, and much of the Māhā'ulepū coastline from Makawehi Bluffs to Kawaihoa Point. It also includes the area around Makauwahi Cave and Waiopili Heiau. It otherwise excludes lands in Agriculture, or designated as Important Agricultural Lands (IAL) under Hawai'i Revised Statutes (HRS) Chapter 205 Part III, or lands classified as Park and Recreation which includes both public and private parks and recreational facilities.

Lands designated Natural shall remain predominantly free of development involving buildings, non-permeable paving, and other construction. With the exception of kuleana, any construction that is permitted shall be clearly incidental to the use and/or maintenance of the lands and designed to blend in with the natural character of the surrounding area. Protection, restoration, management and maintenance, research, education, and managed public access are the recommended uses within the Natural lands. Where it overlaps existing zoning districts with any development potential or density, the underlying development rights should be allowed to either shift to more appropriate locations or be purchased and valued based on existing entitlements to avoid takings issues.

Since the land use policy is the most restrictive of all the SKCP land use designations, lands designated as Natural include specifically identifiable features that meet the criteria of the particular types of lands enumerated below:

- Conservation District Areas
- Watershed Areas
- Forest Reserves and Preserves
- Dune Lands and Beaches
- Critical Habitat
- Lāwa'i Kai Special Subzone
- Archaeological Preserves/Cultural Resources

4.1.3 Agricultural

Lands designated Agriculture shall include: lands in active agricultural use or lands with potential for agriculture, silviculture, or aquaculture. In addition, these uses range in scale from large agricultural fields, to taro lo'i and small papaya farms. Residential development that occurs is on large lots and is a secondary use to the agricultural uses of the land (Opticos) and must qualify as a "farm dwelling" or "employee housing" as defined per HRS §205-4.5(4) and HRS §205-45.5 for those on Important Agricultural Lands (IAL).

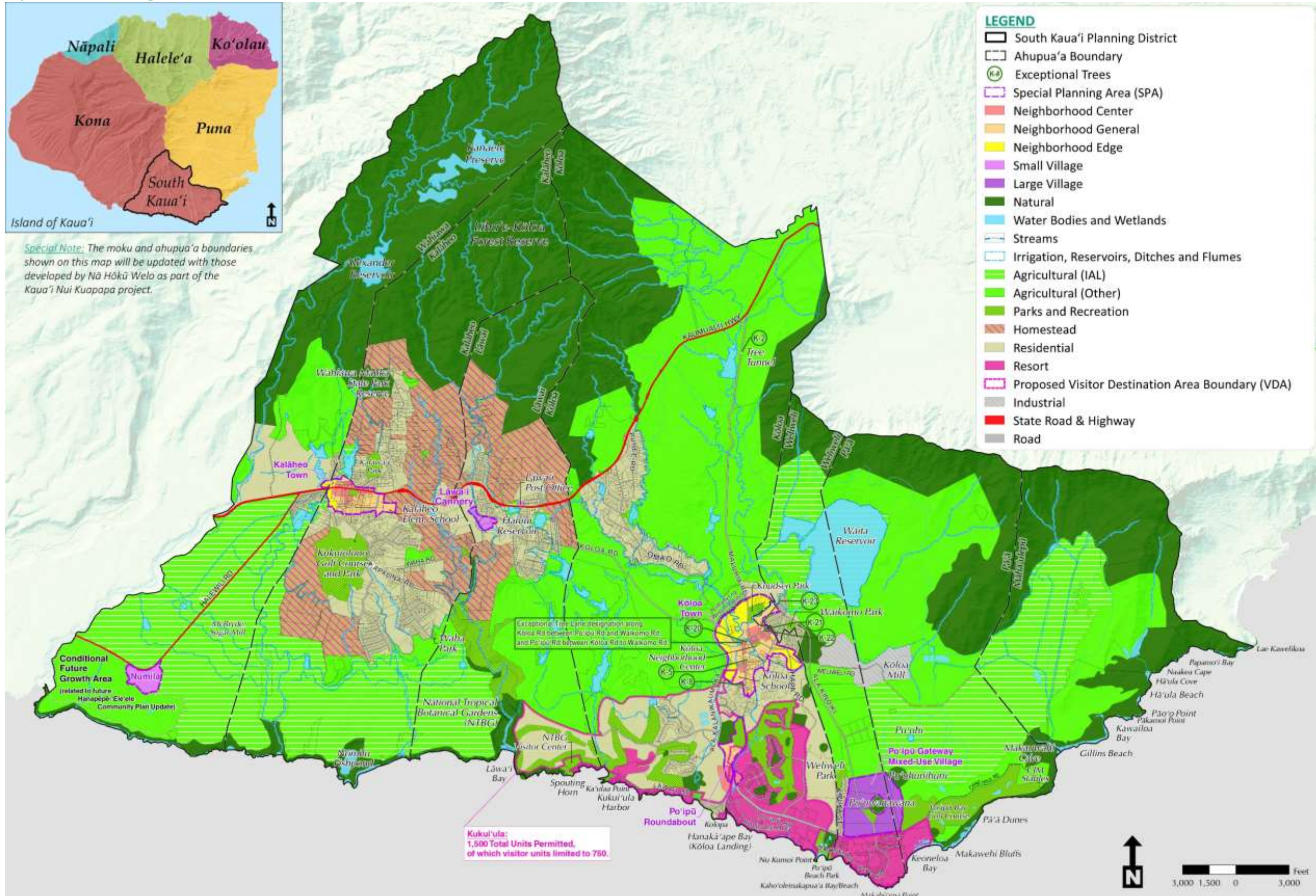
There are two types of Agricultural land uses designated on the Land Use Map:

Agricultural (IAL). The Land Use Map indicates areas currently classified as Important Agricultural Lands as crosshatched Agricultural lands. It includes all lands designated IAL to date by the State of Hawai'i Land Use Commission (HRS 205 Part III) which includes the lands successfully petitioned by Alexander & Baldwin (A&B) and Grove Farm Company.

The purposes of Important Agricultural Lands are: (1) conserving and protecting agricultural lands; (2) promoting diversified agriculture; (3) increasing agricultural self-sufficiency; and (4) assuring the availability of agriculturally suitable lands (HRS §205-41). They are defined as lands that (1) are capable of producing sustained high agricultural yields when treated and managed according to accepted farming methods and technology; (2) contribute to the State's economic base and produce agricultural commodities for export or local consumption; or (3) are needed to promote the expansion of agricultural activities and income for the future, even if currently not in production (HRS §205-42(a)). Once identified, these lands cannot be reclassified except under a super-majority vote of both houses of the state legislature.

Agricultural (Other). Other agricultural lands outside of the IAL are also designated on the map. They include the lands classified as State Land Use Agricultural District outside of the Natural, Homestead, and Parks & Recreation land use designations. Large, contiguous agricultural lands adjacent to designated IAL are also prioritized.

Figure 4-1: Land Use Map



4.1.4 Parks and Recreation

The lands designated as Parks and Recreation include both public and private parks and gardens, and recreational facilities, including beach parks, golf courses, playgrounds, playfields, and district parks. There are approximately 72 acres of public Parks and Recreation land in the Planning District and 35 acres of private Parks and Recreation land. It also includes areas designated as future parks such as the 20-acre community park site at Kukuīʻula and the roughly 7-acre future park designated at the Poʻipū Gateway Mixed-Use Village. The National Tropical Botanical Garden in Lāwāʻi comprises 202 acres of Parks and Recreation land.

4.1.4.1 Opportunities for Future Parks or Protected Areas

For several decades, Māhāʻulepū has long-acted as a recreational resource thanks to the landowner’s commitment to the community to provide access and maintain the area as a natural, cultural landscape, but also has been an area of concern to the community due to its development potential. The 2000 General Plan acknowledged that the landowner’s then proposal for low-scale resort development conflicted with the desire of community and environmental groups to preserve the area’s natural quality, but recognized the need for balance. The 2000 General Plan’s stated policy for Māhāʻulepū is:

Involve the community in planning for the future of Māhāʻulepū. Planning should take into consideration various interests and factors, including but not limited to: the long-term need for managing Māhāʻulepū lands to preserve their significant natural and cultural features; the owner’s desire to develop revenue-producing uses in a way that is sensitive to the area’s unique qualities; the need to secure permanent public access to the shoreline; and the potential to create a coastal park. (GP 2000)

Although admittedly not an exhaustive list, the 2000 General Plan called out two options for the area: allowing some development in exchange for a park and/or preservations areas, and purchase of the land for a State park.

A community group, Mālama Māhāʻulepū, was formed in 2000 for the purpose of working to preserve the natural and cultural resources of Māhāʻulepū, primarily by keeping the area relatively undeveloped but with agricultural, educational and recreations uses. Since then they have played an active role in educating the community about Māhāʻulepū’s special resources and have garnered community support for preservation. The County Council passed a resolution in 2001 supporting a collaborative planning effort to explore preservation options for the area. This was followed by a similar resolution in the State House of Representatives and Senate.

During the SKCP planning process, the community voiced a desire to secure permanent public access to the shoreline. Vehicle access is provided down a private dirt road which is secured via gates that are locked at sundown. Pedestrian access is provided on hiking trails that begin at Keoniloa Bay Park. These unmarked trails traverse the perimeter of the golf course and seabird habitat areas. Securing permanent public access via the private road and trail system is desired. However, public access should also be managed to minimize impacts to sensitive environmental and cultural resources, and to ensure public safety.

4.1.4.1.1 Permanent Vehicle Access

The private road is maintained by the landowner and is part of a network of unpaved roads providing access to agricultural lands throughout the valley. It is directly adjacent to existing agricultural activities. If, through fair valuation, the landowner is willing to dedicate the roadway to the County, the road would have to be constructed to County standards. Not only is the cost of constructing a two-mile road very high, but a paved road might conflict with the natural qualities of the area and would likely dramatically increase use of the area.

4.1.4.1.2 Permanent Trail Access

Another goal is to secure permanent public access along the coastal paths, also known as the Māhāʻulepū Heritage Trail. Discussions will have to consider that the trail traverses sensitive natural and cultural resources, including fragile landforms vulnerable to foot traffic. Security for the golf course and Makauwahi Cave should be considered too. If there is a need to obtain legal ownership of public accesses, options for potential conservation easements and/or future acquisition at fair market value via non-profit organizations such as the Hawaiian Islands Land Trust or Trust for Public Land should be explored to preserve the coastal areas.

4.1.4.1.3 Potential Park or Protected Area

In addition to securing permanent public access, protecting the coastal area’s natural, cultural and recreational resources in perpetuity is the ultimate goal. This could occur via the establishment of a conservation easement, or acquisition of the property for a park or other managed protected area. Such action could resolve access concerns while providing the framework for improved management of human impacts on the area’s environmental and cultural resources. A conservation easement is a voluntary agreement made with a landowner to remove all development rights in a specific area, usually though the purchase of development rights (PDR) or transfer of development rights (TDR). Another option is the fair market acquisition of the coastal area by a government or non-profit entity for a park or protected area. Some cursory steps have been taken to explore this option.

The National Park Service also performed a reconnaissance survey in 2008 to locate a potential national park in the coastal area from Māhāʻulepū to ʻAlekoko Fishpond in Līhuʻe. Based on their preliminary evaluations, the report concluded that, “The National Park Service Pacific West Region recommends that a Special Resource Study be authorized under the stipulations of Public Law 105-391, so long as it focuses on nontraditional management alternatives that a) involve local partners and b) include options for continued farm and ranch operations on private agricultural lands.” (NPS 2008) The National Park Service specified that it is the coastal and mountain areas in the Māhāʻulepū Watershed that have qualities of national significance. If acquisition by a government entity is desired, it would require subdivision of large parcels to facilitate such transaction. This would allow the private agricultural activities in the valley and on agriculturally-zoned lands to continue operations. Similarly, further discussions should occur to maintain public access along recreational paths throughout the Planning District and to the coastal areas where sensitive natural and cultural resources are not threatened and where public safety can be ensured.

4.1.5 Water Bodies and Wetlands

The Water Bodies and Wetlands designation includes all natural and manmade water bodies and watercourses. It highlights the manmade features or those reservoirs used for irrigation purposes in a darker blue running dashed line in Figure 4-1. These water features support the natural and agricultural environments as well as sustain South Kauaʻi’s communities. A comprehensive water planning strategy for the entire Planning District should be supported. Rather than relying on piecemeal, development-specific plans that may be limited in scope to the property at issue without due consideration of related impacts off-site throughout the system as a whole, this strategy should include, but not be limited to, consideration of water access, infrastructure, quality, and drainage, and the attendant oversight and maintenance. The elements of the water system highlighted in the plan include:

- Wetlands
- Streams
- Floodways
- Irrigation, Reservoirs, Ditches, and Flumes

4.1.6 Residential

The lands included within the Residential designation shall be used predominantly for primary residential housing. While some mixed use is permitted via zoning permits, these areas consist mainly of single-family and lower density rural communities and fall outside of the areas designated as SPAs for the FBC.

There are two Residential designations on the Land Use Map:

Residential. The Residential land use designation generally follows the County’s existing residentially zoned lands and the General Plan Residential Community designation with small modifications as delineated in Chapter 6. Added to these, is the Brydeswood agricultural subdivision west of Kalāheo. Residential lands consist mainly of single-family homes in rural settings.

Homestead. There are numerous homestead lots within South Kaua’i, mainly in Kalāheo and Lāwa’i, created in the early 1900s under the 1895 Land Act. Conveniently, the census designated place boundaries for Kalāheo, Lāwa’i, and ‘Ōma’o encompass these homestead lots. The State Land Use Law requires residential dwellings within the State Land Use Agricultural district to be “farm dwellings,” meaning that the occupant needs to earn income from agricultural use of the land (HRS §205-4.5(a)(4)). However, single-family dwellings are permitted on lots existing before June 4, 1976 (HRS §205-4.5(b)). Lands mapped as Homestead are included within this designation although the underlying zoning and State Land Use District are Agriculture because they are entitled to residential use and many parcels have long been developed with single-family residences.

4.1.7 Resort

For the lands within the Resort designation, the primary use shall be for housing and serving visitors to Kaua’i as well as the commercial and public facilities that serve visitors or support the visitor industry. Lands designated Resort may also be used for residential purposes, including resort employee housing.

It includes lands that are zoned Resort (RR) and the Resort areas from the General Plan Land Use Map with the exception of the Natural, Water Bodies, and Parks and Recreation designations.

All new Resort designated land is intended to amend the VDA boundary on the zoning maps for increased consistency between long-range land planning, zoning, and actual use. There may be some remaining permitted non-conforming vacation rentals scattered within the Residential land use designation. However, because there was no cohesive group of visitor units, they were not included in the Resort designation. The proposed VDA boundary is shown as a dotted pink line on the Land Use Map (Figure 4-1).

4.1.8 Industrial

Roughly 160 acres around the old Kōloa Mill Site is designated as Industrial on the Land Use Map. The Planning District currently does not have any industrially zoned land. However, to support the growing agricultural uses in the district and to encompass the existing solar farm and the potential site for a regional wastewater treatment facility, the Industrial lands shall be predominantly used for agricultural support facilities and renewable energy. These lands are located away from Residential and Resort uses yet close to Agricultural lands and major roads, Weliweli Road and Ala Kinoiki, for convenience.

The Industrial land use designation allows for facilities for processing, construction, manufacturing, transportation, wholesaling, storage, or similar economic activities, and accessory or supporting facilities which directly enhance their viability. It is recommended that zoning for this area be amended to I-G (General Industrial).

4.1.9 Future Growth Area related to the Hanapēpē-‘Ele‘ele Community Plan

The Future Growth Area related to the Hanapēpē-‘Ele‘ele Community Plan is a general designation for an area envisioned by A&B Properties, Inc. 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 Land Use Map, it is shown as a placeholder and will be further defined as part of the future Hanapēpē-‘Ele‘ele Community Plan update. No projected residential growth for South Kaua’i has been allocated to the area as a part of this community plan update and the zoning will not be amended as part of this plan. It is therefore left in Agriculture on the Land Use Map. Its rough boundaries are shown as a placeholder and the area will be further defined during the future Hanapēpē-‘Ele‘ele Community Plan update.

4.2 WALKABLE MIXED-USE COMMUNITIES

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 identified in Section 4.1.1. More detailed development requirements are provided in the FBC. The main goal 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.

4.2.1 Compact Walkable Neighborhoods

- a. Improve Kōloa, Kalāheo, and Po‘ipū town core areas as vibrant mixed-use places.
- b. Locate commercial areas containing a variety of establishments, personal services, professional offices, restaurants, grocery and retail stores within walking distance of where people live, work and play.
- c. Locate community facilities, schools, parks, and recreational facilities within walking distance of primary housing.
- d. Create a pedestrian- and bike-friendly environment in Kalāheo by providing continuous sidewalks and bike lanes along Kaumuali‘i Highway.
- e. Create a secondary main street environment in Kalāheo along Papalina Road fronting the commercial uses.
- f. Provide a neighborhood grocery store in Kalāheo.
- g. Kalāheo provides the most substantial commercial destination along the entire highway stretch between ‘Ele‘ele and Līhu‘e. Businesses may be able to attract and cater to both local and regional commercial needs, for those regularly traveling through the community, while retaining the scale and character of Kalāheo.
- h. Kōloa’s main street is one of the most successfully walkable centers of all Kaua’i. Higher density within the town core in the form of tighter or smaller units while maintaining 2-2.5 story height limits will provide affordable housing while maintaining the historic character of Kōloa.
- i. Tourism supports a good portion of commercial activity in Kōloa’s commercial center; however, ironically, development that is solely tourist-oriented detracts from the charm and authenticity of a place. Safeguarding against this and balancing development that supports local residents and visitors alike is critical for Kōloa to preserve its greatest asset: its uniqueness of place.
- j. The small business district around the old cannery in Lāwa’i could become more pedestrian-friendly and provide a mix of housing. The old cannery itself is large and underutilized as a self-storage facility; it could ultimately be a significant opportunity for reuse or redevelopment.

4.2.2 Distinct Rural Communities

- a. Foster the unique sense of place within each community.
- b. Maintain the distinction between each community by keeping the cores intact and making them the focus of any future growth. Future development should maintain the existing character and building form of each community.
- c. Protect the rural character of the community from sprawling development. Sprawling development patterns between the different towns and especially between Kōloa and Po'ipū should be avoided to maintain the areas as distinct communities.

4.2.3 Housing Location and Options

- a. Provide for a diversity of housing to accommodate various household types, incomes and family sizes. The ability to afford a place to live close to work, commercial services, and places to play fosters independence, allows income to be spent in other ways besides transportation costs, and builds community.
- b. Focus the residential population to infill on vacant zoned land and strategic areas contiguous to existing settlements. Beyond the absorption within existing urban zoned land, the future population growth as projected by SMS through 2035 shall be directed to the following areas:
 - Existing Town Centers- Kōloa (24 percent) and Kalāheo (3 percent)
 - Po'ipū Gateway (60 percent)
 - Numila (8 percent)
 - Homestead lots (5 percent)
- c. Locate a mix of housing including workforce housing close to employment centers. The new Po'ipū Gateway Mixed-Use Village is an opportunity to locate a variety of housing options including higher-density workforce housing within walking and biking distance of the Po'ipū resort community, one of the largest employment centers on the island and the largest in the Planning District (CH2MHill 2014, Exhibit 3.3). The CAC envisioned this area to be the focus of the majority of future growth within the Planning District to preserve the character of existing historic towns. Over 1,000 housing units (60 percent of projected residential growth) has been allocated here. The CAC also envisioned this as the highest level transect in the Planning District.
- d. Allow for a variety of accessory dwellings such as 'ohana units and "granny flats" within the SPAs.
- e. Provide affordable housing, especially in the Kōloa-Po'ipū area, a major jobs center on the island, through policies and actions that ensure sufficient affordable housing in the region on a long-term basis.
- f. Preserve affordable housing stock and provide options that support senior housing and aging in place.

4.3 CONTEXT-SENSITIVE TRANSPORTATION NETWORKS

According to the surveys and feedback received during the project kickoff, one of the most desired wishes for South Kaua'i is safer transportation networks, especially for pedestrians and cyclists and particularly around schools. The surveys and public meetings that were a part of the Kaua'i Multimodal Land Transportation Plan (2012) found that the transportation-related desires of the residents of Kaua'i can be summarized into five categories: safety, transit, bicycling, pedestrians, and local roads and streets. In the Planning District, residents identified the following as important transportation needs of their district:

- Safe streets for children to walk and bicycle
- Walk/bicycle facilities connecting homes to schools, parks, and beaches
- More frequent bus service
- Shelters at bus stops

4.3.1 Multimodal Roadway Network

The focus of the multimodal roadway network is system preservation and increasing facilities for pedestrians, cyclists, and bicycle and transit riders to encourage alternate means of getting around rather than using single-occupancy vehicles. Similarly, the County of Kaua'i recently completed the *Kaua'i Multimodal Land Transportation Plan* in September 2012 which targets zero growth in vehicle miles traveled through 2035 as its preferred scenario compared to a 19% increase in traffic levels and a 15% increase in average household transportation cost in the baseline scenario (Charlier 2012). In order to achieve this goal, more people will need to walk, bike, or take transit to their destinations and based on the feedback from the South Kaua'i communities, they are very much in support of making the roadways safer for pedestrians and cyclists. Therefore, in order to support and encourage this modal shift and to preserve the unique character of each of South Kaua'i's towns, the multimodal roadway network is designed to improve internal pedestrian and bicycle circulation within key areas of each town and to connect each town with each other along regional connector roads.

4.3.1.1 Map Symbols

Figure 4-2 highlights the multimodal roadway network proposed for South Kaua'i. The roadways in red are recommended to remain as two-lane roadways. Existing roundabouts are shown as an open red circle and proposed roundabouts are shown as a solid red circle.

Pedestrian facilities are shown in green with dotted green lines indicating sidewalks or pedestrian paths and green squares highlighting the need for safer pedestrian crossings at intersections. The solid green lines are where separated pedestrian/bike paths are recommended.

Bicycle facilities are shown in blue with solid blue lines recommending bike lanes on both sides of the roadway and dotted blue lines indicating bikes on the road shoulders or a signed shared bike route.

The recommendations are conceptual in nature and the detailed design for each of these improvements would follow via the County and State DOT's design and construction processes.

4.3.1.2 Transportation Studies

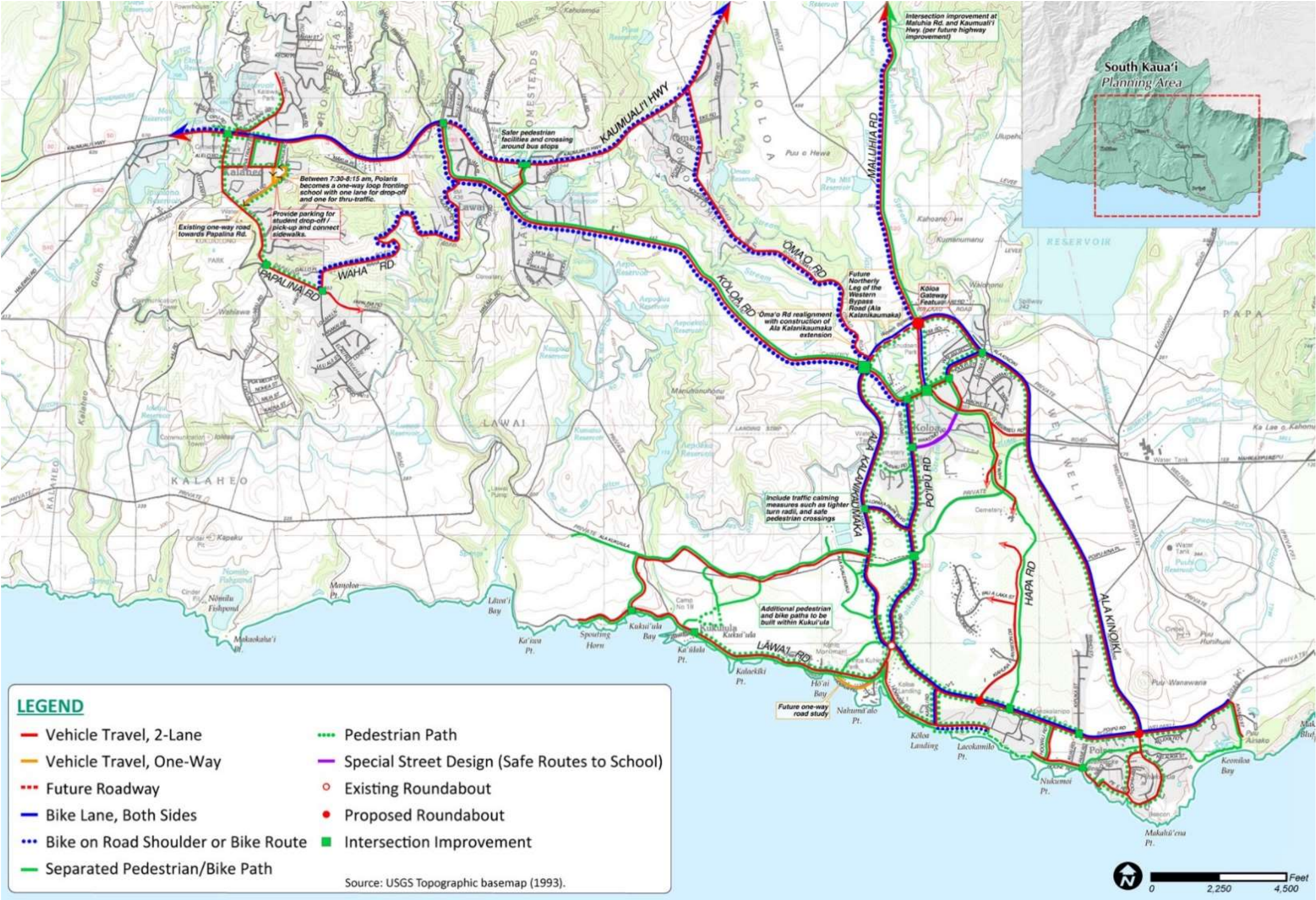
4.3.1.2.1 Federal-Aid Highways 2035 Transportation Plan for the District of Kaua'i

According to the *Federal-Aid Highways 2035 Transportation Plan for the District of Kaua'i* report prepared by CH2MHill, most of the projected 2035 traffic on South Kaua'i roadways operate at Level of Service (LOS) C with a volume-to-capacity ratio, or V/C ratio < 0.8, or well-below existing roadway capacities. See Figure 4-3. The only exceptions were a few locations where projected daily volumes are at or exceed roadway capacity (LOS F):

- Kaumuali'i Highway between Halewili Road and Upa Road (although there are short sections which have a V/C of 0.8 - 1.0, or LOS D or E)
- Kaumuali'i Highway east of Maluhia Road
- Po'ipū Roundabout
- Intersection of Ala Kinoiki and Po'ipū Road

In order to solve these projected traffic failures, the plan only included solutions that could be funded via the Federal-Aid Highways program which eliminated transit improvements. It did not include any evaluation of mode shift from vehicles to transit, bicycle, or walking.

Figure 4-2: Multimodal Roadway Network



The recommended list of projects within the South Kaua'i Planning District from the Federal-Aid Highways 2035 Plan includes:

- Widening Kaumuali'i Highway to a divided 4-lane facility between Kōloa Road and Kalāheo Town
- Kaumuali'i Highway Improvements east of Kōloa Road
- Widening Po'ipū Road to include bike lanes, sidewalks, and intersection improvements between Lāwa'i Road and Ala Kinoiki
- Construction of the northern leg of the Western Access Road as a 2-lane, signed shared roadway from Kōloa Road to Maluhia Road

Figure 4-3: Projected Traffic, 2035



4.3.1.2.2 Traffic and Transportation Study for South Kaua'i CP

In developing the multimodal roadway network for this South Kaua'i Community Plan, the traffic engineers, Fehr & Peers, were tasked to:

1. Confirm and update/adjust as needed, the Kaua'i long-range land transportation demand model used in the *Federal-Aid Highways 2035 Transportation Plan for the District of Kaua'i* report.
2. Include SMS's projected residential growth allocated to the Planning District.

3. Determine if maintaining the roadways shown in red on the multimodal roadway network map as two-lane roads would allow projected 2035 traffic with the allocated growth to flow at or below capacity (V/C ratio ≤ 1.0) without adding a new coastal bypass road that is in shown the 2000 General Plan stretching from Port Allen to Po'ipū (potentially undesirable due to cost, negative impacts to Lāwa'i Valley, encouraging unwanted continued private vehicle use, and potential increased development along the coast), and;
4. If not, determine which roadway segments would operate above capacity (V/C ratio ≥ 1.0) and why (e.g., is the majority of the traffic through-traffic or traffic internal to the Planning District?). Calculate how many trips would need to be shifted to other modes of transportation to have them operate at V/C ratio ≤ 1.0 .
5. Provide preliminary analysis of alternative intersection designs for:
 - a. Papalina Road and Kaumuali'i Highway in Kalāheo, and;
 - b. Maluhia Road and Kōloa Road in Kōloa.

For purposes of this analysis, the observed and projected traffic volumes of a roadway segment are compared against its capacity to determine the V/C ratio. Fehr & Peers uses a daily V/C ratio for this study since it is used to evaluate the overall operation of a roadway for long-range planning purposes, similar to the CH2MHill study. This type of modeling, however, is generally not suitable for an evaluation of specific intersection designs which require the use of detailed modeling for peak hour operations.

In their analysis, Fehr & Peers calculated the existing roadway operations to be at or below capacity. However, projecting baseline traffic without the residential growth projected by SMS for 2035 shows that three segments of Kaumuali'i Highway exceed its capacity between Kalāheo and 'Ōma'o (Table 4-1).

Table 4-1: 2035 Traffic Projections without Residential Growth Allocation

Roadway	Location	Volume	Capacity	V/C Ratio
Kaumuali'i Highway	West of Papalina Road	21,600	19,800	1.09
Kaumuali'i Highway	Between Papalina Road and Kōloa Road	22,200	19,900	1.12
Kaumuali'i Highway	Between Kōloa Road and 'Ōma'o Road	21,400	19,800	1.08
Kaumuali'i Highway	East of 'Ōma'o Road	21,800	24,800	0.88
Maluhia Road	North of Ala Kinoiki	18,200	24,800	0.73
Ala Kinoiki	East of Maluhia Road	7,200	16,800	0.43
Ala Kinoiki	North of Po'ipū Road	11,100	16,200	0.69
Papalina Road	South of Kaumuali'i Highway	3,100	15,800	0.20
Kōloa Road	South of Kaumuali'i Highway	13,000	19,000	0.68
Kōloa Road	North of Po'ipū Road	9,500	22,200	0.43
Po'ipū Road	South of Kōloa Road	7,000	19,000	0.37
Po'ipū Road	West of Ala Kinoiki	11,500	15,800	0.73
Note: Deficient segments shown in bold				
Source: Table 6-1 (Fehr & Peers 2014) and Kaua'i 2035 Transportation Demand Forecasting Model (TDFM).				

When the SMS projected residential growth is added to the traffic model for 2035, the same three segments of Kaumuali'i are over capacity at slightly higher V/C ratios. The remaining roadway segments are well-below their capacities except the remaining segment of the highway which is nearing its capacity (V/C ratio = 0.94). See Table 4-2.

Table 4-2: 2035 Traffic Projections with Residential Growth Allocation

Roadway	Location	Volume	Capacity	V/C Ratio
Kaumuali'i Highway	West of Papalina Road	23,100	19,800	1.17
Kaumuali'i Highway	Between Papalina Road and Kōloa Road	23,500	19,900	1.18
Kaumuali'i Highway	Between Kōloa Road and 'Ōma'o Road	22,900	19,800	1.16
Kaumuali'i Highway	East of 'Ōma'o Road	23,400	24,800	0.94
Maluhia Road	North of Ala Kinoiki	21,000	24,800	0.85
Ala Kinoiki	East of Maluhia Road	7,200	16,800	0.43
Ala Kinoiki	North of Po'ipū Road	10,900	16,200	0.67
Papalina Road	South of Kaumuali'i Highway	3,600	15,800	0.23
Kōloa Road	South of Kaumuali'i Highway	14,200	19,000	0.75
Kōloa Road	North of Po'ipū Road	10,400	22,200	0.47
Po'ipū Road	South of Kōloa Road	7,000	19,000	0.37
Po'ipū Road	West of Ala Kinoiki	12,000	15,800	0.76
Note: Deficient segments shown in bold				
Source: Fehr & Peers, 2014				

Fehr & Peers also found that the collector roads internal to South Kaua'i will continue to operate at acceptable levels of service even with the projected growth. However, the traffic on the highway will continue to exceed modeled capacity. While the traditional approach for many traffic engineers and transportation planners would be to recommend the expansion of a roadway which is projected to operate deficiently, Fehr & Peers recognizes many factors which are unique to transportation in Kaua'i and reflect the context environment. These factors include:

- Widening significant sections of Kaumuali'i Highway would likely be extremely costly and have significant negative impacts on the adjacent properties and the environment.
- The study area currently lacks significant facilities for alternative travel modes; thereby forcing people to drive where they might otherwise want to walk, bike, or use transit.
- The widening of the roadway may not be fully compatible with recent long-range transportation planning efforts.
- The assessment of daily capacity often does not fully address the benefits of targeted improvements such as the addition of turn lanes, roundabouts, traffic signal upgrades, and other related strategies to increase capacity at intersections, which are the constraint points of the roadway network (Fehr & Peers 2014).

Fehr & Peers next analyzed the likely effects of targeted improvements and multimodal transportation policies which would moderate travel demand and minimize congestion. In their travel mode shift analysis, they estimated that approximately 1,800 daily vehicle trips would need to be diverted to use alternative travel modes along the highway. When typical auto occupancy factors are applied to this number of vehicle trips, it results in approximately 2,000 daily person trips that would need to change modes. Fehr & Peers also estimates that roughly 70% of the traffic on the highway through Kalāheo is through-traffic, traveling between Westside and areas east of the Planning District. Therefore, the first priority is to continue to support a mode shift of drivers passing through the Planning District to transit and support internal circulation with improved bicycle and pedestrian facilities.

However, while transit is one likely mode of diversion, Fehr & Peers warns it may not provide sufficient capacity for all of the 2,000 daily person trips. There may be a “saturation point” of those willing to give up their car regardless of the cost of gas or the convenience of transit. Any significant reductions in traffic volumes along Kaumuali'i Highway would therefore require some diversion of vehicular traffic to bicycle and pedestrian routes. According to data provided by the American Community Survey (ACS) for 2012, nearly 20 percent of all commute trips on the island of Kaua'i travel by car but have a work trip of 10 minutes or less. Trips of this distance are often able to be easily made by walking or bicycling if the facilities are present. By providing bicycle and pedestrian facilities where they currently do not exist, some level of diversion may be possible. An analysis of travel patterns on Kaumuali'i Highway indicates that as much as 10 percent of the vehicular traffic on these deficient segments of the highway are local as opposed to longer-distance through trips. Diverting a significant portion of these local trips is another way to reduce vehicle demand associated with the plan. (Fehr & Peers 2014)

Therefore, reducing vehicular demand along Kaumuali'i Highway will require implementing the multimodal transportation measures identified in Figure 4-2 along with a meaningful diversion of trips to transit. This diversion of transit trips can only occur if there is sufficient capacity in the transit system, which will require expansion of service along the Kekaha-Līhu'e Mainline route beyond what is provided today (Fehr & Peers 2014) as well as an increase in convenience for transit riders whether it is the scheduling or location of stops. The alternative of building additional roads such as the coastal bypass or widening roads are not ideal solutions for serving regional transportation needs as it will place a disproportionate burden on Kalāheo Town and Lāwa'i Valley to serve those west and east of these communities. It will also only serve those who are able to drive and who are typically inconvenienced when driving over a certain period of time (peak hour traffic) while the negative impacts (loss of natural and social communities) will be permanent. If an alternative east-west road is required for emergency bypass, the County and DOT should work with adjacent landowners to use existing agricultural roads near the highway. Another less impacting option would be to improve existing east-west roads to connect closer to existing towns and communities to minimize the impact to agricultural and natural areas and to discourage dispersing development along the coast.

4.3.1.2.3 Scenic Roadway Corridors

Scenic Roadway Corridors are primarily designated in areas between towns where the surrounding lands are primarily designated Agriculture and Open. Where a Scenic Roadway Corridor is designated within a town or adjoins an area planned for urban use, the primary intent is to promote building setbacks, landscaping, and views of scenic features. Attention must also be given to the number of ingress and egress points along the highway, which, unless limited and carefully planned, will disrupt the free flow of traffic along the highway. Scenic Roadway Corridors are intended to provide design guidance but not to restrict the principal land uses of urban areas.

4.3.2 Public Transit

During peak hours, the buses often run at capacity and have been known to turn away riders because they are too full. To alleviate the problem, on March 17, 2014 the Transportation Agency added a new route (#150) between Kaumakani and Līhu'e. There are two runs in the morning and two runs in the afternoon, which have eased the crowded condition that was occasionally resulting in denying boarding to some riders at Kalāheo Neighborhood Center in the morning. The afternoon #150 route may be adjusted to begin in Waimea rather than Kaumakani because the peak ridership is usually Waimea High School students boarding at Ishihara Market in Waimea in the afternoon. The Kaua'i Transportation Agency is also planning to purchase slightly larger buses with a 35-40 passenger capacity in the next few years to service the mainline. This is compared to their current 29-33 passenger buses. (Kaua'i Transportation Agency 2014)

Public opinion regarding public transit, collected at workshops and with “wishcards”, revealed that the top concerns include service efficiency and expansion (62%) followed by amenity improvements (29%). The proposed transit improvements aim to address these fundamental improvements. Service expansion was highly desired by the public. Four of thirteen related discussions revolved around a need for a bus stop along 'Ōma'o Road. These discussions were followed by improved shuttle service to connect Kōloa Town to Po'ipū and its beaches.

Figure 4-4: Proposed Bus Routes and Priority Shelter Locations



Amenity improvements ranked as the next top concern. 83% of these comments desired more bus shelters. As of April 2015, there are two bus shelters—one across the highway from the Lāwa'i Post Office, and one at the Kalāheo

Neighborhood Center, which also serves as a park and ride facility (the only designated site in South Kaua'i) and a transfer stop for both the mainline and shuttle routes. The County of Kaua'i Transportation Agency will also install bike racks and trash receptacles at the bus shelter across the highway from the Lāwa'i Post Office and expects to start Phase II of shelter construction in early 2016. Phase II includes the bus stops at the Lāwa'i Post Office, Kōloa School, and at Po'ipū Road/Ho'owili Road. The Transportation Agency is currently finalizing a study on implementing and prioritizing additional bus stop shelters island-wide. Through this process, additional “priority” bus shelter needs were identified for the following stops: “Kuku'i'ula Store” (which will have two bus stops) and “Kiahuna Drive.”

To address these community needs, the following changes are proposed for the Kaua'i Bus service and are illustrated in Figure 4-4.

- Kekaha-Līhu'e Mainline:** Consider increasing the size of vehicle or increasing the frequency during peak hours to increase capacity and improve convenience to encourage increased ridership. As a rough estimate, to shift 50 percent or 1,000 person trips to transit during the peak morning and afternoon commute, fourteen to fifteen additional 50-passenger buses at crush capacity. Crush capacity describes the condition where there are passengers both seated and standing in a bus. If the buses ran during two 2-hour long peak periods (one in the morning and one in the afternoon), this would require the buses to run roughly every 30 minutes in both directions. To shift 70 percent, or 1,400 person trips, the amount of projected pass-through traffic, this would require twenty additional 50-capacity buses at crush capacity. These additional buses could run over extended periods or the intervals between buses could be shortened to 20 minutes depending on demand.
- Kōloa Shuttle:** Shift the southbound leg of the route from Kōloa Road to 'Ōma'o Road and stop at Hale Kapuna Heritage Home, an assisted living care facility, in 'Ōma'o. This will provide the community-requested service to 'Ōma'o and a connection to Kōloa, Po'ipū, Kalāheo, and Lāwa'i. Only 0.3 miles will be added to the total distance traveled compared to its existing route. The proposed location also serves as a school bus stop. Construction of a bus pullout and shelter would serve multiple users. Increase frequency to improve convenience for employees. Consider adding a stop at Lāwa'i General Store on Kōloa Road to provide access to these businesses and future SPAs.
- Po'ipū-Kōloa Shuttle:** Work with PBRA to extend and expand the Intra-Po'ipū Shuttle service to daily operations and provide a stop in Kōloa Town to serve visitors and residents alike. Adjust service hours to maximize ridership and improve cost-efficiency.

4.3.3 Parking

For public parking, the conceptual street designs provided in Section 4.3.4 show on-street parking wherever possible to supplement the existing parking lots and to organize the streetscape, providing a buffer for pedestrians between traffic and the proposed sidewalks. The 2000 GP Update's vision for Kōloa also included pockets of public parking at each end of town, which could also be pursued in partnership with existing landowners and businesses. A parking audit could be performed for Kōloa to take a detailed look at the number of available parking spaces and how many are truly needed to support the existing and projected businesses and residents in town. There may be opportunities to partner with newer developments such as Kōloa Rum and the Knudsen Trust to provide public parking as part of their projects.

Another concept is to charge for parking, both in private lots and at on-street parking stalls to discourage people from driving single occupancy vehicles and encourage them to carpool, walk, or bike. The fees collected from public parking could then be used for the installation and maintenance costs of the proposed streetscapes.

4.3.4 Conceptual Intersection Improvements and Street Sections

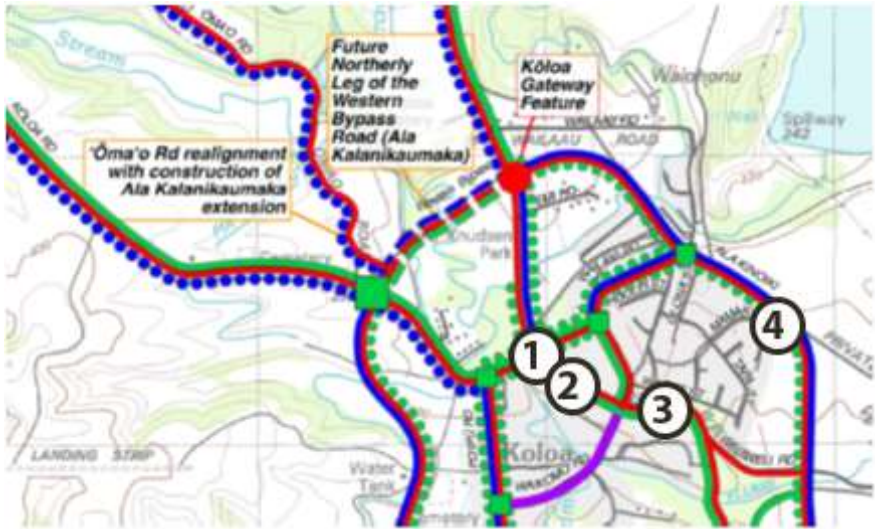
The following conceptual intersection improvements and street sections are organized by community and numbered to reference the locations on the key maps for Kōloa, Kalāheo and Po'ipū. As these are meant to be conceptual in nature, there may be multiple options for some street sections, providing different alternatives that can be refined during the design phase. Every attempt was made to stay within the existing rights-of-way to minimize impacts to the adjacent properties. Where additional space is required, this would be sought as easements primarily for pedestrian use or a shared use path.

4.3.4.1 Kōloa

Conceptual streetscape improvements for Kōloa Town focus on improving the pedestrian environment in this bustling town center and providing appropriate bicycle connections through and to town). Also, recent information from the State of Hawai'i Department of Education (DOE) indicates that over 80 percent of students live within one mile of school and according to a November 2012 parent survey, for those who live within walking distance but do not allow their children to walk or bike to school, the primary reasons are: 1) the lack of safe sidewalks or pathways (65 percent), 2) the amount of traffic along route (62 percent), and the speed of traffic (62 percent) (County of Kaua'i 2013). The sentiment for improved pedestrian and bicycle facilities was echoed in the community surveys collected at the South Kaua'i CP project kick-off.

There are two major streets in Kōloa that are being designed under separate efforts. Waikomo Road is currently being redesigned by the County with a variety of options considered ranging from narrowed vehicle lanes with a striped shoulder for pedestrians and cyclists to a one-way street. Po'ipū Road improvements are already planned from Kōloa Road to the Hyatt and estimated budgets are already on the STIP. The designs will be based on those developed during the County's Po'ipū Road Charrette held in May 2013. Figure 4-5 is the key map for road and intersection improvements in Kōloa.

Figure 4-5: Kōloa Key Map



Kōloa Road (1). The intersection of Kōloa Road and Maluhia Road is the heart of historic Kōloa Town. This is the iconic view recognized for its plantation-style storefronts, covered walkways, and busy streets. Unfortunately, there are currently no continuous sidewalks and only two marked crosswalks—one that leads right into Sueoka's parking lot and the other at the far eastern end by the post office. Pedestrians must weave between parked cars and oncoming traffic to walk to different establishments along Kōloa Road. If it rains, puddles often accumulate forcing pedestrians further into the vehicle lanes. Makeshift bulbouts and paths have been installed via flexible bollards to provide refuge for pedestrians. However, more could be done to improve pedestrian safety and their experience through Kōloa Town.

Figure 4-6: Conceptual Streetscape Improvements for Kōloa Town, Alternative 1

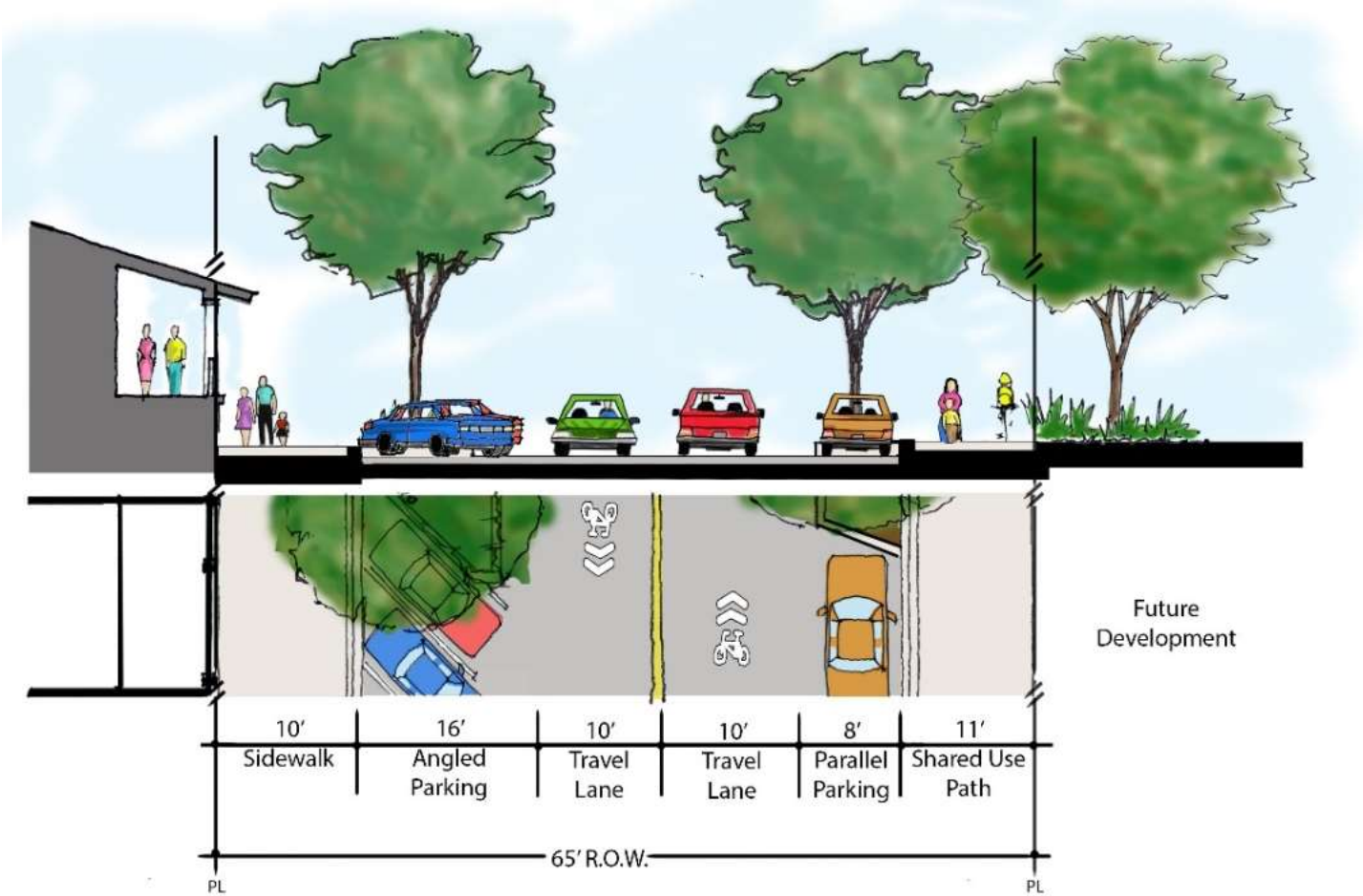


Figure 4-7: Conceptual Streetscape Improvements for Kōloa Town, Alternative 2



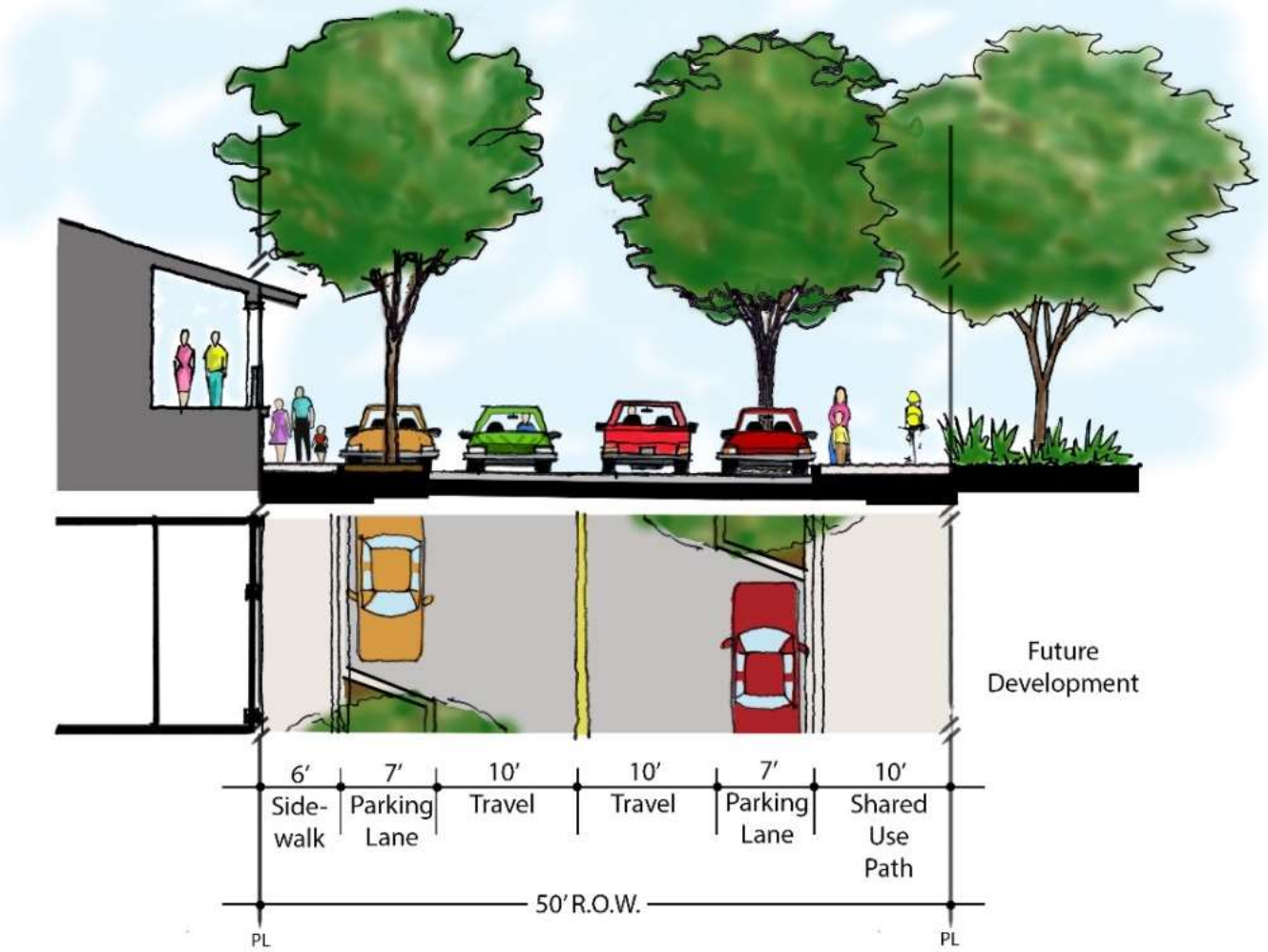
Figure 4-6 and Figure 4-7 provide an overview of the potential improvements that could be made to the existing right-of-way (ROW) including a wider, continuous sidewalk on the makai side of the road, a shared use path on the mauka side of the road, on-street parking, and landscaped bioswales to help mitigate runoff. The ROW for Kōloa Road to the east of the Maluhia intersection is 65 feet wide which will comfortably accommodate a shared use path, sidewalks and angled and parallel parking. The main difference between the two plans is the inclusion of on-street parking in front of Sueoka's. Alternative 1 does not include parking in order to simplify traffic movements in the area since it is located at the end of Maluhia Road. The curb is extended to provide a larger pedestrian space with benches, landscaping, and signage to welcome people as they enter historic Kōloa Town. The angled parking along Kōloa Road is reverse-in for this alternative. In Alternative 2, the angled parking extends in front of Sueoka's to provide additional public parking and should remain head-in for safety through the T-intersection. There was disagreement between the traffic engineers, who felt Alternative 1 would be safer, and the County DPW, who felt traffic speeds would be slow enough to maintain the stalls in front of Sueoka's. In both alternatives, bicycles will share the roadway on Kōloa Road via sharrow lanes. See Figure 4-8.

Figure 4-8: Kōloa Road with Angled and Parallel Parking (Kōloa Key Map 1)



Where Kōloa Road narrows to a 50-foot ROW, the shared use path should be maintained on the mauka side of the road, but the makai sidewalk narrowed and on-street parking limited to parallel stalls with tree wells in bioswale bulbouts (Figure 4-9).

Figure 4-9: Kōloa Road with Parallel Parking (Kōloa Key Map 1)



An example of where similar pedestrian and bioswale improvements were made can be seen in Figure 4-29 and Figure 4-30 taken on Bainbridge Island off of Seattle, WA. For Kōloa Road, native plants and street furniture that will complement the existing historic buildings should be used.

Weliweli Road Approaching Kōloa Town (2). For Weliweli Road just south of Kōloa Road, there are two alternative street sections—one with a 6 foot sidewalk, a 10 foot shared use path for both pedestrians and cyclists, and a 4 foot landscape strip, and the other with sidewalks, parallel parking on one side of the street, and bicycles would share the vehicle travelway. See Figure 4-10 and Figure 4-11. Alternative 1 provides a transition to the rest of Weliweli Road as it approaches Hapa Trail. However, the tradeoff is there is no on-street parking.

Weliweli Road Connection to Hapa Trail (3). The concept for the next segment of Weliweli Road between Waikomo Road and Hapa Trail is to provide a shared use path and sidewalk as easements on the adjacent undeveloped land (Figure 4-12). This will provide a transition between the pedestrian/bike-only Hapa Trail and Kōloa Town where cyclists will need to slow down and be more aware of vehicle traffic and pedestrians. Street trees, landscaping, and parallel parking provide buffers between vehicles and the bike path and sidewalk fronting the new development.

Figure 4-10: Weliweli Road Approaching Kōloa Road (Alternative 1, Kōloa Key Map 2)

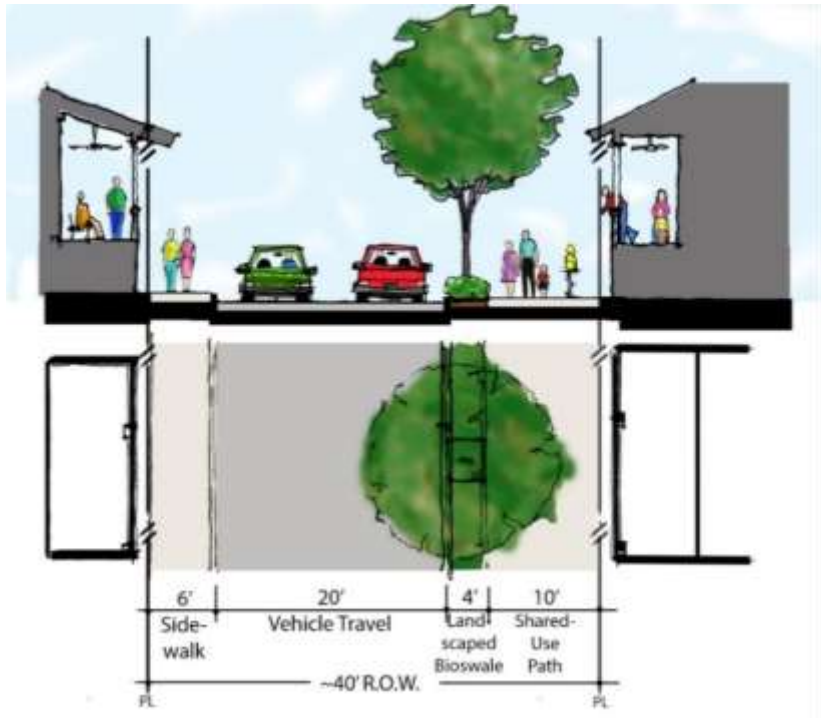


Figure 4-11: Weliweli Road Approaching Kōloa Road (Alternative 2, Kōloa Key Map 2)



If the easements on private property are not pursued, either Alternative 1 or 2 of the Weliweli Road section approaching Kōloa Road, whichever is selected, can be continued on this segment.

Ala Kinoiki (4). There are two conceptual alternatives for Ala Kinoiki which has a 60-foot ROW—one that includes bike lanes and a 5 foot sidewalk on both sides of the street. The other has a separated 10 foot shared use path for pedestrians and bicycles with 5 foot shoulders on the roadway which could be used for commuter or higher-speed biking. See Figure 4-13. Landscaped bioswales and broad canopy street trees are included in both alternatives to provide drainage and filtration of runoff and shade along this major connector road. Native trees and plants are preferred as Ala Kinoiki is named in honor of the mother of Prince Jonah Kūhiō Kalanianaʻole, Princess Victoria Kūhiō Kinoiki Kekaulike. She was the daughter of Kauaʻi's last king, Kaumualiʻi, and sister of Queen Kapiʻolani.

Figure 4-12: Weliweli Road Connector to Hapa Trail (Kōloa Key Map 3)

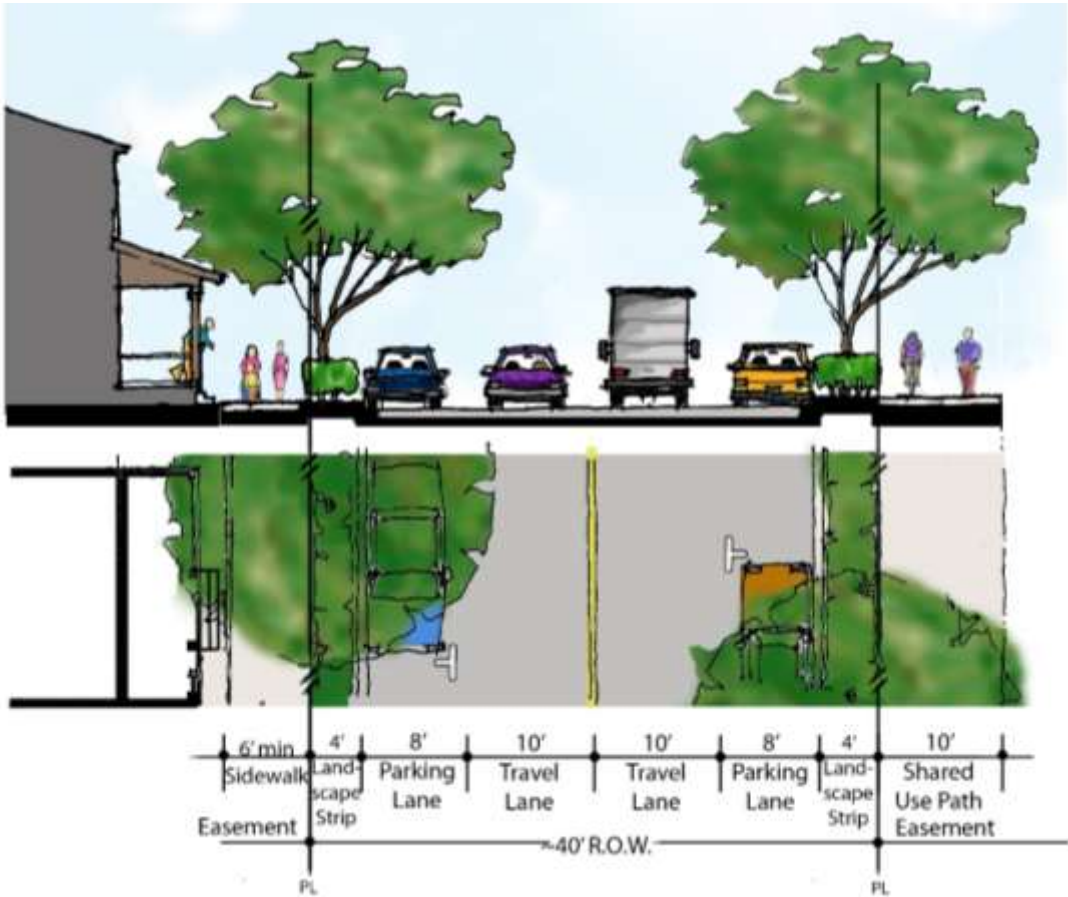
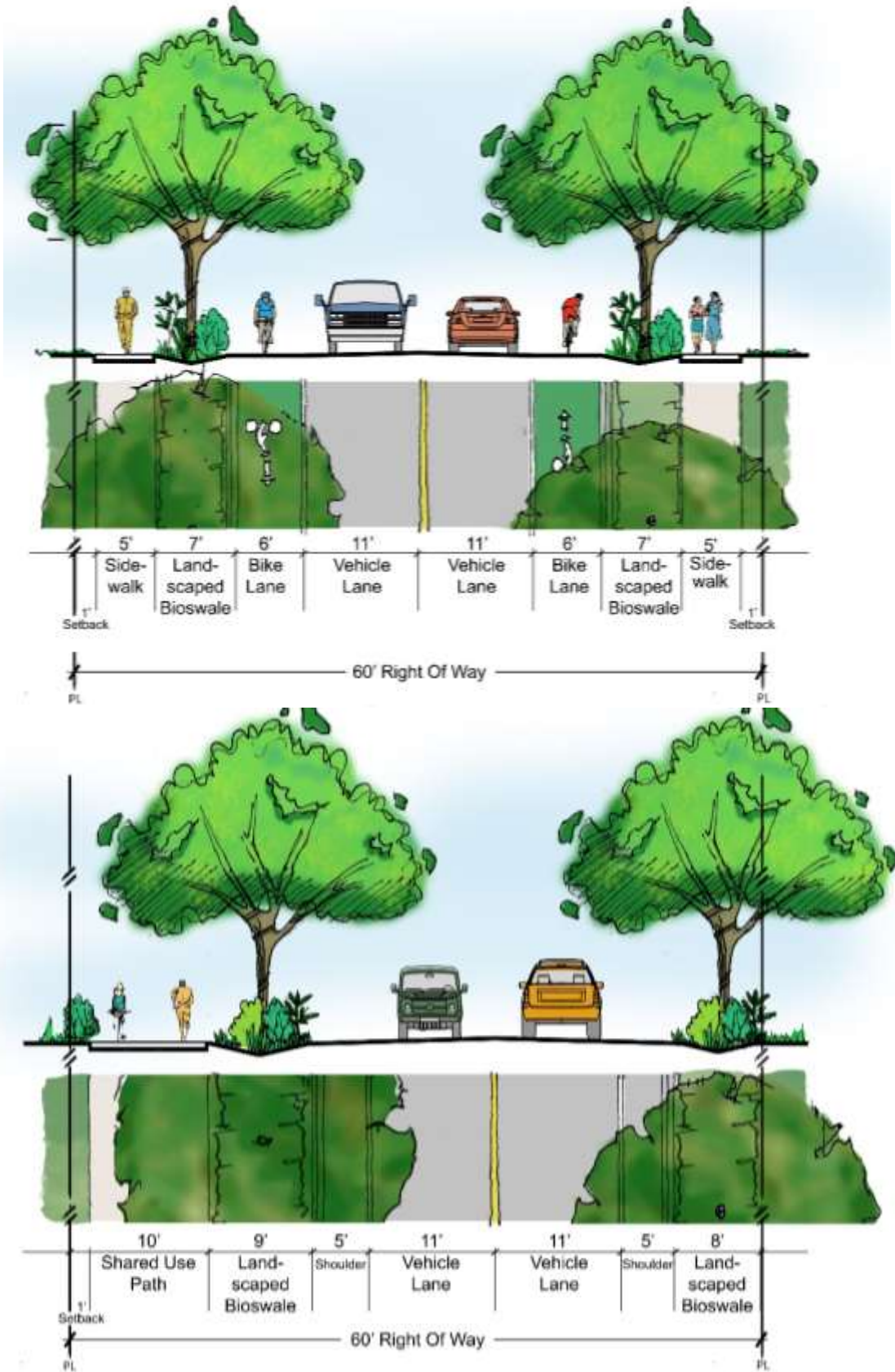


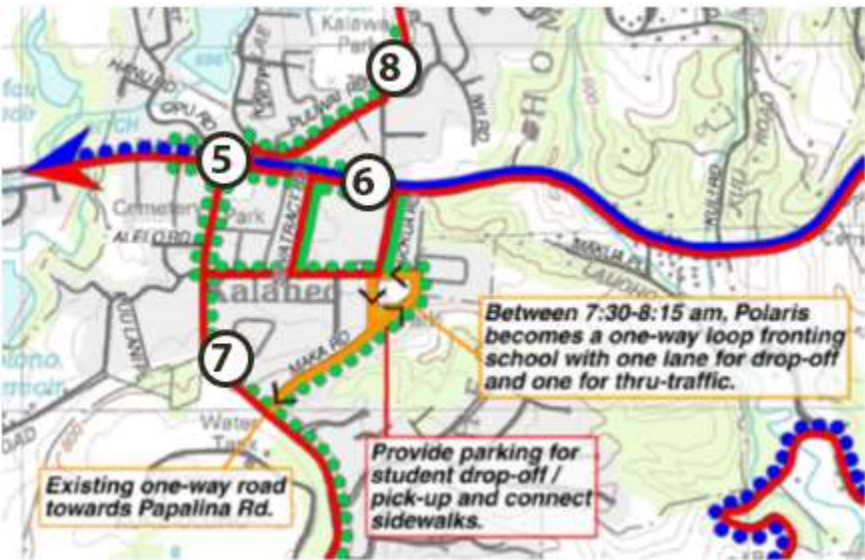
Figure 4-13: A la Kinoiki Alternatives (Kōloa Key Map 4)



4.3.4.2 Kalāheo

For Kalāheo, the proposed conceptual streetscape and street section designs strive to improve the pedestrian environment, particularly at the Papalina Road/Kaumuali'i Highway intersection, along the highway fronting the commercial establishments and Kalāheo Neighborhood Center, and on Pu'uwai Road leading to Kalawai Park. There are also different options for bicycle facilities.

Figure 4-14: Kalāheo Key Map



Papalina Road/Kaumuali'i Highway/Ōpū Road (5). A conceptual plan for the stretch of Kaumuali'i Highway between Ōpū and Pu'uwai Roads is shown in Figure 4-15. Several concepts were developed during the September 2013 design studio such as a roundabout, a double roundabout, and a peanut-a-bout. However, after Fehr & Peers reviewed the designs, the simplest design consisting of improved crosswalks and adjusted signal timing made the most sense in terms of cost and limiting impacts to surrounding properties.

The typical ROW width for the highway in this area is 60 feet. However, there is reverse-in angled parking in front of the Kalāheo Neighborhood Center which encroaches on the neighborhood center property. Street trees are provided in 4-foot tree wells on 8-foot sidewalks. If overhead utilities remain above ground, the location of the poles and trees should alternate to allow for clear ADA passage. Bike lanes are painted green for increased visibility and to visually narrow the travel lanes to slow traffic through Kalāheo Town (Figure 4-17).

Another potential modification to the proposed conceptual plan shown in Figure 4-15 includes moving the County bus stops on Papalina Road to Kaumuali'i Highway to reduce travel time lost on the Kekaha-Lihu'e mainline because of the turning movements off the highway. They would likely be located in front of the future Kaua'i Kookie Factory just west of Ōpū Road westbound and in front of the Kalāheo Neighborhood Center eastbound. Some of the on-street parking fronting the neighborhood center would be lost if a bus stop and pullout were located there. Initial discussions with the Kawakami family were also held regarding the potential relocation of the bus stop and possible pullout as they may encroach upon their property where the future Kaua'i Kookie Factory will be located.

Figure 4-15: Conceptual Streetscape Improvements for Kaumuali'i Highway and Papalina Road (Kalāheo Key Map 5)



Kaumuali'i Highway, Typical Section through Kalāheo (6). For more typical sections of the highway through Kalāheo Town fronting the commercial uses, the existing 60-foot ROW roadway can accommodate 6 foot sidewalks, 11-foot travel lanes, 6-foot bike lanes, and on-street parking on both sides of the highway (Figure 4-16 and Figure 4-18). Tree wells are located in bulbouts between parallel parking stalls so they do not encroach into the sidewalk and can be designed as landscaped bioswales to collect and filter rainwater runoff (Figure 4-19). Currently there are paved drainage swales on both sides of the ROW and few inlets which causes puddles and the pavement to degrade creating potholes and uneven surfaces.

The on-street parking and trees will provide a buffer for the establishments along the highway, creating a sheltered pedestrian space in front of the storefronts (Figure 4-19). East of Papalina Road, sidewalks should be continued all the way to Hokua Road on the makai side of the highway to provide a continuous pedestrian path to Kalāheo Elementary School, but can be terminated at Brick Oven Pizza on the mauka side of the highway. There is currently a safety barrier east of Kalāheo Café on the makai side of the highway and the sidewalk should be located on the makai side of it. On-street parking should be eliminated on both sides of the highway at Brick Oven Pizza on the mauka side and Kalāheo Café on the makai side.

Figure 4-16: Conceptual Streetscape Improvements for Kaumuali'i Highway Fronting Commercial Uses (Kalāheo Key Map 6) and Hokua Road



At the approach to Hokua Road from Lihū'e, there is a striped median that could be converted into a landscaped entry feature to signal to drivers that they are entering Kalāheo Town and to slow down and look for pedestrians. Accent plantings but no trees should be installed. It could also be designed as a bioswale but with curbs with cutouts to allow for rainwater inflow. Rumble strips could also be installed to signal to drivers to slow down (Figure 4-16).

West of Papalina, sidewalks are recommended to be extended to the crosswalk near Holy Cross Catholic Church on the multimodal map. Further west of that, there are a few homes and churches that may also benefit from a sidewalk connection to Kalāheo Town. However, there is some grade along the shoulders which could make this difficult and the lower density of uses may not warrant such an expense. Surveys of the users could be performed to determine the need or desire for sidewalks beyond Holy Cross. Bike lanes, however, could easily be striped on the shoulders of the highway, transitioning to bikes on shoulder lanes at some point further west.

Figure 4-17: Kaumuali'i Highway with Left Turn Lane and Bike Lanes (Kalāheo Key Map 5)



Figure 4-18: Typical Kaumuali'i Highway with Bike Lanes and On-Street Parking (Kalāheo Key Map 6)



Figure 4-19: Perspective of Kaumuali'i Highway with Bike Lanes and On-Street Parking (Kalāheo Key Map 6)



Papalina Road (7). The section of Papalina Road immediately south of the highway has a relatively wide ROW that allows for on-street parking and already has sidewalks on both sides. Minor improvements such as building bulbouts at the crosswalks and widening the sidewalk as needed for ADA compliance could be made. However, further south before it crosses Pu'u Road and just as it enters the residential areas, the sidewalks end and the ROW narrows to 30 feet. Members from the community including the principal at Kalāheo Elementary School suggested adding sidewalks further south on Papalina Road to provide safer pedestrian access to and from the residential neighborhoods. One potential solution is shown in Figure 4-20. The 30 foot ROW includes two 10 foot travel lanes, a 6-foot sidewalk on the eastern side of Papalina Road and a narrowed landscape bioswale on the western side.

Pu'uwai Road (8). Pu'uwai Road on the mauka side of the highway provides the only access to Kalawai Park, a popular place for sports activities and families. Currently, there are no sidewalks leading to the park from the main town core and road shoulders are narrow so most people drive to the park. A potential roadway section for the 30-foot ROW is provided in Figure 4-21. It includes a 5-foot sidewalk on the upslope side of the street with a 1 foot wide French drain and an 18-foot wide two-way travelway. The outside edges of the travelway should be painted with a wide 6-inch stripe. The downslope side of the roadway remains much as it is with a swale on the shoulder.

Figure 4-20: Papalina Road (Kalāheo Key Map 7)

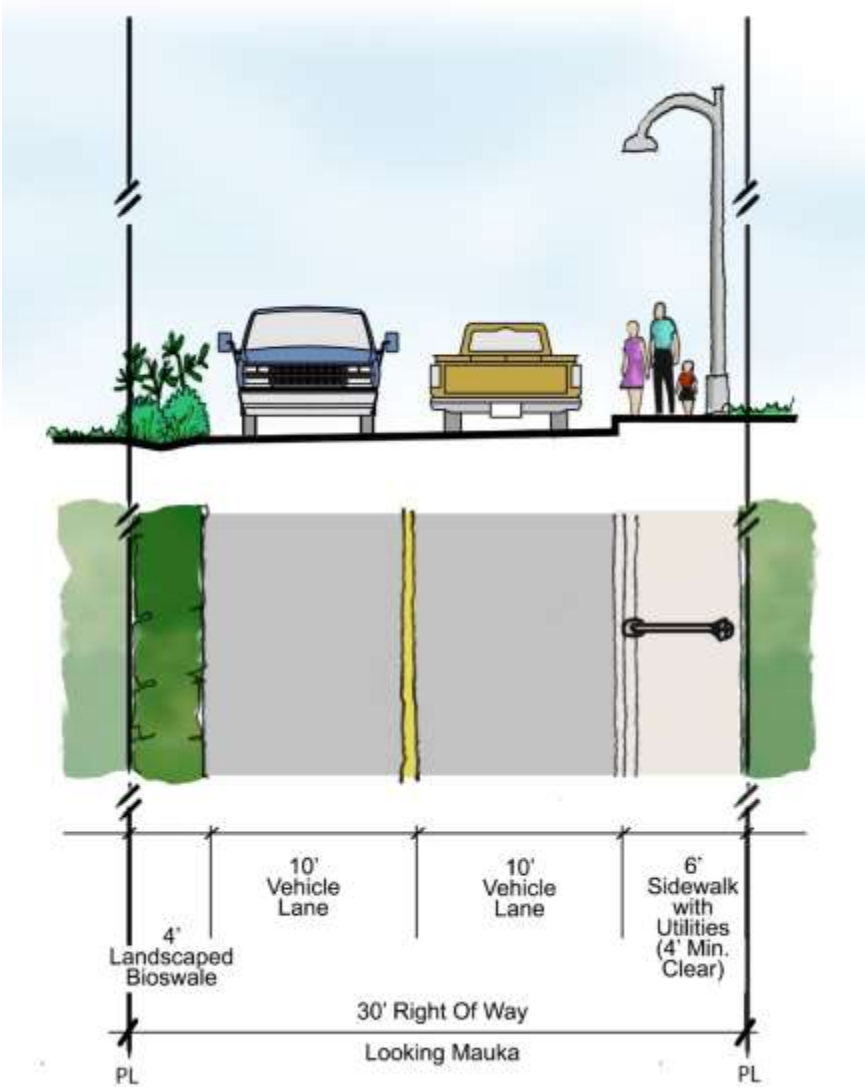
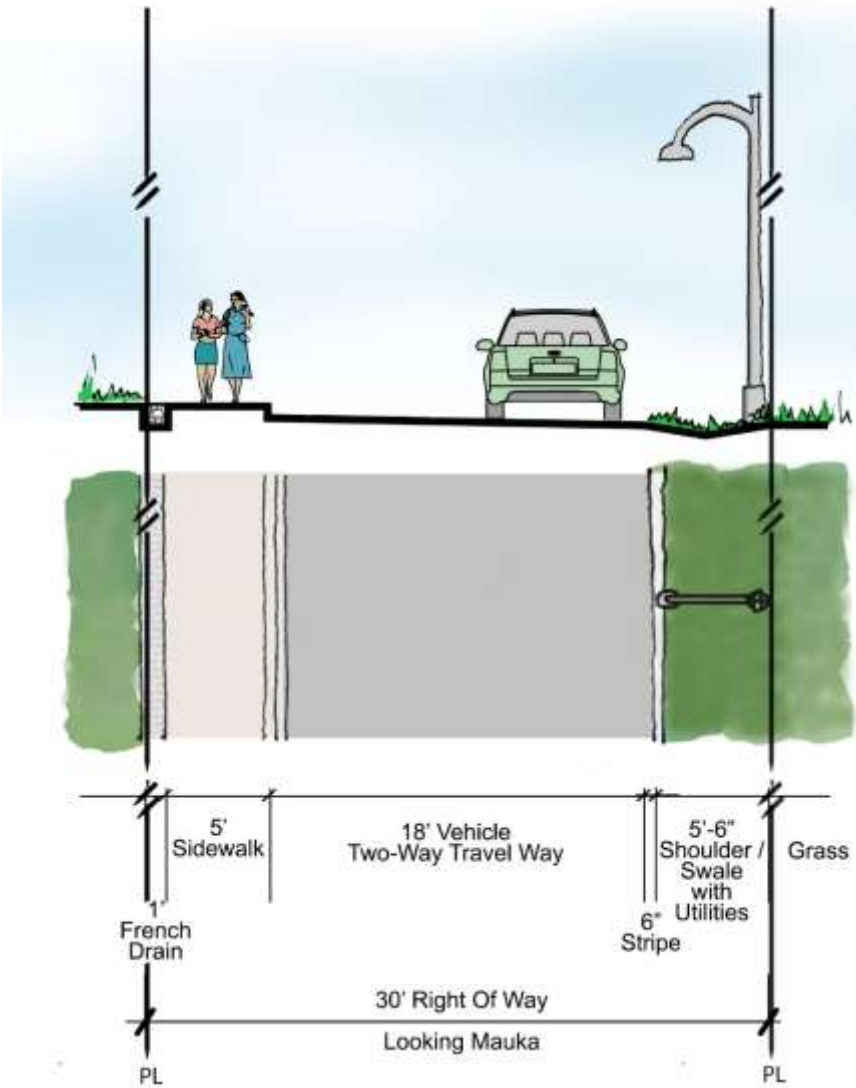


Figure 4-21: Pu'uwai Road (Kalāheo Key Map 8)



4.3.4.3 Po'ipū

Street sections were not drawn for Po'ipū Road as improvements to Po'ipū Road from Kōloa Road to the Grand Hyatt are already on the STIP and the designs will be based on those developed during the County's Po'ipū Road Charrette. Examples of the proposed street sections developed during the Po'ipū Road Charrette are shown in Figures 4 23 to 4 25 with an illustrative rendering provided in Figure 4-26.

The only additional design feature to consider adding are landscaped bioswales within the 120 foot-wide Po'ipū Road ROW that runs between the roundabout and the Grand Hyatt to help mitigate the surface runoff that currently floods the makai areas such as the Po'ipū Beach Park parking lot and Kāneioulouma. Private properties mauka remain responsible for mitigating the drainage flows from their individual properties but a preliminary drainage study should be done to determine whether some of the existing flows can be mitigated with bioswales along Po'ipū Road. The bioswales could be landscaped with native and appropriate Polynesian-introduced plants that support interpretive features planned for this major roadway.

Figure 4-22: Po'ipū Key Map



Figure 4-23: Po'ipū Road, Section located in Kōloa Town near Kōloa Road (Po'ipū Key Map P1)

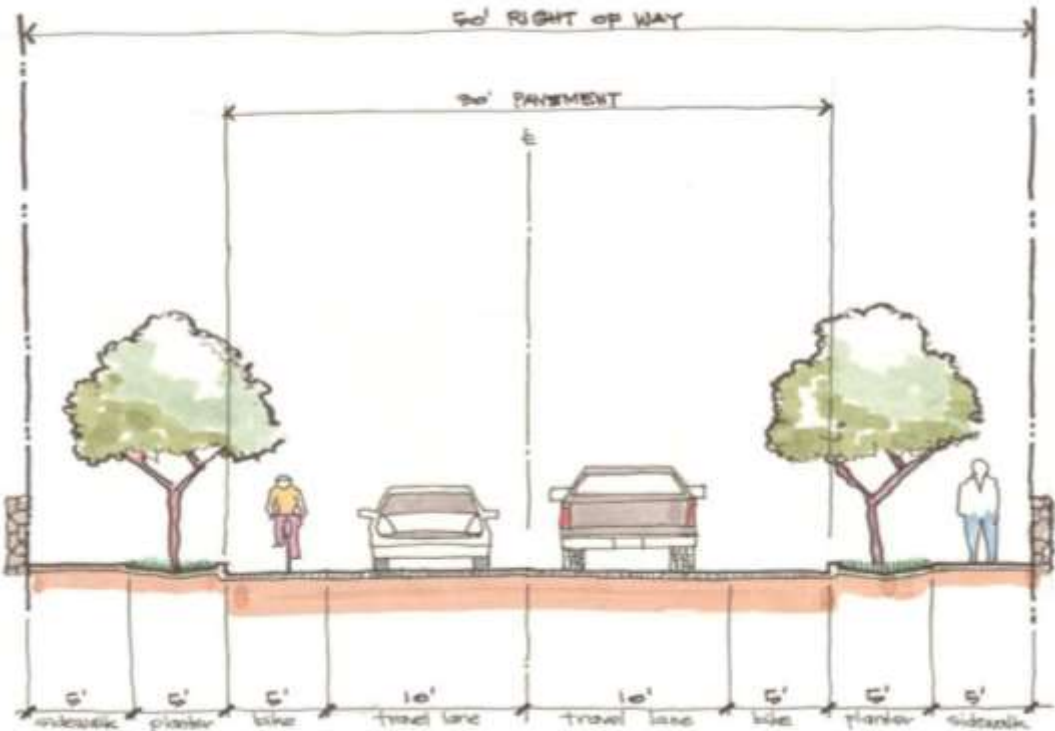


Figure 4-24: Po'ipū Road, Section located near Blakes Lane (Po'ipū Key Map P2)

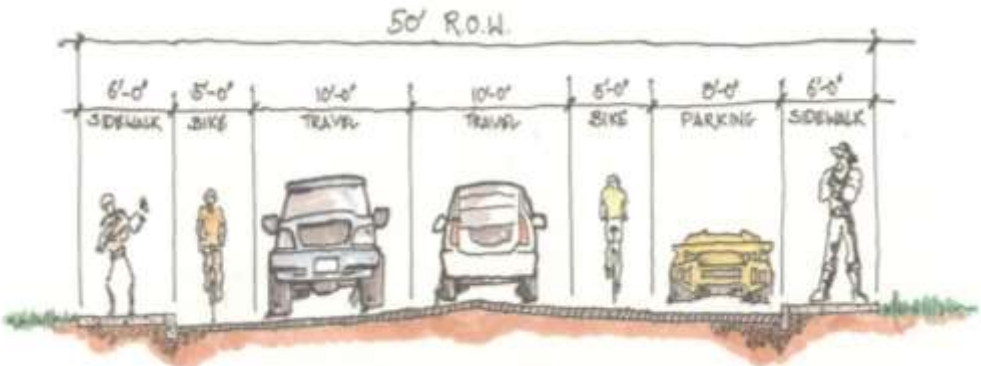


Figure 4-25: Po'ipū Road, Resort Section (Po'ipū Key Map P3)

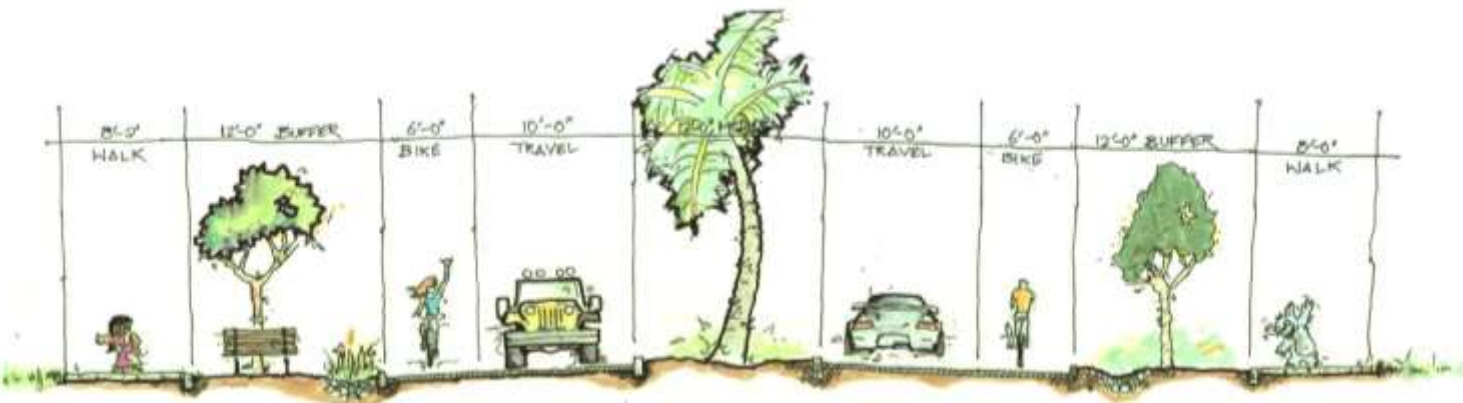
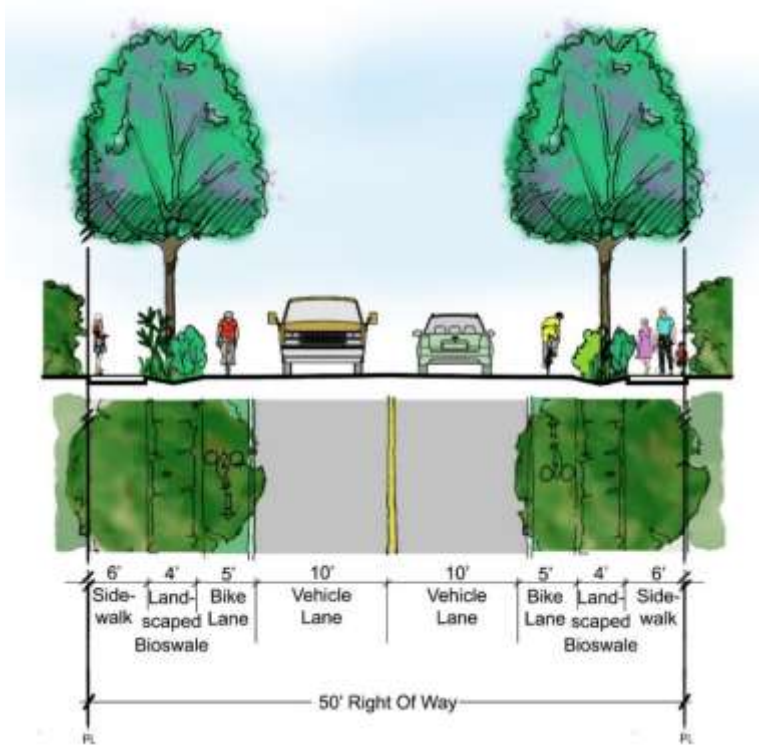


Figure 4-26: Po'ipū Road, Resort Section Rendering (Po'ipū Key Map P3)



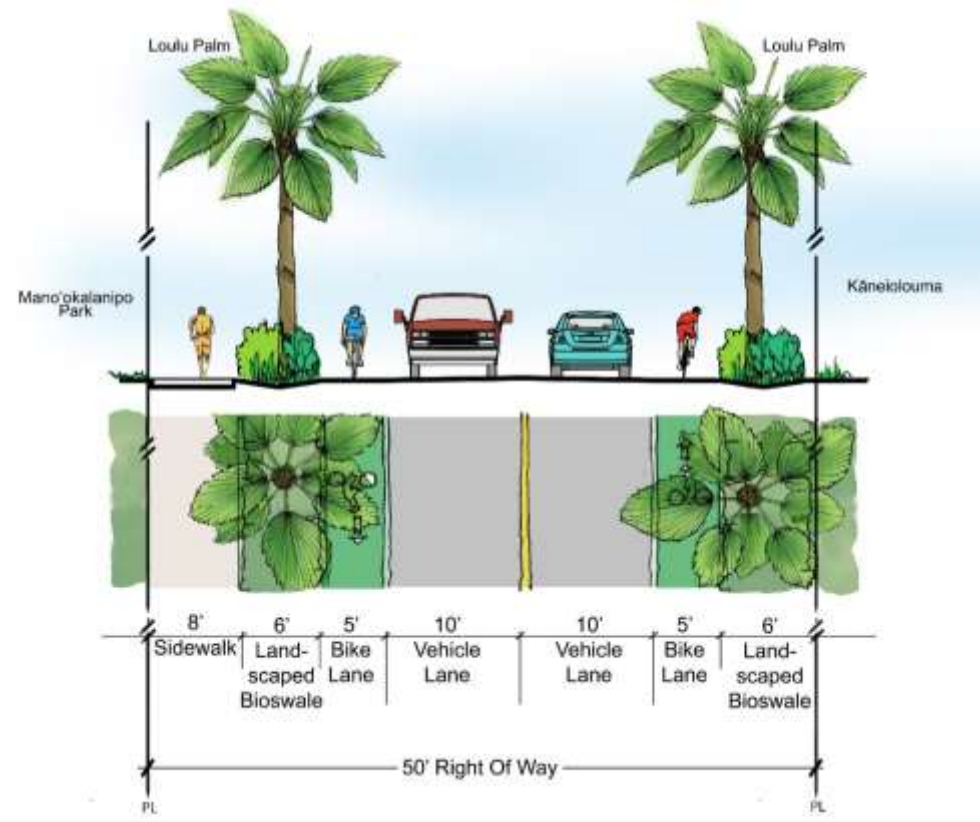
Kapili Road (9). Kapili Road is one of the mauka-makai connector roads between Po'ipū Road and Ho'onani Road which serves several large visitor properties such as the Sheraton Kaua'i Resort and the Po'ipū Kapili as well as Kōloa Landing which is under construction and the Sheraton expansion project. The existing ROW is 50 feet and there are existing 4 foot sidewalks on portions of the road. The conceptual section proposes to build upon the existing facilities, extending the sidewalks by 2 feet to 6 feet wide for the entire length on both sides and adding bike lanes and tree-lined bioswales (Figure 4-27).

Figure 4-27: Kapili Road (Po'ipū Key Map 9)



Ho'owili Road (10). Ho'owili Road runs between Mano'okalanipo Park and Kāneiolouma, two major cultural sites. It also provides the main access to Po'ipū Beach Park and the parking lot serving the park. The proposed section includes an 8 foot wide sidewalk on the side of the park, bike lanes, and landscaped bioswales (Figure 4-28). Currently the beach parking lot floods during heavy rainfall events, rendering much of the parking lot inaccessible. The bioswales as shown would run continuously down the length of Ho'owili Road, providing large landscaped areas to help with collecting, filtering, and infiltrating rainwater runoff. Loulu palms and native plants, particularly those native to Po'ipū, should be installed to highlight the cultural importance of the area.

Figure 4-28: Ho'owili Road (Po'ipū Key Map 10)



Ho'ohu Road (11). Ho'ohu Road is a narrow residential street that winds around the pu'u Pihakekua above Makahū'ena Point and connects Pe'e Road to Po'ipū Road. The street should be redesigned as a yield street to slow traffic, provide on-street parking, and allow for pedestrian and bicycle use. If road shoulders are provided, they should be striped with a wide 6-inch stripe to improve their visibility.

4.3.4.4 Lopaka Paipa Boulevard

Community concern has been raised regarding increased traffic speeds and reduced safety along Lopaka Paipa Boulevard once the connection between Ala Kalanikaumaka and Po'ipū Road is made. However, other community members have called for the much needed east-west connection to alleviate traffic along Po'ipū Road. To address these concerns, the multimodal plan recommends traffic calming measures and intersection improvements to help reduce traffic speeds such as tighter turning radii and crosswalks with safety improvements to make crossing safer. There was also discussion to investigate whether a second east-west connector road could be built further south in the area of the new regional park to further improve connectivity. The cane haul road alignment was considered. However, it runs through a federal critical

habitat so it was a poor candidate. Further studies for an additional east-west connector should be continued in conjunction with area roadway improvements.

4.3.5 Streetscape Design

Wherever pedestrian activity is emphasized and encouraged, elements that make the pedestrian environment safer and enliven the streetscape such as benches, signage, and other amenities should be provided. Bulbouts at crosswalks should be included to shorten the distance pedestrians must traverse across vehicle lanes. These can be incorporated into on-street parking layouts and designed as landscaped bioswales to collect and filter rainwater runoff, provide shade, and beautify the area. Native and Polynesian-introduced plants could be installed and interpreted to add an educational component.

Figure 4-29: Inviting Streetscape with Angled Parking and Bulbouts at the Corners



Figure 4-30: Landscaped Bulbouts with Bioswales and Street Furniture



4.3.5.1 Wayfinding

To highlight the rich history and culture of the Planning District, the design of wayfinding elements such as signage (address, directional, scenic byways/heritage trails), sidewalk paving, crosswalks, and public artwork should incorporate historical and cultural elements to celebrate and commemorate the heritage of this area. Interpretive plaques and signage should be installed on or at historic structures and places where they will not be intrusive but are accessible by the public. Other cultural signage may include moku and/or ahupua'a markers along roadways that indicate the boundaries of the traditional land districts. An educational piece may accompany these signs where appropriate.

4.3.6 Maintenance

Maintenance of the proposed streetscapes as well as the designs being built in the Lihu'e Town Core and the Ke Ala Hele Makalae will require the County to develop a plan for ongoing maintenance of these specialized environments. Options include a County-based urban forestry maintenance team that could reside within the Department of Parks and Recreation or training Division of Park Maintenance staff to care for the street trees, urban landscaping and bioswales. These services could also be contracted out with landscape contractors. Funding for ongoing maintenance could be paid through several mechanisms such as collecting parking fees for public parking, public-private partnerships with business and resort associations, or the creation of improvement districts or community facilities districts as described in Section 6.3.2.

In addition, many from the community voiced the need to properly maintain the existing road shoulders throughout the Planning District as they are used for bicycling and pedestrians. Overgrown vegetation and debris can cause hazardous conditions. There was also concern voiced over adjacent property owners who landscape or encroach upon the public

right-of-way especially when those encroachments block safe passage along the roadways. Enforcement to clear those encroachments is recommended.

4.3.7 Street Trees

The use of natives and the continuation of existing trees are recommended for a consistent streetscape and wayfinding.

Table 4-3: Recommended Street Trees

Roadway	Street Tree
Kōloa and Maluhia Roads within Kōloa Town SPA	Monkey Pod (<i>Samanea saman</i>), Royal Poinciana (<i>Delonix regia</i>), or Mānele (<i>Sapindus saponaria</i>)
Weliweli Road	Giant Crepe Myrtle (<i>Lagerstroemia speciosa</i>) or Māmane (<i>Sophora chrysophylla</i>)
Ala Kinoiki	True Kamani (<i>Calophyllum inophyllum</i>), Mānele (<i>Sapindus saponaria</i>), or other large native canopy tree
Po'ipū Road (between the roundabout and Grand Hyatt)	Monkey Pod (<i>Samanea saman</i>) or True Kou (<i>Cordia subcordata</i>)
Kaumuali'i Highway in Kalāheo	Lama (<i>Diospyros sandwicensis</i>) or Lonomea (<i>Sapindus oahuensis</i>)
Ho'owili Road	Loulu (<i>Pritchardia aylmer-robinsonii</i> , <i>P remota</i>)
Kapili Road	True Kou (<i>Cordia subcordata</i>) or Milo (<i>Thespesia populnea</i>)

4.4 KAUA'I NATIVE PLANTS & EXCEPTIONAL TREES

4.4.1 Kaua'i Native Plants

Native plants and particularly those native to South Kaua'i should be used in the planting areas of the public streets as shown in the conceptual street sections and integrated into interpretive and educational materials. Table 4-5 in the full report provides a list of Kaua'i native plants to consider for landscaping with in the Planning District.

4.4.2 Exceptional Trees

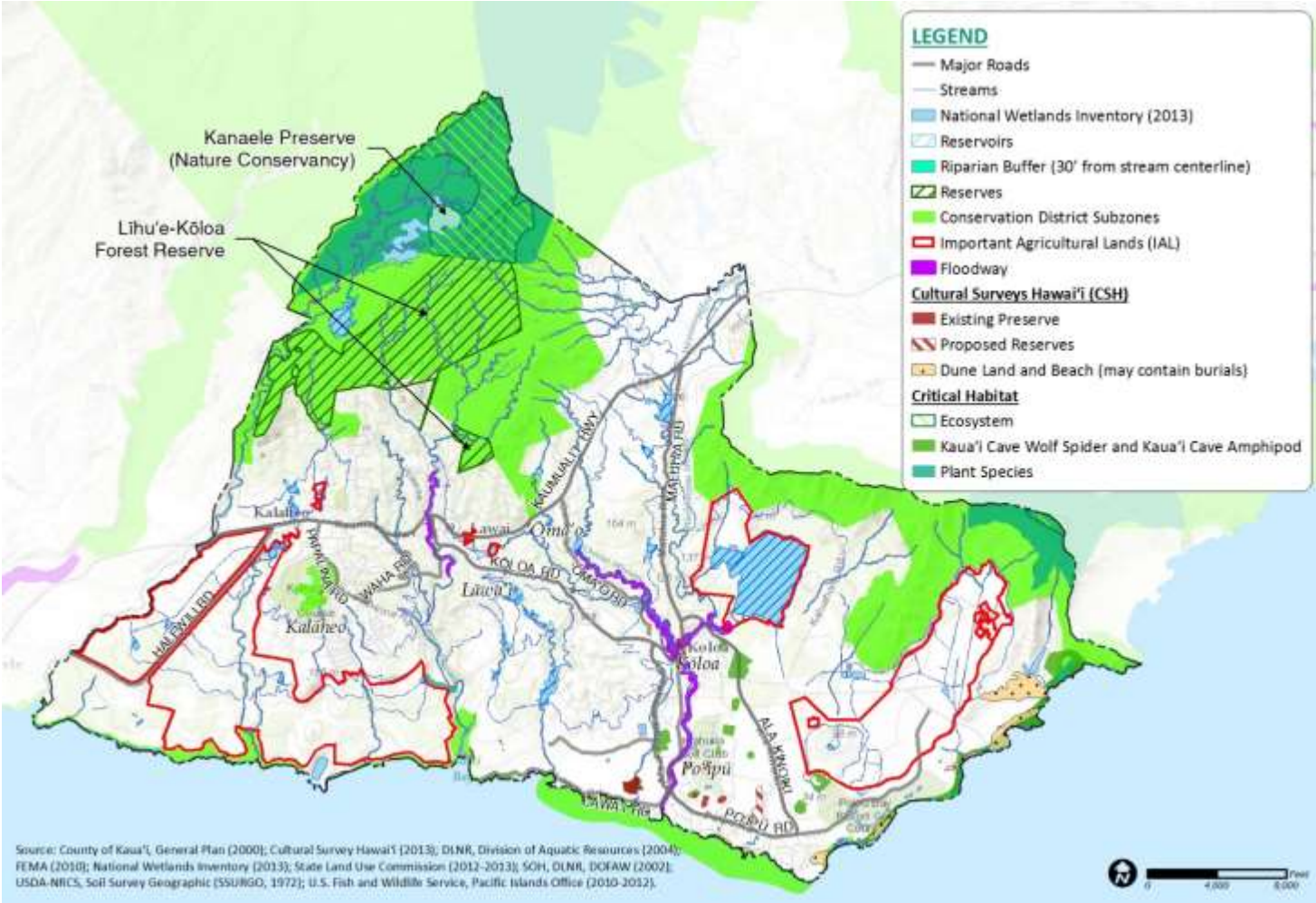
The Exceptional Trees listed in Table 3-1 are also shown on the Land Use Map in Figure 4-1 to emphasize the importance of protecting them in future land use and improvement projects including streetscape improvements. The monkey pod trees along Kōloa Road between Po'ipū and Waikomo Roads and Po'ipū Road between Kōloa and Waikomo Roads should also be protected and adopted as Exceptional Trees.

Recently, the County contracted with an arborist to perform a preliminary study on the health of the trees along the famed tree tunnel on Maluhia Road. He found that 85 of the approximately 650 total *eucalyptus robusta* (swamp mahogany) trees and stumps may need further care and that further assessment should be performed (Borgatti 2014). The Mayor has convened a Task Force to further investigate the issue of tree tunnel preservation.

4.5 NATURAL & CULTURAL HERITAGE RESOURCES

The Natural and Cultural Heritage section identifies policies to guide the management and protection of South Kaua'i's environmentally and culturally sensitive areas (Figure 4-31). The vast majority of the natural and cultural heritage resources in the region are located within the Natural, Agricultural, Water Bodies & Wetlands, and Park & Recreation land use designations on the South Kaua'i Community Plan Land Use Map.

Figure 4-31: Areas for Protection



Of the estimated 31,300 acres of land within the Planning Area, approximately 79.0 percent is in natural and open space uses, including 28.0 percent designated as Natural, 42.2 percent as Agriculture, 5.6 percent as Water Bodies & Wetlands, and 3.2 percent as Park & Recreation. Areas designated as Natural include lands with significant environmental resources, including watersheds; sites with scenic, historic, cultural, archaeological or ecological significance; and areas with natural ecosystems of endemic plants, fish and wildlife. They also include lands that may be impacted by natural hazards such as floodways.

4.5.1 Watershed Management

The wet upland watershed areas are the water source for year-round flowing perennial streams as well as the recharge area for groundwater drinking sources. The guiding principal involves managing the watershed mauka to makai in recognition of the ecosystem services and interrelatedness of nature. The policies and guidelines are organized into four areas of

watershed management: watershed planning and management, runoff and erosion prevention, habitat protection, and water quality and resource management.

4.5.1.1 Watershed Planning and Management

- a. Collaborate with State agencies (Office of Planning, DLNR, DOH, Soil and Water Conservation Districts), federal agencies (U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service), and local organizations (e.g., Kaua'i Watershed Alliance) in order to plan and manage watersheds.
- b. Prepare a watershed management plan.
- c. Expand watershed alliance by encouraging other landowners and organizations to participate. The presence of the Kaua'i Watershed Alliance is promising for more active collaborative management. Ideally, it would be willing to expand its membership and jurisdiction to cover more of the Planning District.
- d. Form or encourage a community nonprofit organization to prepare a watershed management plan. Kaua'i Watershed Alliance priorities rightfully focus island-wide and priorities do not include the Planning District. To focus on Planning District needs, form a community nonprofit or seek an existing relevant nonprofit organization to prepare a Watershed Plan to qualify for EPA Clean Water Act Section 319 Nonpoint Source Grant implementation funds.

4.5.1.2 Runoff and Erosion Prevention

- a. Manage land use and earth-moving activities from the standpoint of the entire watershed, considering important characteristics such as scenic landscape features, historic sites, native endangered or threatened species of plants and animals, and other special resources.
- b. Filter and manage stormwater and rainwater runoff prior to entering streams and the ocean during construction as well as ongoing maintenance. Integrate green infrastructure with landscaping.
- c. Establish ungulate and feral animal management along streams and drainageways. A significant proportion of the highly erodible soils in the Conservation District are along drainageways, implying a need for watershed management practices such as undergrowth maintenance with feral animal management and riparian buffers.
- d. Establish and implement soil conservation management practices for IAL. The Māhā'ulepū IAL has soils that are potentially highly erodible, implying a need for soil conservation practices that could be managed through NRCS conservation plans.

4.5.1.3 Habitat Protection

- a. Provide protection for critical habitats. There are critical habitats unprotected by a Conservation District or other means in the vicinity of Kōloa and Po'ipū. Establish critical habitat protection areas.
- b. Support funding applications for parcels with existing conservation priorities or subject to riparian buffer permit conditions (e.g., USDA Conservation Reserve Enhancement Program and other funding).

4.5.1.4 Water Quality and Resource Management

- a. Balance the restoration of stream flow, public safety, and water required for agricultural uses.
- b. Facilitate County approvals of dam decommissioning applications in watersheds where there is a watershed plan.
- c. Expedite review of dam decommissioning applications based on documentation requirements.
- d. Establish Total Maximum Daily Loads (TMDL) for impaired streams. The State Department of Health has designated all three perennial streams in the Planning District—Waikomo, Lāwa'i, and Wahiawa—as impaired streams that do not meet state water quality standards.

- e. Conduct marine water quality monitoring in context with the larger watershed area. Although the water quality of the popular beaches in Po'ipū is monitored by the Department of Health, the monitoring program is primarily for recreational public health, not for watershed or nearshore environmental quality.
- f. Test for cesspool contaminants during marine water quality monitoring. The disposition and effect of cesspool seepage on the groundwater and nearshore water quality is unknown.

4.5.2 Cultural Stewardship & Interpretation

Kaua'i is known for its beauty and the variety of its landscape. The native Hawaiian culture is intimately linked to physical places, many of which have special cultural significance. Within the Planning District, these features define the place, and the precious opportunity to preserve and restore what remains, and educate visitors and residents alike about the history and heritage of South Kaua'i, still exists.

The natural landscape (Mount Kahili, Hā'upu Ridge, Māhā'ulepū, coastal pali and dunes, gulches, and shoreline areas) and cultural landscape (Kōloa Field System, Kāneiolouma, Nōmilu Fishpond, Lāwa'i Kai, Kukuiolono, Hapa Trail, and old plantation landmarks) are intimately entwined and define the South Kaua'i communities (see Figure 3-1). Preservation of these resources is essential in maintaining the rich heritage of South Kaua'i.

4.5.2.1 Stewardship

- a. In conformance with the General Plan, development projects should be designed to preserve, protect and enhance heritage resources and South Kaua'i's unique "sense of place."
- b. Restore significant historic sites.
- c. As noted in the General Plan, "Preserve public views that exhibit a high degree of intactness or vividness. "Intactness" refers both to the integrity of visual patterns and the extent to which the landscape is free from structures or other visually encroaching features. "Vividness" relates to the memorability of a view, caused by contrasting landforms which create striking and distinctive patterns." An example is the silhouette of Mt. Hā'upu.
- d. Assist private owners to secure grant funding, tax incentives and other financial benefits for restoration, preservation and interpretation.
- e. Preserve Māhā'ulepū's significant natural and cultural features and protect the dune systems along the coastline where burials remain interred as well as the Makauwahi Cave and Waiopili Heiau. Involve the community in planning for the future of Māhā'ulepū. Planning should take into consideration various interests and factors, including but not limited to: the long-term need for managing Māhā'ulepū lands to preserve their significant natural and cultural features; the owner's desire to develop revenue-producing uses in a way that is sensitive to the area's unique qualities; the need to secure permanent public access to the shoreline; and the potential to create a coastal park (GP 2000).
- f. Continue to support the stewardship and restoration of Kāneiolouma.
- g. Restore or reuse the Kōloa Mill structures if economically feasible.
- h. Protect and restore the Nōmilu Fishpond and the salt pans surrounding it for food production and/or ecotourism at the discretion of the private owners. Besides being a unique fishpond, Nōmilu also was known to have the finest salt.
- i. Protect Kukuiolono's geological, cultural, and recreational asset. It is the largest cinder cone in the Planning District, was once used to set beacons for fishermen, was the site for the Kukuiolono Heiau (destroyed), and is now a park and golf course.

4.5.2.2 Interpretation and Education

- a. Develop an interpretive story for the Planning District using the Heritage Resources Map in Figure 3-1, highlighting the significant natural and cultural resources of the area and connecting these resources through a system of wayfinding techniques.
- b. Develop interpretive story of ahupua'a and historic resources. Wahiawa Valley seems to have been a rich settlement area that may have been less historically disturbed than other ahupua'a in the Planning District. It could offer examples of kula agricultural terraces, ocean uses, historic plantation infrastructure, and plantation camps. There is also a petroglyph site on the Hawai'i Register of Historic Places.
- c. Develop interpretive story of Kōloa Field System. The 1978 Kōloa-Po'ipū-Kalāheo Development Plan proposed leveraging Waikomo Stream for streamside enhancement through Kōloa Town. This revitalization could be further reinforced with interpretation of the Kōloa Field System, an excellent example of an elaborate pre-contact irrigation system fed by Waikomo Stream.
- d. Develop interpretive story of Māhā'ulepū. The Makauwahi Sinkhole, extensive taro lo'i, and first sugar mills in the State of Hawai'i by Ladd and Company provide significant findings of interest to scientists, historians, and ecotourists. The historic sugar mill is on the State and National Register of Historic Places.
- e. Develop interpretive story for sugar plantation era. The system of ditches and reservoirs, together with the Kōloa Sugar Mill, still remain that could provide the backbone to interpret the sugar plantation history in the Planning District. The location of plantation camps could also be commemorated.
- f. Create a network of South Kaua'i scenic byways building from those identified in the Holo Holo Kōloa Scenic Byways. Promote it as the South Kaua'i Heritage Corridor.
- g. Complement scenic vistas by providing facilities such as roadside pull-offs and stops so travelers have greater enjoyment, especially along Scenic Byways.

4.5.2.3 References

- a. Supplement the GP Heritage Resources Map for Kōloa-Po'ipū-Kalāheo with the SKCP Points of Interest Map.
- b. Work with The Nature Conservancy and the Office of Hawaiian Affairs to improve the "Hawaiian Footprint" predictive maps identifying areas that have potential archaeological resources or burials to prevent damage to archaeological sites. These maps are available in geographic information system (GIS) format.
- c. Verify the Hawaiian Footprint map includes Wahiawa Valley (near the stream), steep gulch areas in Kalāheo and Lāwa'i, Kōloa ahupua'a, areas with high concentrations of known surface archaeological features, and lava tubes with surface openings.
- d. Identify probable burial areas on the Hawaiian Footprint map. Probable areas could include the dunes fringing Keonelo Bay (particularly west side), Kāmala Point near Kawaiiloa Bay, the dunes fronting Hā'ula Bay, the slopes and shoreline of Wahiawa Stream, and the lava tubes and dunes of the region. Some sites (besides Keonelo Bay dunes and Māhā'ulepū dunes) that have documented burials include Kukui'ula and Kukuiolono.

4.5.3 Natural Hazards & Climate Change

Kaua'i is susceptible to a variety of natural hazards such as flooding, hurricanes, tsunamis, coastal erosion, landslides and rockfalls. While it is difficult to predict such occurrences, it is reasonable to assume that future incidents are likely, given historical events. To prepare for potential impacts due to natural hazards, potential evacuation routes and shelter locations are shown in Figure 4-32. However, a comprehensive emergency preparedness plan should be developed.



Figure 4-32: Emergency Evacuation Routes & Shelters



The effects of climate change and other human-made hazards can be minimized but may not be completely avoided. Sea level rise, beach loss, dam breaches, drought, and wildfires all pose a threat to human life and is therefore an important public health and safety issue that needs to be considered when developing policies for the location and pattern of future development in accordance with Hawai'i State Planning Act Priority Guidelines.

Policies and guidelines in this section provide guidance for further study and actions to help minimize loss of life and damage to property caused by natural or human-made hazards. Some overarching guiding principles outlined by the KC3HA study to help in moving forward include:

1. Use credible climate and hazard science to inform and guide decisions.
2. Minimize coastal hazard risks through planning and development standards.
3. Avoid or minimize coastal resource impacts when addressing risks to new or existing development.

4.5.3.1 Risk Assessment and Adaptation

- a. Develop a community-scale risk and vulnerability assessment for coastal hazards due to climate change and sea level rise (SLR) in South Kaua'i with particular focus on critical infrastructure facilities (roads, water, wastewater, power, and public facilities such as hospitals, fire, police, schools) and the vulnerability of beach resources and

resort facilities. Explore the full range of options to manage the impacts from climate change and SLR including accommodation, protection, retreat/restoration, prevention, and procedural solutions. Examples include:

- o Coastal hardening, which can lead to exacerbating erosion and beach loss
 - o Asset protection, such as building higher levees (which may still fail in extreme events)
 - o Shoreline/hazard retreat, which may involve loss of property use and value and high construction costs
 - o Beach nourishment, which may have high recurring costs if systems are not internally stabilized
- b. Develop an adaptation plan for areas with high SLR-related hazards, including coastal areas facing increased erosion and wave inundation. Alternative roadway alignments mauka should be explored for areas projected to be impacted by SLR and inland flooding.
 - c. Prepare a comprehensive drainage study for existing and projected runoff from changing weather patterns and SLR, and appropriate drainage facilities designed and constructed in conjunction with roadway and other infrastructure improvements.
 - d. The NOAA SLR flooding hazard layers show little flooding or coastal change at the shoreline. Historical shoreline change studies indicate a long-term trend of shoreline erosion for most of this area, which is sure to increase with increasing SLR. Detailed modeling and mapping of shoreline change and wave inundation hazards is needed to determine the severity hazards to coastal properties and beach resources, which is not shown in the NOAA data.
 - e. Develop a regional coastal and beach management plan (County, DLNR, UH Sea Grant) to conserve the beach resources critical to the local visitor industry and community, promoting alternatives to increased coastal armoring such as beach restoration.

4.5.3.2 Emergency Preparedness

- a. Prepare a comprehensive emergency preparedness plan for potential impacts due to natural hazards and climate change. Develop strategies to protect infrastructure and critical facilities. Include public education to increase risk awareness.
- b. Work with community groups to hold periodic evacuation training exercises.
- c. Develop a preparedness certification program for communities as a systematic guide.
- d. Require resorts to develop a self-sheltering plan for tsunami and hurricane events. There are approximately 7,300 visitors at any one time requiring shelter during a hurricane event within the Planning District. Resorts need to be ready to self-shelter visitors and to build and rebuild in accordance with flood-proofing standards while minimizing recurrent damage claims.

4.5.3.3 Design and Construction

- a. Update design standards and incentives to change building practices and encourage hazard mitigation.
- b. Design improvements within the VE Flood Zone to reduce and/or minimize the risk of damage and injury due to shoreline inundation. Avoid high-value development in VE and other high risk areas if possible.
- c. New shoreline protection/hardening structures such as seawalls and revetments should be prohibited. Discourage hardening on or of intact dunes. Implement offshore solutions that take advantage of natural processes to build back the beach such as groins, breakwaters, or artificial reefs.
- d. Mitigate hazards during infrastructure planning.
- e. Retrofit buildings to withstand various hazard conditions or adapt to accommodate SLR and natural hazards.
- f. Establish a local reserve fund for public mitigation measures, and incorporate hazard mitigation into all publically funded projects.

- g. Clarify with FEMA whether the updates to the VE zone will account for the latest tsunami run-up modeling, and sea level rise. Clarify with FEMA whether the resorts built in the VE zone trigger any policies relating to repetitive losses that would affect their claims or future ability to rebuild.
- h. Minimize wildfire risk by using fire-resistant building materials in new residential development, ensuring multiple ingress/egress from residential subdivisions, and creating and maintaining fuel breaks around all residential subdivisions.
- i. Develop post-disaster reconstruction guidelines and permit review processes to help prioritize projects and aid recovery. Maui County is partnering with Sea Grant to develop such guidelines and protocols for the conservation of coastal resources and protection of coastal communities. They are expected to be completed in early 2015.

4.5.3.4 Shelters and Evacuation

- a. Provide adequate emergency shelter capacity for residents and visitors. Verify if existing shelter capacity can accommodate the projected residential and visitor populations and whether any additional hardening of shelter structures is necessary. Continue to accommodate special needs and pets.
- b. Prioritize Kōloa and Kalāheo Schools for hazard mitigation funding to meet hurricane shelter standards.
- c. Designate emergency shelters to serve the west (Kukui‘ūla 20-ac park), central (Kōloa School and Knudsen Park), and east (Gateway project) to have adequate parking, restroom, and resting facilities.
- d. Coordinate resort self-sheltering plan for hurricanes that accounts for hurricane surge flooding.
- e. Identify specific evacuation routes and meeting locations.
- f. Identify emergency bypass routes during rockfall events, flooding, and other major roadway blockages.

4.5.3.5 Mitigation

- a. Continue to update as required the Kaua‘i Hazard Mitigation Plan and consider developing a specific plan for South Kaua‘i in line with the FEMA Whole Community Approach. Include consideration of community resiliency and compliance with federal rules to ensure that Kaua‘i and South Kaua‘i will be eligible for federal disaster recovery and mitigation funding including non-emergency disaster assistance for preparedness grants, hazard mitigation grants, pre-disaster mitigation grants, public assistance grants, fire management assistance grants, and flood mitigation assistance in order to protect life and property in the event of a natural disaster (<https://www.fema.gov/hazard-mitigation-planning-resources#3>).
- b. Develop sustainable budget for beach nourishment. Consider an alternative funding package for beach nourishment, including a combination of sustained funding sources such as CFD, TAT (Transient Accommodation Tax, and TIF (Tax Increment Financing).
- c. Develop one-time programmatic approval for beach nourishment with subsequent expedited checklist review (DLNR/ACOE/DOH/EPA).
- d. Identify and mitigate rockfall hazards especially along Kaumuali‘i Highway in the vicinity of Kalāheo and Lāwa‘i.
- e. Ensure periodic inspection and management of all reservoirs and dams to avoid breach.
- f. Maintain undeveloped areas to minimize risk and loss to wildfire.
- g. Promote and provide for beach re-nourishment for coastal areas suffering erosion.
- h. Utilize reservoirs and dams to extinguish wildfires. Nearly half of the county’s inventory of reservoirs (created by earthen dams) is located within the Planning District. Provided they are inspected and managed according to DLNR requirements, these reservoirs are potential assets for wildfire fighting water source, irrigation, and ecotourism fishing.

4.6 PARKS & RECREATION

There is a mix of public and private facilities shown in the Parks & Recreation land use designation in Figure 4-1. The Parks & Recreation section identifies policies to guide the management of South Kaua‘i’s varied park resources and recreational opportunities. They should be considered in conjunction with the recommendations from the County’s recently completed *Kaua‘i Parks and Recreation Master Plan* (2013). Recommendations from this plan are marked with an asterisk (*).



Kukui‘ūla Boat Harbor.

4.6.1 Park and Recreational Facilities

- a. *Prioritize resources at Po‘ipū Beach Park including expanding the beach park areas and ocean recreation opportunities, as this is the premier beach park for South Kaua‘i and a major economic driver for the Po‘ipū resort area. Restore and maintain tombolo and beaches. Conduct engineering study of drainage requirements for periodic flooding in parking lot.
- b. *Improve neighborhood parks including: pavilion and playground equipment at Waikomo Park; gateball field and shade trees at Weliweli Park; and pavilion, small comfort station, and park furniture at ‘Ele‘ele Nani Park.
- c. Expand the mix of recreational facilities to include:
 - Community gardens
 - Tot lot/playground
 - Skate park/motocross
 - Expanded farmers markets
 - Bike tracks
 - Outdoor amphitheater
 - Gymnasium
 - Swimming pool
 - Public bathrooms and drinking fountains at smaller neighborhood parks such as ‘Ōma‘o
 - Similarly, the top 10 preferences for new facilities for the Kōloa District from the park user survey summarized in the County DPR’s *Parks & Recreation Master Plan* (2013) are:

1. Walking and bicycling paths	6. Indoor gyms and fitness facilities
2. Picnic facilities and pavilions	7. Dog parks (off-leash)
3. Recreation beaches	8. Skate parks
4. Children’s playground	9. Passive (leisure) parks
5. Camping facilities	10. Tennis courts
- d. *Install playground equipment at Kalāheo Neighborhood Center.
- e. *Expand Kōloa Neighborhood Center by enclosing the space between the two existing structures.
- f. *Expand and improve the parking area at Spouting Horn Park.
- g. Support the National Tropical Botanical Garden in its efforts to preserve and manage the Lāwa‘i Kai Special Subzone primarily for resource protection and maintaining recreational uses at 2009 levels and the expansion of the McBryde Garden.
- h. Provide additional community meeting space, especially within the Po‘ipū Gateway Mixed-Use Village.

- i. For the future 20-acre Kōloa-Po'ipū District Park, include the community in the planning of the park. Include sports facilities and playgrounds to support the housing projects in the area. The design and layout of the park should facilitate an east-west pedestrian/bicycle/vehicle access between Po'ipū Road and Ala Kalanikaumaka.
- j. In concert with the landowner, community and potential partners, such as the National Park Service, public land trusts, and/or others, explore fair-market valuation tools for establishment of a park, conservation easement, and/or managed protected area along the Māhā'ulepū coastline.
- k. Work with landowners along coastal areas to maintain public access where sensitive natural and cultural resources are not threatened and where public safety can be protected.
- l. Develop new parks to meet the needs of both residents and visitors alike. Explore management of new parks by public-private partnerships.
- m. Explore options for potential conservation easements or future acquisition at fair market value via non-profit organizations such as the Hawaiian Islands Land Trust and Trust for Public Lands to preserve the coastal lands.

4.6.2 Maintenance

- a. Improve the maintenance and upkeep of park grounds and facilities.
- b. *Undertake appropriate repairs at Kalāheo Neighborhood Center including repairs to the center and gym roofs.
- c. *Continue to support the cultural caretaker group at Kāneiolouma.
- d. Fund beach replenishment as necessary at Po'ipū Beach Park.
- e. Schedule and budget regularly planned improvements to facilities.
- f. Promote an adopt-a-park or adopt-a-trail program. Involve local business and community groups.
- g. Seek grants and alternative funding sources for park improvements. Seek visitor-industry funding assistance for visitor-related trails, beaches, and facilities (e.g., HRS 198D TAT revenues).

4.6.3 Public Access

- a. Maintain public access to beaches and inland recreation areas.
- b. Create a regional network of public trails. Partner with private landowners for missing connections via managed access and coordinated time periods.
- c. Facilitate the possibility for the old alignment of Hapa Road to be converted for new usage as an off-road multi-use trail. In addition to promoting education about various stages of Hawaiian history, from pre-contact to plantation days, it would offer an appealing non-vehicular connection option for visitors between Po'ipū and Kōloa.
- d. Inventory hunting access to Forest Reserves and government trails.
- e. Apply for potential funding for trail acquisition, development, and maintenance through Nā Ala Hele and the Hawai'i Tourism Authority.
- f. Work with the landowner, community groups, and the Public Access, Open Space, Natural Resources Preservation Fund Commission to explore options for permanent public access to the Māhā'ulepū coastline.
- g. Work with the landowner to maintain interim public access to the Māhā'ulepū coastline as the priority.
- h. Manage access where necessary to preserve Māhā'ulepū's natural and cultural resources and to ensure public safety.
- i. Follow up on the recommendations from the Annual Report to the Kaua'i County Council and Mayor Carvalho from the Public Access, Open Space, Natural Resources Preservation Fund Commission.

4.7 AGRICULTURE

The Agriculture section identifies policies to guide the management of South Kaua'i's agricultural resources for economic development and for preservation.

Agriculture occurs at varying scales throughout the Planning District from the large tracts of commercial farms to small rural residential farm lots. For the most part, South Kaua'i's agricultural resources are located in the Agricultural and Homestead land use designations. During the public meetings, concerns were raised about large-scale agriculture and the need for additional regulation at the County level. While such operations are permitted under existing County Agricultural zoning, there are federal and state regulations in place to oversee the day-to-day operations of such businesses. The General Plan Update (commencing 2015) should examine agricultural policies, ordinances, and best practices to manage these concerns and should recommend an island-wide approach to mitigate these potential conflicts. The State Department of Agriculture currently regulates agricultural operations under the authority of HRS Title 11 and through HAR Title 4.

The community also raised concerns about further refining the types of agriculture compatible with the Māhā'ulepū area, particularly given the sensitive cultural and scenic resources surrounding those agriculturally zoned areas.

The County will also be revising the draft IAL report and the recommendations to the LUC.

4.7.1 Agricultural Lands as Open Space

- a. Preserve agricultural lands for agricultural use to maintain open space and rural character of the area.

4.7.2 Local Food Production

- a. Support local food production.
- b. Encourage a diversity of production.
- c. Support farm-to-table initiatives and education.
- d. Encourage organic and sustainable farm practices.

4.7.3 Economic Sustainability

- a. Provide access to technical support for agricultural startups, agricultural tourism, agricultural processing, co-op formation, agricultural financing, small business startup, renewable energy.
- b. Continue to investigate opportunities for farmers and local producers to share facilities (e.g., washing, distribution, packing, processing, storage, etc.) and to access a variety of markets. Support organic farming and processing. See also Section 4.9 Industrial.
- c. Encourage local restaurants, resorts, and eateries to use locally grown produce and other agricultural products and work towards self-sustaining food production within South Kaua'i. Market farm-to-table efforts.
- d. Facilitate access to Enterprise Zone incentives for eligible businesses (e.g., agricultural processing).
- e. Support agricultural tourism by streamlining agricultural tourism regulations. However, transient vacation rentals (TVRs) are not supported on agriculturally zoned lands outside of the VDA.

4.7.4 Important Agricultural Lands

- a. Follow through on the remaining five of eleven IAL incentive and protection programs identified in HRS 205-46(c) that fall on county-level policies:
 - (1) Grant assistance

- (2) Real property tax systems that support the needs of agriculture, including property tax assessments based on agricultural use valuation
 - (5) Agricultural business planning, marketing, and implementation grants
 - (7) Other programs and mechanisms that promote investment in agricultural businesses or agricultural land protection, such as the purchase of development rights
 - (11) Agricultural education and training for new farmers; upgrading the skills of existing farmers and other agriculture-related employees through the use of mentoring, business incubators, and public or private scholarships; and increasing the returns of farming by adding value to food processing and other tools and methods.
- b. In addition, follow through on the five major categories of recommendations and their proposed actions:
- (1) Develop County-level incentives program for IAL designation, specifically to encourage food production to increase self-reliance
 - (2) Establish a minimum goal for County-led designations
 - (3) Support landowner/farmer-initiated designations of agricultural lands that at least meet criterion #5 of Act 183 (SLH 2005), “land with sufficient quantities of water to support viable agricultural production.”
 - (4) Use IAL maps and tools when reviewing landowner/farmer-initiated petitions or for evaluating priority lands for designation by State or County
 - (5) Evaluate and integrate findings and recommendations of IAL Study into the upcoming General Plan Update for the County of Kaua’i
- c. Two other concepts introduced in the IAL Study include agricultural urbanism and agricultural clustering, both of which relate to focusing appropriate urban form and built structures in agricultural areas that appropriately support these farm communities. The IAL Study explains that agricultural urbanism “creates a walkable urban form surrounded by large-scale food production. This is different from ... ‘Urban Agriculture’ which cuts out various spots throughout an urban center (like empty parking lots) for community gardens and temporary farmers markets. [Andres] Duany explains that ‘in a rural setting, ag urbanism means clustering buildings together’ allowing farmers to be able to work large tracts of land and still pool resources and interact with other farmers and members of the community.” The IAL Study suggests that “IAL and Open zones could serve as the larger, contiguous agricultural (and natural) zones which buffers and connects [the rural agricultural] communities...”



Aerial view of Kaua'i Coffee fields.

4.8 SUSTAINABLE RESORTS & TOURISM

The Sustainable Resorts & Tourism section identifies policies to help focus economic growth in the visitor industry and develop a sustainable visitor destination in Po’ipū. Hotel and visitor accommodations are located in the Resort land use designation. However, tourism activities occur throughout the Planning District on various land designations.

The main goal is to develop the Po’ipū Resort area as a sustainable visitor destination—one that provides eco-friendly and educational experiences, products and services, leverages and supports local businesses and agriculture, relies less on cars, and embodies the rich historic and cultural foundation upon which these communities were built.

4.8.1 Sustainable Resorts

- a. Establish Po’ipū as a world-class and world-leading sustainable visitor destination. Work together through PBRA to distinguish and market Po’ipū as a sustainable resort destination.
- b. Enhance visitor experiences with eco-friendly products and services that also benefit the host communities and environment such as car and bike share programs, increased recycling and solid waste reduction, increased water and energy efficiency improvements, and eco-friendly soaps, cleaning products, and detergents.
- c. Reduce the need for personal vehicles and parking lots by improving pedestrian and bicycle access and transit service.
- d. Maintain parking at absolute minimum to encourage alternative modes of transportation to/from and within the Planning District.
- e. Use renewable energy to power resorts.
- f. Encourage use of electric vehicles recharged by renewable energy.
- g. Support local food production by sourcing locally.
- h. Include bus pass as part of resort fee.
- i. Provide shuttles to/from airport.
- j. Provide car rentals/car share programs at hotels.
- k. Reestablish a minimum pedestrian and bicycle path from Po’ipū Beach Road to Ho’one Road to improve community connectivity.
- l. Review demand for new visitor units compared with permitted units constructed every five years.



Kukui'ula Farmers Market.

4.8.2 Eco-Friendly Experiences

- a. Provide a rich visitor experience which incorporates education and proper etiquette and protocol to help protect the island’s natural and cultural heritage resources.
- b. Promote sustainable tourism activities such as ecotourism, cultural tourism (Kāneiolouma), natural science tourism (Makauwahi Cave and Sinkhole), voluntourism (volunteer tourism), ag-tourism (agriculture-based tourism), health and wellness tourism, and other appropriate tourism-related businesses.

- c. Minimize impacts from visitor activities and accommodations on residential communities, public infrastructure, and community facilities.
- d. Increase farm-to-table dining experiences and farmers markets.
- e. Promote health and wellness retreats.
- f. Maximize residents' benefits from the visitor industry by providing kama'āina discounts year round.
- g. For visitors to Po'ipū, a new Hapa Road trail could offer an appealing option to travel to Kōloa Town without a vehicle. It would also offer the opportunity to experience some of Kaua'i's pre-contact and plantation history.
- h. With such unique natural assets as Kāneiolouma, the National Tropical Botanical Garden and Spouting Horn Park, Kuku'i'ula is an ideal area to promote ecotourism. A bicycle route between important sites could further encourage visitors interested in sustainable tourism.
- i. The numerous reservoirs in the Planning District are sources for irrigation and may have potential for ecotourism fishing/boating.
- j. Maintain managed access to Māhā'ulepū but consider providing a comfort station and visitor education resources on the rich natural and cultural heritage of the area.

4.9 INDUSTRIAL

As noted in the 2000 General Plan “Develop vacant lands with existing commercial and industrial zoning, to the extent feasible, before approving new commercial and industrial zoning.” However, there is currently no industrially-zoned lands within the Planning District to support its vast agricultural lands. Historically, however, this was the birthplace of industrially-scaled sugar production at the first sugar mill in Kōloa. Therefore, the following policies and guidelines support reestablishing industrial uses centered on the historic Kōloa mill site.

- a. Designate industrial land use to support rezoning around the Kōloa mill site. Support industrial designation for energy, wastewater processing and reuse, agricultural processing, and other job-creation uses.
- b. Support private development of a regional wastewater treatment plant for the Planning District at the industrial center near the mill site. Preliminary engineering and planning studies including a HRS Chapter 343 Environmental Impact Statement (EIS) in 2009 have been completed for the regional plant and it involved closing the smaller package plants throughout the area and consolidating wastewater treatment. It should also consider servicing areas not currently served by centralized treatment.
- c. Consider innovative wastewater treatment technologies and effluent reuse. Incorporate educational facilities and small commercial uses to create a themed educational and ecotourism experience.
- d. Anticipate and coordinate workforce opportunities in renewable energy technology and mechanics, ecotourism, health and wellness, green streets, and Low Impact Development (LID) landscape maintenance.



Kōloa Mill Site.

- e. Locate industries and utilities that discharge air or water pollutants, even when treated, in areas where they would impose the least potential harm to the environment and residential communities.
- f. Adaptive reuse of the Kōloa Mill is encouraged if economically feasible and no health issues arise from hazardous materials that may exist in the historic structures.

4.10 INFRASTRUCTURE & PUBLIC FACILITIES

The Infrastructure & Public Facilities section identifies policies that guide the management of existing infrastructure and the development of new facilities. Capital improvement projects (CIP) should be prioritized to meet basic needs, provide ongoing maintenance and upgrades as necessary to maintain public infrastructure and to avoid or minimize interruption in service, and support the vision for South Kaua'i.

The County has also contracted with R.M. Towill Corporation to prepare an infrastructure assessment as one of the technical studies supporting the General Plan update. It will include transportation, water, wastewater, drainage, and solid waste needs based on the 2035 projections and will focus on high-growth districts such as the South Kaua'i Planning District. It will also provide low-impact, non-traditional strategies such as natural storm water drainage.

As referenced in Section 4.1.5, a comprehensive water planning strategy for the entire Planning District is supported, and should include, but not be limited to, consideration of water access, infrastructure, quality, and drainage, and the attendant oversight and maintenance. Water source regulation currently falls under HRS Chapter 174C, and is facilitated through CWRM. Storage and transmission of water for the County domestic water system falls under the jurisdiction of DOW by County Charter, and DOW is responsible for water planning related to the domestic system.



Water reservoir off Kōloa Road.

4.10.1 Potable Water Systems

- a. Update the County DOW's long-range Water Plan for the Kalāheo, Lāwa'i-Ōma'o, and Kōloa-Po'ipū County Water Systems to determine adequacy of existing source, storage, and transmission to support 2035 growth projections, especially within the SPAs.
- b. Plan upgrades and improvement projects accordingly to avoid and/or minimize interruptions in existing service.
- c. Coordinate with developers of new projects to provide adequate service.
- d. Protect potable water wells and other drinking water

4.10.2 Non-Potable Water Systems

- a. Integrate and encourage non-potable water sources for appropriate uses within the Planning District.
- b. Develop standards for design of systems and policies for applications in concert with State Department of Health (DOH) regulations.

4.10.3 Wastewater

- a. Assist and support regional wastewater solutions including the potential centralized treatment plant.

- b. Support innovative treatment systems that produce effluent at appropriate water quality levels to encourage reuse such as irrigation, industrial uses, and other non-potable uses.
- c. Coordinate with commercial establishments and multi-family complexes in Kōloa and Kalāheo to comply with EPA ban of large-capacity cesspools.
- d. The future industrial area should be served by an innovative wastewater treatment system or the regional plant.
- e. Monitor the disposition and potential effect of cesspool seepage and injection wells on the groundwater and nearshore water quality.

4.10.4 Drainage

- a. Prepare a drainage study for the Po'ipū Beach/Kāneiolouma area and propose alternative to mitigate flooding.
- b. Install bioswales and rain gardens along streets, in parks, and in parking lots to collect and filter rainwater runoff and increase infiltration via landscaped areas that also beautify the place.
- c. Continue to require new development to mitigate site-generated flows.
- d. Require installation of catchment systems for non-potable water use onsite such as irrigation and toilet flushing.
- e. Support a comprehensive water planning strategy for the entire Planning District, which should include, but not be limited to, consideration of water access, infrastructure, quality, and drainage, and the attendant oversight and maintenance. Water source regulation currently falls under HRS Chapter 174C, and is facilitated through CWRM. Storage and transmission of water for the County domestic water system falls under the jurisdiction of DOW by County Charter, and DOW is responsible for water planning related to the domestic system.

4.10.5 Solid Waste

- a. Establish a recycling program to minimize solid wastes generated by residents, businesses, and the visitor industry.
- b. Require the construction industry to minimize construction wastes and encourage use of reclaimed and recycled materials.
- c. Consider coordinating green waste processing and distribution of mulch within the Planning District to reduce transportation costs. Coordinate with resort and agricultural users.
- d. Support composting of food wastes for reuse as soil amendments.
- e. Support a clearinghouse of collecting leftover food from area restaurants and resorts to feed the hungry.
- f. Continue to seek appropriate recycling of electronic waste for Kaua'i.

4.10.6 Power

- a. Continue to support renewable energy generation.
- b. Encourage increased energy efficiency for residents and businesses. Develop a rebate program for those who upgrade or install highly energy efficient equipment and appliances.
- c. Encourage installation of solar hot water heating systems.

4.10.7 Innovative Technologies with Multiple Benefits

- a. Encourage innovative solutions that combine multiple benefits. Examples include:
 - Electric car charging stations for car-share system powered by photovoltaic shade structures. Similarly, the transit system could use electric shuttle buses for the area circulators that are charged by photovoltaic energy.
 - An anaerobic digester system that uses green waste, including invasive plant species, to produce energy that could in turn power a wastewater treatment system, supplemented as necessary with photovoltaics.

4.11 ECONOMIC DEVELOPMENT

The resort area of Po'ipū-Kukui'ula is a major employment center capitalizing on its competitive advantage for tourism including sandy beaches, sunny climate, and diverse ocean conditions. The Planning District also has other potential resources such as Important Agricultural Lands to diversify the economic base. Recognizing that the strength of the Planning District's economy relies on the private sector, the role of this Plan in terms of economic development is to be a catalyst to facilitate ongoing trends, coordinate and encourage diversification, and strategically stimulate through infrastructure or other projects that benefit the community as a whole.

4.11.1 Town Core Revitalization

- a. Encourage town core revitalization of Kōloa and Kalāheo.
 - Streamline regulations through form-based codes to facilitate higher density mixed uses within the town core.
 - Guide redevelopment in a manner that maintains the historic character.
- b. Consider innovative financial methods (e.g., business improvement districts, community facilities districts) to implement street and wastewater system projects.
- c. Provide affordable housing for existing employees and to attract new businesses (see Section 4.2.3).
- d. Support more affordable market housing by ensuring infill development provides a range of low-to-medium scale housing types, including smaller-footprint single-family units, cottage courts, duplexes, mansion apartments, townhomes, apartment houses, and courtyard buildings.
- e. Maintain a healthy commercial balance to support locals and visitors alike.

4.11.2 Diversification

- a. Support, facilitate, and incentivize economic diversification focusing on town core revitalization, diversified agriculture, and sustainable tourism.
- b. Facilitate and support agricultural networking and economies of scale that would enable sharing of washing, processing, distribution, and/or storage facilities so that farmers with smaller operations can have the collective advantage of larger operations, such as a cooperative.
- c. Rezone to industrial an area in proximity to the farmlands that would allow other light industry, including alternative energy, to co-locate.
- d. Network with U.S. Department of Agriculture to access funding and technical support for cooperatives, agricultural facilities, and infrastructure.
- e. Enable agricultural tourism as a means for farmers to supplement their income and educational opportunity for residents and visitors to learn about local food production.
- f. Coordinate compatibility and marketing of agricultural tourism as a key component of the sustainable tourism theme for this resort area.
 - Encourage diverse marketing opportunities by coordinating food safety protocols, farm-to-table partnerships with resort restaurants, farmers markets;
- g. Assist with nonpoint source monitoring and compliance through NRCS conservation plans and regionally-supported water quality monitoring.
- h. Distinguish the Planning District as a place known for sustainable tourism (see Section 4.8).

- i. Promote and expand the Heritage Corridor system, as described in Section 4.5.2, as an economic catalyst for the visitor and health/wellness industries.
- j. Encourage business development in industries that would be desirable to attract to the Planning District (e.g., agriculture, green technologies, health and wellness, green infrastructure maintenance) through promotion of the Planning District as an enterprise zone (with associated tax and other incentives) and workforce development programs.

4.11.3 Regional Infrastructure Needs

- a. Support and coordinate the needed development of regional multimodal transportation networks, wastewater and drainage infrastructure, and other infrastructure needs.
- b. Support a comprehensive water planning strategy for the entire Planning District, which should include, but not be limited to, consideration of water access, infrastructure, quality, and drainage, and the attendant oversight and maintenance. Water source regulation currently falls under HRS Chapter 174C, and is facilitated through CWRM. Storage and transmission of water for the County domestic water system falls under the jurisdiction of DOW by County Charter, and DOW is responsible for water planning related to the domestic system.
- c. Promote and expand the Heritage Scenic Byway network system as a fun, healthy, and educational means to access the Planning District's rich collection of natural and cultural points of interests:
 - Expand the Holo Holo Kōloa Scenic Byway to include vehicular and non-vehicular (trails) rights-of-way, owned publicly or privately (with easements granted for public use), interconnecting points of interest throughout the Planning District;
 - Consider forming a nonprofit organization to manage the network system, apply for grants, charge user and/or commercial tour fees, and dedicate the revenues to the promotion, improvement, and maintenance of the network system;
 - Support the growth of a health and wellness industry attracted by the trail system and climate (e.g., equipment suppliers and rentals, health trainers, therapists, senior housing, rehabilitation);
 - Respect the culture by providing education and culturally-appropriate interpretation of the area that ties together the trail alignment, points of interest, and the history; monitor impacts.
- d. Coordinate the wastewater and drainage regional infrastructure to enable future growth in a manner that minimizes impacts to the streams, groundwater, and coastal water quality:
 - Allow the private sector to take the lead to the extent they are willing and able;
 - Support as necessary with advance funding for regional studies and/or establishment of innovative financing (see Section 6.3).

4.11.4 Jobs and Housing

- a. Anticipate and coordinate workforce training and housing needs to ensure a competent workforce ready to access livable wage opportunities while also able to afford housing in reasonable proximity to jobs.
- b. Ensure the workforce has access to a range of housing types, reflective of changing demographics and to help alleviate housing crowding conditions.

5 FORM-BASED CODE FRAMEWORK

5.1 PURPOSE AND INTENT

Past zoning and subdivision regulations have promoted drivable suburban habitats and development patterns that over time have compromised Kaua‘i’s unique character. The Form-Based Code (FBC) instead provides a regulatory framework that preserves, enhances, and creates “walkable urbanism”—the concept that places of human habitat on Kaua‘i should be of a scale that is primarily pedestrian-oriented in nature—while continuing to preserve Kaua‘i’s natural resources and rural character, improve the quality of life of its residents and visitors, protect sensitive environmental habitats, and encourage economic growth. The code will:

- Promote, preserve, and enhance community design that reflects the distinct character of Kaua‘i and supports a range of vibrant human habitats;
- Promote development patterns that support safe, walkable, pedestrian-oriented mixed-use places;
- Promote development patterns that support safe, effective, and multimodal transportation options, including auto, pedestrian, and bicycle, minimizing vehicle traffic by providing a mix of land uses, walkability, and compact community form;
- Promote the health benefits of pedestrian-oriented places, including safe routes for walking, bicycling, and other exercise;
- Preserve, protect, and enhance the character of established communities;
- Support existing walkable neighborhoods through networks of well-designed streets that are safe and secure for pedestrians and bicycles;
- Encourage appropriately-scaled infill and development that places services within safe, comfortable walking distance of homes;
- Encourage and incubate local business activity through community design;
- Promote neighborhoods with quality housing that encourage a diversity of housing choices;
- Ensure that each building plays a role in creating a better whole, not just a good building;
- Ensure buildings and environments that can adapt to changing economics and demographics;
- Encourage architecture that grows from local climate, history, and building practice; and
- Preserve and protect historic and cultural resources.

5.2 PLACETYPES

Unfortunately, not much of the prehistoric settlement patterns of native Hawaiians survived the plantation era. Certain roads such as Hapa Trail and pockets of sites such as Kāneioulouma survived where sugarcane was not planted or towns did not develop. Instead, South Kaua‘i’s current settlement patterns relate more to the plantation towns which were centered around sugar cane mills and plantation camps. These places were built to a pedestrian-oriented scale that made it possible to get around on foot. The sugar cane fields that surrounded these places provided a de-facto greenbelt that differentiated places of more intense human habitation from agricultural and natural areas (Kaua‘i Smart Growth, 2012). This relationship between built areas and natural or agricultural lands helped to reinforce Kaua‘i’s primarily-rural identity.

As development has become more auto-oriented and less walkable over the past several decades the distinction between these places has been eroded. Much of the growth that has taken place on Kaua‘i is spread out and requires a car to get from place to place. This auto-oriented style of growth consumes rural and agricultural land without contributing to any meaningful sense of place on the island.

In order to distinguish between places built as auto-oriented, drivable places and those built as walkable places eight distinct place types have been identified on Kaua'i. These place types help to determine where certain types and intensities of development are appropriate. Four are considered *drivable place types* and the other four are *walkable place types*.

5.2.1 Drivable Place Types

Drivable place types are those in which a person is mostly dependent on the automobile to travel to work, or other destinations, and to accomplish most shopping and recreation needs. These environments may have areas where it is sometimes possible to walk or ride a bike for recreational purposes, but due to the lack of nearby amenities and street connectivity, are not favorable for walking or biking as a primary mode of transportation on a day-to-day basis.

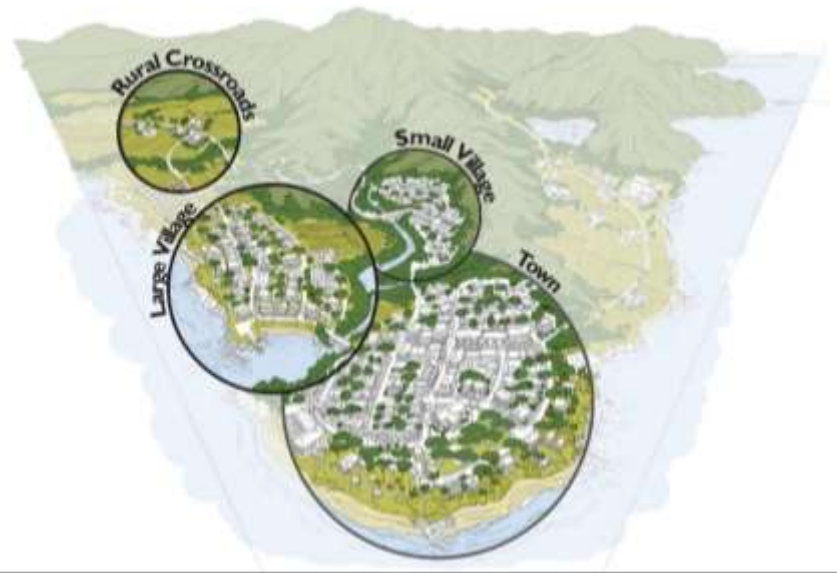
The design and layout of development in these areas is driven by the need to accommodate the automobile. Land uses are segregated and often buffered, leaving large distances between which further require the automobile for day-to-day functions. Drivable place types on Kaua'i include Residential Community, Regional Commercial Center, Port/Airport/Light Industrial, and Resort.

- **Residential Community:** Areas that are primarily single-family and are not within walking distance of retail or civic services. Street networks may lack pedestrian facilities and are generally not well connected, sometimes dead-ending in cul-de-sacs. Buildings in a residential community are generally set far back from the street.
- **Regional Commercial Center:** Areas that are primarily single-use retail or commercial, such as shopping malls or office parks. Buildings in a regional commercial center are generally separated from the street and sidewalk, if one exists, by large expanses of surface parking. While it is possible to move around within this place type on foot, it is most common to arrive by car.
- **Port/Airport/Light Industrial:** Areas that are primarily single-use and have special requirements, such as a large amount of truck traffic or movement of goods. These places often include large-footprint buildings or large areas such as runways, storage lots or staging areas that are not open to the public.
- **Resort:** Areas that are set up as visitor accommodations and which are generally self-contained and oriented inwards towards a private central space or outwards towards the ocean. Resorts accommodate car use with large parking facilities and minimal pedestrian connections to surrounding places.

5.2.2 Walkable Place Types

Walkable place types are those in which a person can walk, bike or ride transit to work and to fulfill most shopping and recreation needs. These environments allow for the use of automobiles but do not require the use of a vehicle to accommodate most daily needs.

Walkable areas are built with a pattern where a person could live with limited reliance on the automobile, conducive to destination walking and cycling, and with access to transit. 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. These areas also support public transit due to their compact nature.

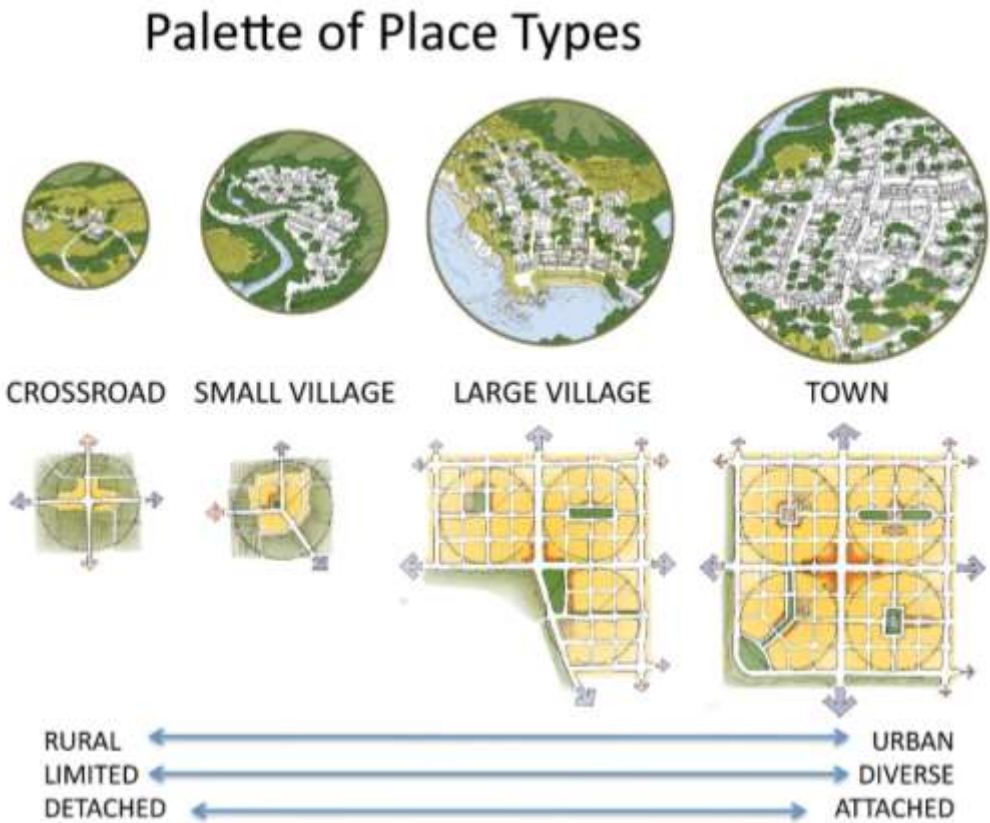
Four distinct walkable place types, based on traditional settlement patterns and existing places on Kaua'i, provide a framework to establish a more intentional relationship between open spaces and developed areas on the island. These places correspond to traditional settlement patterns on Kaua'i, as well as existing places on the island. Walkable place types include Rural Crossroads, Small Village, Large Village and Town.

- **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. Historic examples of rural crossroads include Kapaia.
- **Small 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 transitions quickly into agricultural uses and/or into the natural environment. Historic examples of small villages include 'Ōma'o and Lāwa'i.
- **Large Village:** Located in urbanized areas, large villages are made up of clusters of neighborhoods that can support a larger 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 large villages include Kōloa and Kalāheo.
- **Town:** Located in urbanized areas, 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. Līhu'e is an example of a town place type and is the only one on the island.

The fundamental building block of places on Kaua'i is the pedestrian shed, where spaces for living, working, shopping, learning, and recreation are typically located within a five-minute walk of one another. While small places on Kaua'i such as rural crossroads may exist within a single pedestrian shed, larger, more complex places such as towns may incorporate multiple pedestrian sheds.

5.2.2.1 Components of Walkable Place Types

Walkable places on Kaua'i can be differentiated from one another according not only to size, but also according to other qualities such as rural or urban character, limited or diverse land uses, and detached or attached building forms. Generally,



crossroads and small villages tend to be smaller and more rural in character, with a limited range of land uses and buildings that are primarily detached from one another. At the other end of the spectrum, large villages and towns are larger and more urban, with a greater diversity of land uses and buildings that are more commonly attached.

While crossroads and small villages are comprised of only one small neighborhood, large villages and towns are made up of several different neighborhoods. Neighborhoods can be further broken down into three component parts: “neighborhood center” or the main street of town, “neighborhood general,” and “neighborhood edge.” Differentiating the parts of a neighborhood helps to identify where it is appropriate for certain types of development to take place within a neighborhood.

Neighborhood centers—also called main streets—are appropriate for higher-density buildings and a mix of uses. Blocks designated as neighborhood general are meant to be less dense, with some mix of uses integrated into primarily-residential buildings that may be single- or multi-family. The neighborhood edge is intended for the least amount of density and is primarily single-family residential. All parts of the neighborhood are walkable and provide access to civic spaces.

The distillation of place types, from place type components and designations to more specific neighborhood components, helps to inform the assignment of transect zones as part of a Form-Based Code.

5.3 PLACES IN SOUTH KAUA'I

Each of the existing places in South Kaua'i was analyzed by the project team and the CAC and categorized into place types. Figure 5-1 illustrates the initial analysis which was later refined into the following place type descriptions based on the vision statements developed for each community. This analysis was also coordinated with their designation on the Land Use Map (Figure 4-1) and the transect zones for the SPAs. The place type descriptions also recognize the relationships of the different places to one another within the region.

5.3.1 Kalāheo

Kalāheo is the largest mauka village in the Planning District, bisected by Kaumuali'i Highway with 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. Over the long-term Kalāheo has the potential to grow into a Large Village since the topography lends itself to multiple-story buildings. However, wastewater service and transportation issues would need to be resolved to support such growth.

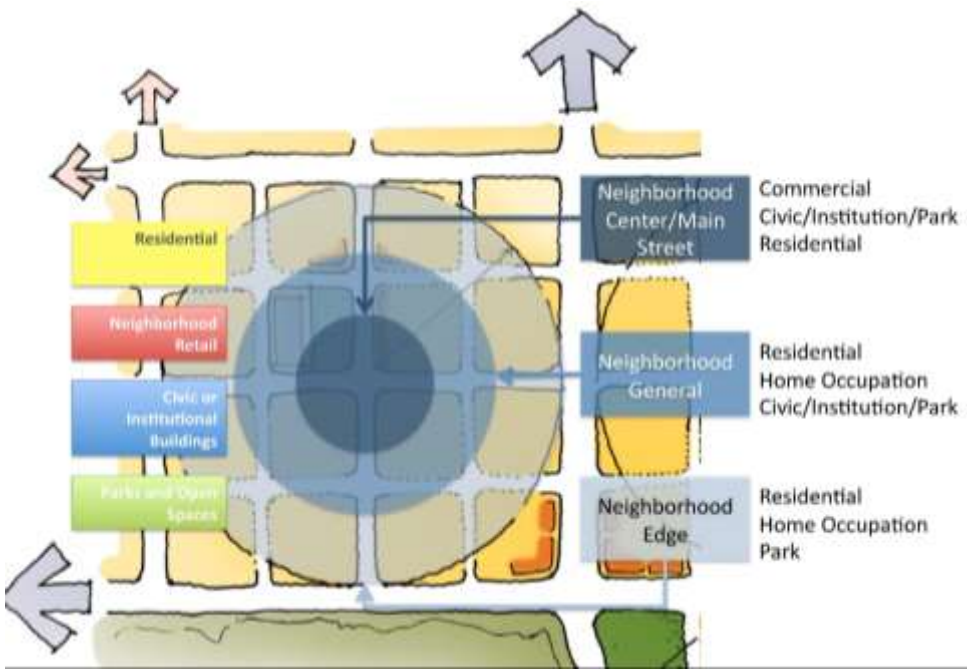
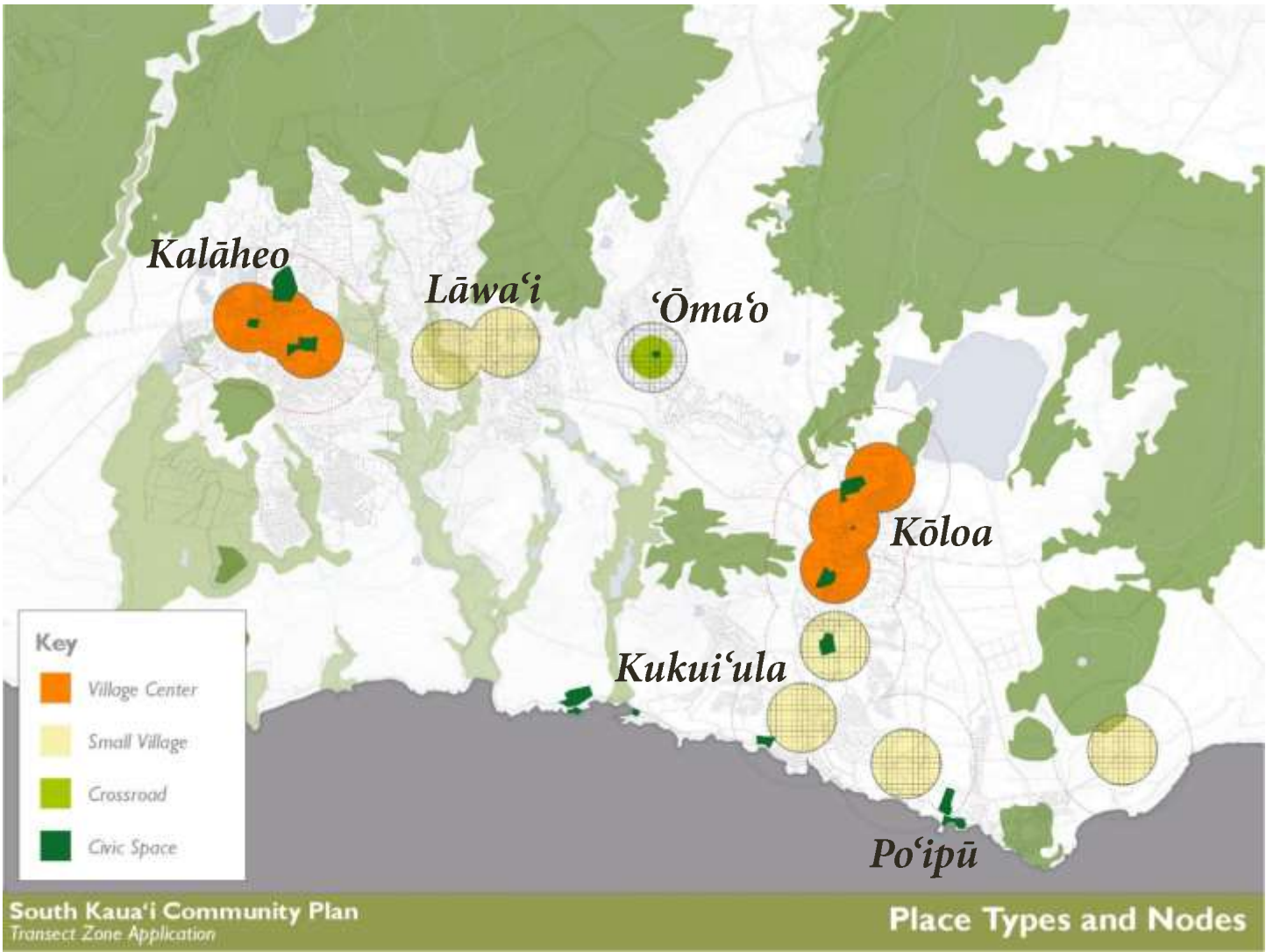


Figure 5-1: South Kaua'i Place Types Analysis



5.3.2 Kōloa

The site of the State's first sugar plantation, Kōloa is a compact, thriving village resting 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 Large Village due to the intensity, size of the commercial core, and the prominence of the area within the region.

5.3.3 Kukui'ula

Though Kukui'ula is not a place with much historic development, it is a growing area with many important assets: Spouting Horn, Kukui'ula Small Boat Harbor, and the National Tropical Botanical Garden, in addition to a beautiful coastline. This site is the focus of much new development, with a new high-end shopping center and club, and entitlements for large subdivisions set around golf courses.

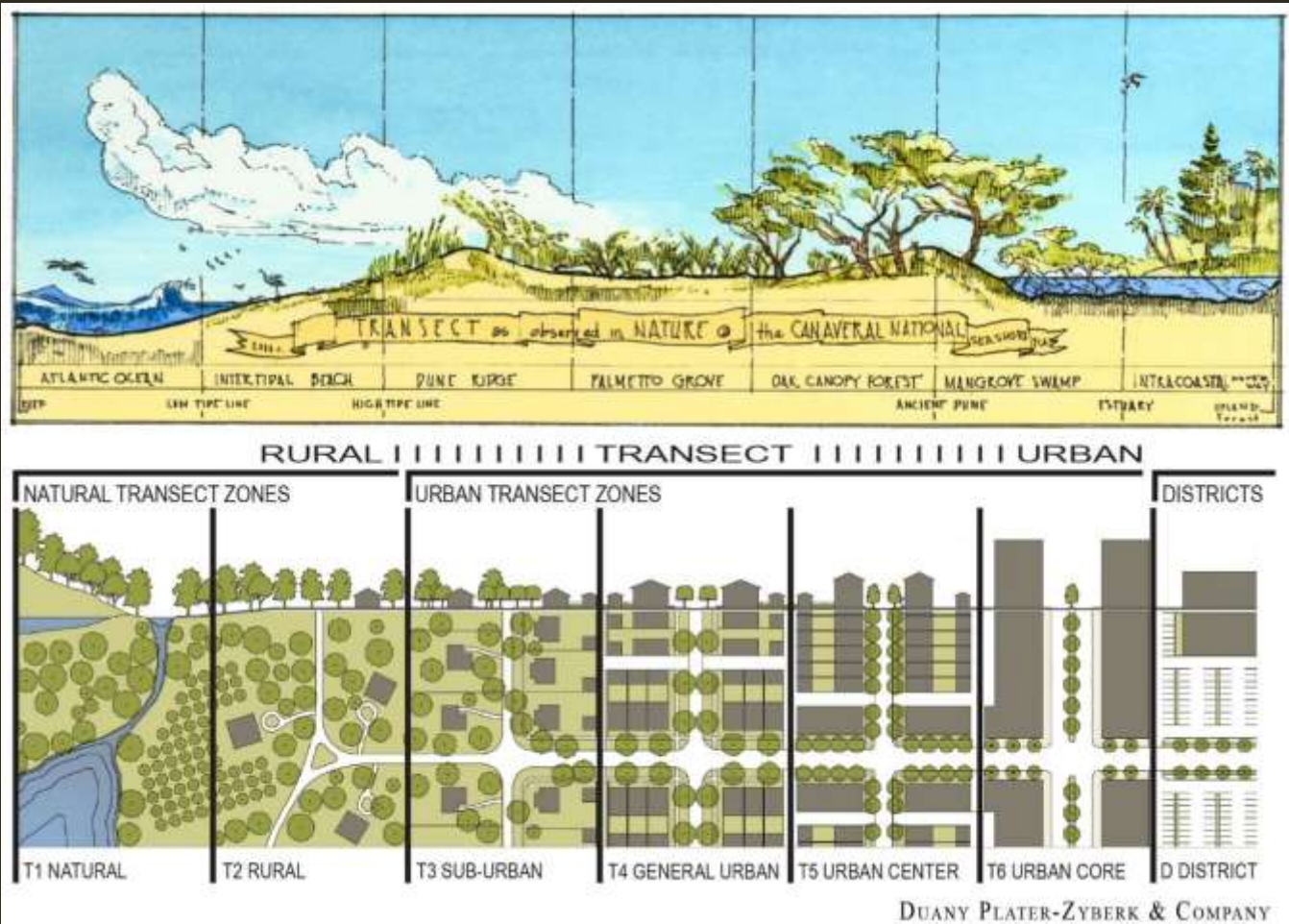
The Rural-to-Urban Transect

The Framework for the Form-Based Code:

The Rural-to-Urban Transect is an organizing principle used in Form-Based Coding (FBC) that establishes a hierarchy of places/contexts from the most rural to the most urban. The designation of each zone along this hierarchy is determined first by the character and form, intensity of development, and type of place and secondly by the mix of uses within the area. This hierarchy of places becomes the framework/organizing principle for the entire FBC, replacing use as the organizing principle as is used in conventional or Euclidean zoning. Transect zones are used to reinforce existing or to create new walkable mixed-use urban environments.

The Rural-to-Urban Transect is a means for considering and organizing the human habitat in a continuum of intensity that ranges from the most rural condition to the most urban. It provides a standardized method for differentiating between the intentions for urban form in various areas using gradual transitions rather than harsh distinctions. The zones are primarily classified by the physical intensity of the built form, the relationship between nature and the built environment, and the complexity of uses within the zone.

~ Form-Based Codes Institute



The model transect is divided into six transect zones or T-zones: Natural (T1), Rural (T2), Sub-Urban (T3), General Urban (T4), Urban Center (T5), and Urban Core (T6), together with a District (D), often referred to as a Special District, designation for areas with specialized purposes (e.g., heavy industrial, transportation, entertainment, or university districts, among other possibilities). Each T-zone is given a number: higher numbers designate progressively more urban zones, and lower numbers designate more rural zones.

The traditional Hawaiian ahupua'a has some parallels with the Rural-to-Urban Transect, as land use intensity was historically related to the location of the land within the watershed (i.e., mauka areas were typically forested and sparsely populated, while lowland makai areas were used for cultivation, habitation, and cultural activities). Transect-based zoning can be utilized so that modern communities will also retain a strong relationship to the land, encouraging them to be complete, compact, and connected.

5.3.4 Lāwa'i

Lāwa'i is a small mauka neighborhood straddling a winding section of Kaumuali'i Highway, with 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 its reservoirs and hilly topography. Lāwa'i can be categorized as a rural crossroad due to the limited retail and civic uses found at the core and the surrounding residential areas and hills.

5.3.5 'Ōma'o

'Ōma'o is 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.

5.3.6 Po'ipū

Po'ipū is a collection of makai developments and 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 can be classified as a Resort area. While there are portions that have walkways and bike paths, in the longer term, there is potential for Po'ipū to transition to a more walkable environment.

5.4 TRANSECTS AND ZONING

5.4.1 Using Zoning to Reinforce Place

FBCs provide an alternative approach to Euclidean zoning that emphasizes physical form, rather than separation of uses. They have been utilized to reinforce walkable, sustainable, mixed-use environments that build upon the existing character of places. The nonprofit Form-Based Codes Institute defines FBCs as follows:

"Form-Based Codes foster predictable built results and a high-quality public realm by using physical form (rather than separation of use) as the organizing principle for the code. These codes are adopted into city or county law as regulations, not mere guidelines. Form-Based Codes are an alternative to conventional zoning."

The transect is the organizing principle of FBCs, which regulates the built environment based on its location within the natural to urban spectrum. For the purposes of the SKCP, the transect zones are limited to the rural-to-urban spectrum as there is little need to dictate built form in the natural and agricultural zones (see next page, The Rural-to-Urban Transect sidebar).

Modern Form-Based Codes were initially utilized in the 1980s and 1990s as a means to implement innovative development patterns that would otherwise not have been feasible under conventional zoning. Since then interest and knowledge of form-based coding has increased rapidly, with the advent of the SmartCode, an open-source coding template that was made available by Duany, Plater Zyberk & Company in 2003, growth and development of professional FBC practitioners, the founding of the Form-Based Codes Institute in 2004, and several major publications supporting their development. As of November 2012, there were more than 250 adopted FBCs of different variety and scope across the country (Borys and Talen), including applications in Hawai'i. These include FBCs to implement infill and redevelopment (e.g., Mauka Area Rules for Kaka'ako in Honolulu, Oahu, 2011) as well as FBCs regulating greenfield development (e.g., Honokōhau Village in Kona, Hawai'i, 2008).

It is also important to note that while FBCs primarily regulate an intended physical form, they also regulate use secondarily. FBCs often allow a range of uses that are carefully chosen to maximize compatibility between uses and the intended physical form of the zone. The use tables are simplified and categorized by use type, and clearly defined, to allow a greater degree of administrative decision-making related to particular uses.

5.4.2 Implementation
Place type components and the land use designations have a direct relationship to transect zones and the implementation of Form-Based Codes as shown in Figure 5-2. These relationships were determined through the community planning process.

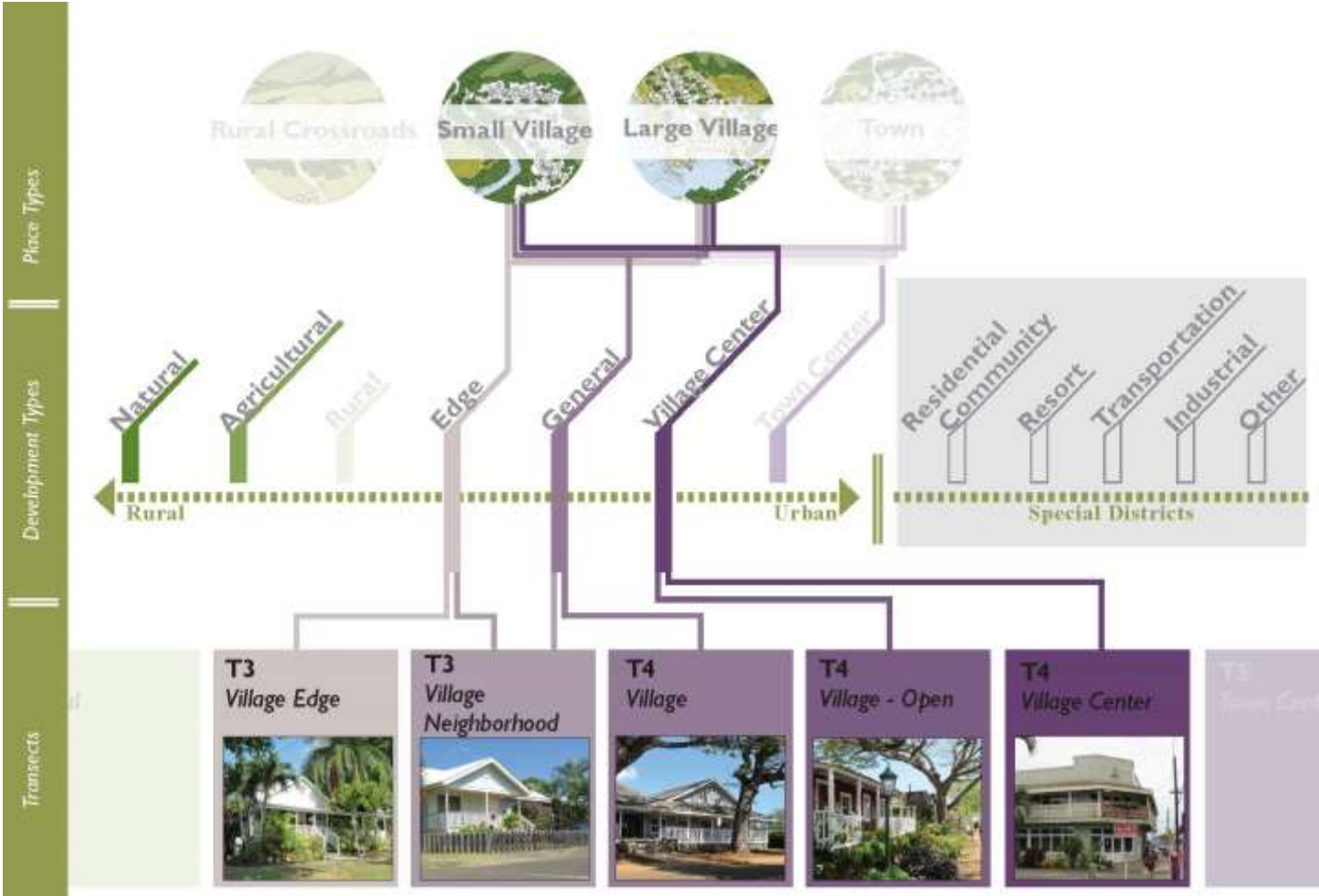


Figure 5-2: Place Types, Land Uses, and Transects

Transect zones can be applied to areas with place type components in order to accommodate growth and change. The exact delineation of transect zones can be “right sized” to the appropriate level of anticipated growth following the guidance that the place types provide.

- **Neighborhood Center** designations can generally be implemented with T5 and T4 Transect-zone districts to achieve moderate to high densities and a mix of uses appropriate for walkable centers.

- **Neighborhood General** designations can typically be implemented with T4 and T3 zone districts to achieve moderate densities and supporting land uses appropriate for areas in close proximity to walkable centers.
- **Neighborhood Edge** designations can typically be implemented in the Form-Based Code as T3 zone districts to achieve low to moderate densities and supporting land uses appropriate for areas further from, but within walking distance of, walkable centers.

Existing places in South Kaua‘i help to inform the Form-Based Code content. The range of intensities found in historic centers, for example, can provide direction for how greenfield areas may be required to compose transect zones when forming new places. An analysis of the scale and size of the existing development in South Kaua‘i provides a basis for the form standards of respective transect zones, which regulate building types, building heights, setbacks, frontage types, and frontage depths, etc.

The South Kaua‘i transects fall within the T3 and T4 zones and include:

- **T3 Village Edge.** This zone reinforces established neighborhoods to maintain neighborhood stability and provide a transition between higher intensity walkable neighborhoods and rural and agricultural areas.
- **T3 Village Neighborhood 1.** This zone provides a walkable neighborhood that integrates compatible multi-family housing types such as duplexes and cottage courts within walking distance to transit and village center areas.
- **T4 Village Neighborhood.** This zone integrates appropriate, medium-density residential building types such as duplexes, cottage courts, small courtyard housing, and mansion apartments with limited retail and service uses in an environment conducive to walking and bicycling.
- **T4 Village Center.** This zone integrates main-street commercial and retail environments into neighborhoods, providing access to day-to-day amenities within walking distance, creating potential for a transit stop, and serving as a focal point for the neighborhood.

Since the South Kaua‘i transects are meant for application primarily in those areas where mixed-use, walkable environments are desired, both T1 Natural and T2 Rural Transect Zones have not been included. The T5 Town Center is reserved for more intense mixed-use environments than are found in South Kaua‘i. Additionally, because very high densities are not currently compatible with the character of Kaua‘i, the T6 Urban transect zone has also been omitted.

The transect zones are established in the Regulating Plans for Kōloa, Kalāheo, and the Po‘ipū Roundabout Special Planning Areas. (See Appendix C of the SKCP). Future master planning processes will need to be completed to determine the appropriate transects for the remaining three proposed SPAs at Po‘ipū Gateway, Lāwa‘i Cannery, and Numila. However, they have been categorized as a Large Village (Po‘ipū Gateway) and two Small Village (Lāwa‘i Cannery and Numila) place types to guide this effort. For all the SPAs within South Kaua‘i, the FBC in Appendix C of the SKCP will supersede the regulations from the County’s CZO tied to the underlying zoning districts.

The FBC also provides standards for developing larger projects that are otherwise regulated by the County’s Subdivision Ordinance such as block size, street standards, and park dedication. These elements are regulated in the Street and Thoroughfares and Civic Space sections of the FBC.

6 IMPLEMENTATION & MONITORING

6.1 COMMUNITY PLAN ADOPTION

Adoption of the South Kaua'i Community Plan (SKCP) will require repealing and replacing the existing Kōloa-Po'ipū-Kalāheo Development Plan. It will involve review by the Planning Commission and adoption by the County Council, including revisions to Article 6 of KCC Chapter 10, "Special Development Plans" to implement the three proposed Special Planning Areas (SPAs) that will reference Appendix C of the South Kaua'i CP (South Kaua'i FBC) for the FBC regulations. The public review draft has been unveiled at "open house" meetings in Kōloa and Kalāheo and public hearings will be a part of the Planning Commission and County Council review processes.

The County Planning Department will also take a proactive role in supporting zoning amendments and State Land Use District Boundary Amendments (SLUDBA) as required to implement the CP whether it is part of the State's 5-year boundary review process as required by HRS §205-18, or submitted as individual applications and petitions. There may also be another opportunity to implement large-scale redistricting should the task force convened by the State Office of Planning recommend revising the SLUDBA process to include comprehensive boundary redistricting whenever the counties update their long-range plans such as the general plans and community plans. This effort is currently underway and may or may not be completed by the time this CP is adopted. However, it should be monitored as the County continues to update its GP and CPs.

6.1.1 General Plan Recommendations

The County Planning Department will be initiating the General Plan update as this CP goes through draft review and plan adoption. The GP was last updated in 2000 and its planning horizon is the same as this SKCP and the Līhu'e CP's, which is 2035. Because the regulatory maps within the GP are expected to change, the primary recommendation is to be consistent with those of this CP. Also the concept and potential application of Transfer of Development Rights is recommended to be explored and possibly adopted as part of the next GP update. Lastly, the three proposed SPAs that do not have regulating plans should initiate their master planning processes to establish their transect zones and have their SPAs and regulating plans adopted through the GP update.

6.1.1.1 Transfer and/or Purchase of Development Rights

The concept of Transfer of Development Rights (TDR) was introduced during the CAC meetings as a potential tool to help protect certain areas rich in natural and/or cultural resources from development. TDRs allow the landowner to shift the allowable density for land uses that are otherwise permitted based on existing zoning from areas with sensitive natural or cultural resources to other properties they own elsewhere within the Planning District that may be more appropriate for development. This would result in a "density bonus" in the receiving parcels which is intended to incentivize the relocation of the proposed development. The Planning Department determined that TDRs should be addressed on an island-wide basis as part of the General Plan update. However, two specific sites were identified as potential candidates for TDRs: 1) the "historic property" located on the Eric A. Knudsen lands in Po'ipū mauka of Po'ipū Road by CSH, and 2) the coastal area of Māhā'ulepū shown in the "Natural" Land Use Designation on the Land Use Map (Figure 4-1).

The concept of Purchase of Development Rights (PDR) involves the actual purchase of a property's development rights based on the fair market value of those potential developments in order to similarly protect sensitive resources. A conservation easement or some other limitation on development would run with the land once the PDR is completed.

6.1.1.2 CP Land Use Map Updates via the General Plan Update

As part of the GP update, the three future SPAs that do not have transects identified for them— Lāwa'i Cannery, Po'ipū Gateway Mixed-Use Village, and Numila—should be master planned and appropriate transects should be identified and adopted as regulating plans. If this is accomplished, this should, in turn, amend those areas of the Land Use Map in this CP from Large and Small Villages to the respective Neighborhood Center, Neighborhood General, and Neighborhood Edge designations.

6.1.1.3 Land Use Entitlement and Approval Processes

Related to the above, consideration for streamlining the entitlement process for zoning amendments and subdivision approvals should be considered for proposed projects which are consistent with the updated community plans. Potential incentives could include shorter review periods or administrative rather than discretionary approval processes.

6.1.2 County Code Amendments

Chapter 10, Kaua'i County Code 1987, as amended, will be amended to create three Special Planning Areas (SPAs) for the areas where the Form-Based Code will apply. These are the Kōloa, Kalāheo, and the Po'ipū Roundabout SPAs. Regulating Plans have been completed with transects identified in the South Kaua'i FBC and their boundaries will be added to the zoning maps. These changes are now adopted with Council approval of the SKCP. The remaining three SPAs as designated on the Land Use Map (Figure 4-1) require additional master planning processes to develop their respective Regulating Plans with transects. Ideally, this can be accomplished in conjunction with the upcoming General Plan process, but may occur as a separate process that could include other future SPA areas from the other planning districts. The three future SPAs are the Lāwa'i Cannery, Po'ipū Gateway Mixed-Use Village, and Numila.

Any development within the SPAs must follow the development standards, allowable land uses, and procedures described in the South Kaua'i FBC rather than those of the underlying zoning district unless the FBC is silent on those matters. Similarly, if there are standards described in the FBC which contradict with those in the Subdivision Ordinance (KCC Chapter 9), then the FBC will supersede those described in the Subdivision Ordinance for the SPAs.

6.1.2.1 Future Zoning District Amendments

State land. There is a State-owned parcel TMK 2-8-022:006 that is recommended for downzoning from R-6 to Open. Discussion with the DLNR Land Agent regarding the first parcel indicated that there are no concerns as there are no projects slated for the land. It is currently under a long-term agricultural lease for ranching till the year 2030.

Industrial. The roughly 160-acre area around the historic Kōloa Mill is designated for industrial use and a zoning amendment should be sought for the area indicated on the Land Use Map (Figure 4-1) in conjunction with a State Land Use District Boundary Amendment to Urban.

6.1.2.2 Visitor Destination Areas

The County's Visitor Destination Area (VDA) boundary shall be amended to include the areas within the Resort Land Use shown on Figure 4-1.

6.1.2.3 Error on Existing Zoning Map

There is an error on the Kōloa Zoning Map ZM-KO 300 that should also be corrected. There is the letter "A" floating in the area of TMKs 2-8-14:01 and 23 which should be an "O" for the Open District. This should be corrected on the amended Kōloa Zoning Map ZM-KO 300.

6.1.3 Special Planning Areas

Chapter 10 of the KCC describes the Special Development Plans for areas that have special development requirements. The new SPAs identified in this SKCP will be mapped on the County zoning maps and described in Chapter 10. The development standards in the South Kaua'i FBC will be adopted by reference and apply to these SPAs.

6.1.4 Subdivision Requirements

Similar to the development standards within the CZO, there are requirements within the South Kaua'i FBC which will override the subdivision standards (KCC Chapter 9) within the SPAs. These mainly impact park dedication requirements and street, block, and driveway standards within the SPAs.

6.2 CAPITAL IMPROVEMENT PROJECTS

The following section summarizes various capital improvement projects (CIP) described in this plan. Future capital improvements will be driven by the County's financial situation. However, the following provides information on priorities and order-of-magnitude cost estimates as well as potential financing alternatives to support their implementation. CIP projects should be directed to support the proposed growth areas of the plan.

6.2.1 General CIP Priorities

During one of the last CAC meetings, attendees were asked to rank their priorities for CIP improvements by County agency and by location. CAC members who were not in attendance were emailed or mailed a copy of the survey and their responses have been incorporated into the following summary of the results. All results are ranked from highest to lowest priorities.

6.2.1.1 Department of Parks and Recreation Priorities

- 1. Fix existing parks and facilities (no redesign)
- 2. Change the mix of recreational facilities (see Section 4.6.1 for a list of proposed facilities)
- 3. Build more community centers/meeting rooms
- 4. Acquire land for new parks
- 5. Replenish sand at beaches

6.2.1.2 Transportation Agency Priorities

- 1. Add Po'ipū resort circulator
- 2. Increase capacity on Kōloa Shuttle route
- 3. Change Kōloa Shuttle route to include 'Ōma'o Road
- 4. Add more bus shelters
- 5. Increase capacity on Kekaha-Līhu'e mainline

6.2.1.3 Public Infrastructure Priorities for Kalāheo

- 1. Multimodal roadways
- 2. Regional wastewater treatment plant
- 3. Drainage improvements
- 4. Potable water resources

6.2.1.4 Public Infrastructure Priorities for Kōloa

- 1. Multimodal roadways
- 2. Regional wastewater treatment plant

- 3. Drainage improvements
- 4. Potable water resources

6.2.1.5 Public Infrastructure Priorities for Po'ipū

- 1. Multimodal roadways
- 1. Drainage improvements (same average ranking as above)
- 2. Regional wastewater treatment plant (very close third)
- 3. Potable water resources

6.2.1.6 Public Infrastructure Priorities for 'Ōma'o

- 1. Multimodal roadways
- 2. Drainage improvements
- 3. Regional wastewater treatment plant
- 4. Potable water resources

6.2.1.7 Public Infrastructure Priorities for Lāwa'i

- 1. Multimodal roadways
- 2. Drainage improvements
- 3. Regional wastewater treatment plant
- 4. Potable water resources

6.2.1.8 Kalāheo Town Roadway Improvements

- 1. Papalina Road/Kaumuali'i Highway intersection improvements
- 2. Sidewalks and bike lanes on Kaumuali'i Highway
- 3. Sidewalk on Papalina Road
- 4. Sidewalk on Pu'uwai Road
- 5. Wider sidewalk on Pu'u Road

6.2.1.9 Kōloa Town Roadway Improvements

- 1. Sidewalks on Kōloa Road
- 2. Construction of Northerly Leg of Ala Kalanikaumaka
- 3. Separated bike/pedestrian path on Hapa Road
- 4. Connect Lopaka Paipa Boulevard through to Ala Kalanikaumaka
- 5. Separated bike/pedestrian path on cane road
- 6. Roundabout at Maluhia Road/Ala Kinoiki
- 7. Sidewalks and bike lanes on Ala Kinoiki

6.2.1.10 Po'ipū Roadway Improvements

- 1. Bike/pedestrian path on Lāwa'i Road
- 2. Coastal pedestrian access easement
- 3. Bike/pedestrian path on Ho'onani Road
- 4. Sidewalks on Pe'e to Po'ipū Road
- 5. Sidewalk and bike lanes on Kapili Road
- 6. Bike/pedestrian path on Ho'owili & Ho'one Roads

6.2.2 Order-of-Magnitude Cost Estimates

This section is a compilation of projects and the order-of-magnitude cost estimates recommended in various sections of this Plan.

6.2.2.1 Multimodal Roadway and Streetscape Improvements

The multimodal roadway improvements ranked the highest of all CIP-type projects for all of the major communities within the Planning District. The following table includes order-of-magnitude costs for both the improvements proposed in Section 4.3.4 and previously recommended roadway projects that are still relevant to this Plan. It includes a 25 percent contingency to cover any restriping and resurfacing but does not include any planning, design, or operations and maintenance (O&M) fees. Detailed calculations for the SKCP estimates are provided in Appendix F of the SKCP. The only State-owned facility on the list is Kaumuali'i Highway through Kalāheo Town. There are only two projects on the STIP at the time of this report—Po'ipū Road and the Northerly Leg of Ala Kalanikaumaka.

Table 6-1: Multimodal Roadway and Streetscape Order-of-Magnitude Cost Estimates

Description	Length (LF)	Source*	Order-of-Magnitude Cost Estimate
KALĀHEO			
Kaumuali'i Highway ('Ōpū Road to Hokua Road)	2,050	SKCP	\$750,000
Papalina Road (Kaumuali'i Highway to Waha Road)	6,380	SKCP	\$1,052,700
Pu'uwai Road (Kaumuali'i Highway to Kalawai Park)	1,515	SKCP	\$258,500
KŌLOA			
Northerly Leg of Ala Kalanikaumaka (STIP)	2,108	FAHTP	\$20,000,000
Gateway Roundabout at Maluhia Road/Ala Kinoiki	N/A	KPACP+ SKCP	\$672,000
Kōloa Road (Maluhia Road to Post Office)	600	SKCP	\$324,700
Kōloa Road (remainder of Po'ipū Road to Waikomo Road)	770	SKCP	\$359,900
Weliweli Road (Kōloa Road to Waikomo Road)-Alternative 1	1,115	SKCP	\$522,100
Weliweli Road (Kōloa Road to Waikomo Road)-Alternative 2	1,115	SKCP	\$423,700
Weliweli Road (Waikomo Road to Hapa Trail)	1,200	SKCP	\$544,800
Ala Kinoiki-Alternative 1	15,375	SKCP	\$4,813,500
Ala Kinoiki-Alternative 2	15,375	SKCP	\$4,851,900
Hapa Trail Shared Use Path (Po'ipū Road to Weliweli Road)	9,237	KPACP	\$1,409,600
Cane Haul Road Shared Use Path (Ala Kinoiki to Po'ipū Road)	3,751	KPACP	\$571,900
PO'IPŪ			
Po'ipū Road (Lāwa'i Road to Ala Kinoiki Road-bike lanes, sidewalks, and intersection improvements) (STIP)	15,519	FAHTP	\$6,725,000
Lāwa'i Road Shared Use Path (Spouting Horn to Po'ipū Road)	10,261	KPACP	\$1,562,700
Ho'owili Road	1,070	SKCP	\$331,900
Kapili Road (Widen existing sidewalks)	1,085	SKCP	\$189,300
Lopaka Paipa Boulevard Connection	941	KPACP	\$608,600

Description	Length (LF)	Source*	Order-of-Magnitude Cost Estimate
REGIONAL ROADS			
Maluhia Road Shared Use Path (Kaumuali'i Highway to Ala Kinoiki)	15,200	SKCP	\$3,325,000
Maluhia Road Shared Use Path (Ala Kinoiki to Kōloa Road)	2,065	SKCP	\$599,700
Kōloa Road Separated Shared Use Path (Kaumuali'i Highway. to Piko Road)	3,470	SKCP	\$932,600
Kōloa Road Separated Shared Use Path (Piko Road to Ala Kalanikaumaka)	12,744	SKCP	\$3,425,000
Kōloa Road Separated Shared Use Path (Ala Kalanikaumaka to Po'ipū Road)	1,725	SKCP	\$463,600
*Source of cost estimates: <ul style="list-style-type: none">FAHTP = Federal Aid Highways 2035 Transportation Plan for Kaua'i (CH2MHill 2014)KPACP = Kōloa-Po'ipū Area Circulation Plan (Charlier 2007)SKCP = South Kaua'i Community Plan (Planning Commission draft approved in 2014, as amended by the Kaua'i County Council in 2015, and as may be subsequently amended)			

6.2.2.2 Transit Cost Estimates

Current estimates for increasing capacity for transit either involve larger buses or more frequent service. According to the County Executive on Transportation, the vehicles currently used for County's Kaua'i Bus service are cutaway vehicles which can carry between 29-33 passengers. They cost about \$180,000 to purchase and have annual operations and maintenance (O&M) costs of about \$60,000 for fuel, repair and maintenance, and labor. Unfortunately, their service life is shorter than typical transit buses. A 40-passenger transit bus is much more expensive at \$600,000. However, its service life is 10 years compared with 5 years for the cutaways. Annual O&M is estimated at \$75,000 for the 40-passenger transit bus. A 50-passenger transit bus is estimated to cost \$950,000 with an estimated \$80,000 O&M annual cost and 12-year service life.

6.3 POTENTIAL FINANCING AND FUNDING ALTERNATIVES

The Planning District has been a unique testing ground for innovative financing. It is the first in the State to implement a Community Facilities District (CFD). It is also at the forefront of implementing a version of impact fees—an active and progressive community association took the lead to finance an infrastructure study and has taken steps to finance the improvements identified in that study through a “voluntary” impact fee agreement that could be superseded someday by an officially adopted county-wide impact fee program. The CFD and voluntary impact fee program are described in more detail in the SKCP, along with other potential funding sources. They are listed for brevity in this executive summary. However, the general objective is to identify a range of funding alternatives for the County that could be flexibly earmarked and combined to deliver the public facility and program requirements identified in this plan.

6.3.1 Financing Guidelines

The following guidelines are intended to help the community and decision makers select the appropriate funding source based on a rational assessment of fairness, reasonableness, and prudence in determining who should pay, when, and how.¹

1. Fairness: Those who benefit (nexus) should pay their proportionate share.

¹ Adapted from Goodwin Consulting Group, 2011. Financing Plan for Public Facilities and Backbone Infrastructure for the Kona Community Development Plan. Prepared for the County of Hawai'i.

- a. Infrastructure or public facilities that serve a region should be paid by an appropriate broad base such as general taxpayers (e.g., arterial or collector streets, backbone water system, wastewater treatment and collection system). Infrastructure that serves a defined area should be paid by the users who benefit by the local infrastructure or facility (e.g., local roads, water distribution system connecting to properties, sewer collection laterals and local collection system).
- b. General taxpayers rather than new development should pay for *existing deficiencies*. New development should pay their *proportionate share* of regional or subregional infrastructure and facilities.
- 2. Reasonableness: Developers and property owners must be able to support the assessed burdens. The bottom line should be does it work for all parties—public sector and private sector, residents and businesses already located in the area, and future residents and businesses.
- 3. Prudence:
 - a. Consider debt capacity and risks for longer-term borrowing. No financing should be initiated that may adversely affect the County’s credit rating.
 - b. Consider cash flow reliability:
 - i. **Sporadic.** These funds are received infrequently and without any solid level of predictability. These funds could be accumulated over time and used for acquisition and/or improvements. Examples are: exactions; general obligation bonds; Federal programs/grants.
 - ii. **Frequent but Irregular.** These funds are received typically throughout the year and/or on an annual basis, but the amount is more or less difficult to forecast. These funds could also be accumulated over time and used for design and construction or, in some instances where there is near certainty that at least a minimum amount will be collected each year, used to provide a steady stream of revenue for ongoing maintenance. Examples include: user fees; concession revenue.
 - iii. **Frequent and Predictable.** These funds are received throughout the year and/or on an annual basis, and the amount can be predicted with reasonable accuracy. This regular stream of revenue can be used to meet annual maintenance requirements or debt service, with any excess channeled into design and construction. Some examples are: property tax; CFD/business improvement districts (BID) special taxes and assessments.
- 4. Concurrency: Prioritize critical infrastructure and facility projects and regulate development to ensure that adequate infrastructure is provided when needed.
- 5. Coordination: Address circumstances where there may be multiple landowners and developers with disharmonious development schedules so that the first one is not unfairly burdened to the benefit of subsequent beneficiaries (e.g., oversizing requirements).

6.3.2 Funding Sources

This section summarizes the existing funding alternatives as well as potential new sources that require further study and/or enactment. Additional detail is provided in the SKCP.

6.3.2.1 Existing Sources

6.3.2.1.1 General Obligation Bonds, General Fund (CIP), Bond Fund

General Obligation (GO) bonds are governed by the State Constitution and Hawai'i Revised Statutes (HRS) Chapter 47. The security for these bonds is the full faith and credit of the County, and the principal and interest payments on the bonds are a first charge on the general fund of the County. Total funded debt (outstanding GO bond debt and other debt such as state revolving fund loans) cannot exceed 15% of the total assessed value of real property in the County.

Since the debt service for GO Bonds is paid from the General Fund with taxes paid by residents island-wide, appropriate facilitates to be financed from this source are those that provide some kind of regional or environmental benefit, or assists the County in meeting specific public policy goals related to workforce housing, economic development, or other similar objectives. The debt service is accounted for in the *General Fund*, capital expenses financed by the General Fund are accounted for in the *General Capital Improvement Fund*, and GO Bond proceeds used for capital improvements are accounted for in the *Bond Fund*.²

6.3.2.1.2 Development Fund

The Trust Fund for Contributions by Developers (also known as the Development Fund) is a special fund to deposit exactions imposed upon developers.³ “The annual CIP budget ordinance shall contain a trust fund account to include all contributions made by developers and others for the purpose of relieving impacts created by developments. The Council shall, in making the appropriations in the budget, identify the projects and cost estimates for the project similar to other Capital Improvements Projects. Capital improvement may include plans, land acquisition, structures, roads, sewers, equipment and other public facilities.”⁴ Appropriations from this fund are limited to capital improvements and excludes operational expenditures. The ordinance exacting the contribution needs to be checked for any limitations on the use or area of the contributed amount.

6.3.2.1.3 Public Access, Open Space and Natural Resources Preservation Fund

The Kaua'i County Charter established a special fund called the Public Access, Open Space and Natural Resources Preservation Fund.⁵ “The moneys in this fund shall be utilized for purchasing or otherwise acquiring lands or property entitlements for land conservation purposes in the County of Kaua'i for the following purposes:

- 1) Public outdoor recreation and education, including access to beaches and mountains;
- 2) Preservation of historic or culturally important land areas and sites;
- 3) Protection of significant habitats or ecosystems, including buffer zones;
- 4) Preserving forests, beaches, coastal areas and agricultural lands;
- 5) Protecting watershed lands to preserve water quality and water supply;
- 6) Conserving land in order to reduce erosion, floods, landslides, and runoff;
- 7) Improving public access to, and enjoyment of, public land and open space;
- 8) Acquiring public access to public land, and open space.
- 9) Conserving land for open space and scenic values.”⁶

² Id.
³ Kaua'i County Code Chapter 6 (General Provisions Relating to Finance), Article 8.
⁴ Kaua'i County Code §6-8.2.
⁵ Kaua'i County Charter 19-15.C.

6.3.2.1.4 Special Trust Fund for Parks & Playgrounds

Every subdivider as a condition precedent to approval of a subdivision shall dedicate land for park purposes and/or pay an in lieu fee. Fees paid are deposited in the park and recreational trust fund. “All monies received shall be used for the acquisition and development of park and recreational facilities, facilities replacement and maintenance equipment to serve the district in which the subdivision is located. Monies received may be expended on neighborhood community facilities in reasonable proximity to the subdivision. Where a public park and playground presently serves a subdivision, such fees may be used for the purpose of providing additional facilities for that park or playground. The County Engineer shall determine the various park areas for funding purposes.”⁷

6.3.2.1.5 Bikeway and Highway Funds

The legal source establishing the Bikeway Fund is not clear. If similar to other counties (e.g., City & County of Honolulu), the bicycle license fees are deposited into this fund and used exclusively for bicycle related projects and programs. By ordinance, any resident of the County who rides or propels a bicycle “on any street, highway, alley, roadway, sidewalk, or upon any public path set aside for the exclusive use of bicycles” is required to have the bicycle licensed.⁸

The Highway Fund receives the County’s share of the fuel tax pursuant to HRS §243-6. The funds may be used for the acquisition, design, construction, repair, and maintenance of County streets or bikeways, or functions related to transit.

6.3.2.1.6 Sewer Trust Fund

Fees collected pursuant to KCC Chapter 25 (Sewers) are deposited in the Sewer Trust Fund. Fees collected from connection charges and assessments for wastewater treatment capacity are restricted to capital expenditures, including repayment of State Revolving Fund loans.⁹

6.3.2.1.7 Revenue Bonds

The Kaua’i County Charter authorizes the County Council to issue revenue bonds “for the purpose of initiating, constructing, acquiring, extending, replacing or otherwise improving any revenue-producing facility as provided by law.”¹⁰ Revenue, or enterprise, bonds are also governed by the State Constitution and HRS Chapter 49. The security for revenue bonds is the County general fund, an enterprise fund (e.g., a fund collecting bi-monthly consumer water charges), or some dedicated revenue stream of the County or an enterprise. The Department of Water Supply is the most likely candidate able to issue revenue bonds secured by their revenue stream of customer charges.

6.3.2.1.8 Land-Secured Financing

Improvement District (ID) financing is governed by HRS §46-80 and Kaua’i County Code (KCC) Chapter 24. The security for these bonds is an assessment levied on property inside the specified boundaries of an ID, which is typically repaid in annual installments. Because the ID assessment must be based on a finding of special benefit, the ID can usually fund only local improvements. Also, every parcel within the ID is subject to the assessment.

Community Facilities District (CFD) financing is governed by HRS §46-80.1 and KCC Chapter 26. The security for these bonds is an annual special tax levied on property inside the specified boundaries of a CFD. Annual special taxes are

generally added to the property tax bill and collected at the same time as property taxes. Because the CFD is a special tax rather than an assessment, the CFD has more flexibility to fund special (local) or general (regional) benefit facilities. The CFD may distinguish between developed and undeveloped properties and also create other reasonable tax classifications (e.g., market vs affordable housing).

Ordinance No. 872 created the first CFD in the State. CFD No. 2008-1 encumbers parcels within the boundaries defined in the Ordinance corresponding to the Kukui’ula Development Project. Facilities authorized to be financed by the proceeds of the special tax and/or the proceeds of a CFD bond, as set forth in the Ordinance, include water system improvements, roadways, recreational facilities, civil defense sirens and other community improvements.

6.3.2.1.9 State Revolving Fund

The County may apply for various State Revolving Fund (SRF) loans to fund critical water and sewer projects. Examples of SRF programs include the Water Pollution Control State Revolving Fund, Clean Water State Revolving Fund, and Drinking Water State Revolving Fund. These programs fund projects to, among other things, prevent contamination of groundwater and coastal water resources, and to achieve or maintain compliance with drinking water standards. The source of funds to repay the loan is some kind of dedicated revenue source, such as bi-monthly charges billed to and collected from DWS water customers throughout the County, but may also require a pledge of the full faith and credit of the County. This funding is available for specified purposes and at attractive, low-interest loan terms, and funded projects must meet various eligibility and priority criteria. Loan terms typically involve 0.5% to 3.0% interest rates for 20 years, and loan amounts generally range from \$1.5 million to \$12.0 million.¹¹

6.3.2.1.10 Federal/State Grants

The Hawai’i Statewide Transportation Improvement Program (STIP) is a multiyear budget of State and County projects eligible for Federal funding. The Federal portion is usually 80% with the State or County providing the balance as matching funds. Roadway projects must have a functional classification of an arterial or major collector.

Federal transportation funds allocated through the STIP also include Transportation Enhancement Activities (TAP) activities such “on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation; recreational trail projects; safe routes to school projects; and projects for planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former divided highways.”¹²

There are numerous other funding programs to which a city, county, or private company applies directly to the federal government. For example, the U.S. Department of Commerce, through the Economic Development Administration, provides grants to fund the construction or rehabilitation of essential public infrastructure and facilities necessary to generate or retain private sector jobs and investments, attract private sector capital, and promote regional competitiveness. The current program provides up to \$3 million of matching grants, per project. The U.S. Department of Agriculture Rural Development has loan and grant programs to finance water and wastewater projects.

⁶ Kaua’i County Code §6-14.1.

⁷ Subdivision Code (Kaua’i County Code §9-2.8).

⁸ Kaua’i County Code §16-16.1.

⁹ Kaua’i County Code §25-14.1.

¹⁰ Kaua’i County Charter §3.15.

¹¹ Goodwin Consulting Group, 2011. Financing Plan for Public Facilities and Backbone Infrastructure for the Kona Community Development Plan. Prepared for the County of Hawai’i.

¹² U.S. Department of Transportation, Federal Highway Administration website, TAP overview, http://www.fhwa.dot.gov/environment/transportation_alternatives/overview/brief.cfm (accessed April 2015)

6.3.2.2 Potential Sources

6.3.2.2.1 Voluntary Fair Share Agreements and Impact Fees

In 2007, a report spearheaded by the Kōloa Community Association identified “regional development-driven” transportation projects for the Kōloa-Po‘ipū region.¹³ This report recommended impact fees as a funding source for these projects:

Impact fees should be used to fund regional development-driven projects. Because the need for these projects is driven by new development, impact fees, which are paid by property developers, are an appropriate funding source for these transportation investments. To be legally sound, impact fees must have a “rational nexus” between the fee charged and the “benefit” of additional roadway capacity funded by impact fees, and can only be used to fund capital investments, not operations and maintenance.¹⁴

Impact fees are governed by HRS §46-141 to 46-148, but also requires a county ordinance to authorize impact fees. Because Kaua‘i County does not have an impact fee ordinance, the report recommended “the establishment of a voluntary ‘Fair Share Contribution’ (FSC) system under which the Kōloa-Po‘ipū development community would agree to pay into an impact fee system as a way to fund and move the regional development-driven projects forward. However, the Plan strongly recommends that the County over time adopt a formal impact fee ordinance and that the voluntary FSC structure transition to a traditional impact fee system administered by the County.”¹⁵ The commitments under the voluntary FSC structure would be secured by a Voluntary Fair Share Agreement executed between contributing developers in the region and the County.

If and when the county-wide impact fee is set in place, the usual collection of impact fees would occur at the time a building permit is issued, but fees may be collected when final subdivision approval occurs or at other times (e.g., when a certificate of occupancy is issued). Impact fees are a pay-as-you-go mechanism because the fee revenue to fund infrastructure trickles in as development occurs, so it is not useful to finance large components of infrastructure that are needed early in the development cycle. Also, existing infrastructure deficiencies cannot be funded with impact fees; the County would need to identify another source to fund any current inadequacies.

6.3.2.2.2 Business Improvement Districts (BID)

A Business Improvement District (BID) is very similar to a CFD or ID, except that the primary purpose of a BID is typically to fund annual operating costs (e.g., security, landscape maintenance, marketing) associated with the needs of local businesses, rather than to fund infrastructure that serves new development.¹⁶ The source of this revenue stream is special assessments levied on property within the boundaries of the BID. Annual assessments are generally added to the property tax bill and collected at the same time as property taxes. Although enabled by HRS 46-80.5, Kaua‘i County has not yet authorized BIDs in this County.

¹³ Charlier Associates, Inc., 2007. Kōloa-Po‘ipū Area Circulation Plan.

¹⁴ Id., p. 66.

¹⁵ Id., p. 66.

¹⁶ Goodwin Consulting Group, 2011. Financing Plan for Public Facilities and Backbone Infrastructure for the Kona Community Development Plan. Prepared for the County of Hawai‘i.

6.3.2.2.3 Tax Increment District (TID)

Tax Increment Districts (TIDs) are governed by HRS §46-101 to 46-113. Kaua‘i County has not yet authorized TIDs in this County. The source of this revenue stream is an increase in property tax revenue, or tax increment. The increment results not from an increase in property tax rates, but from an increase in taxable property value primarily due to redevelopment or new development. A specific geographic boundary is determined for a TID, which is formed to fund public improvements. Since no new taxes or other annual burdens are being proposed with a TID, protest or election proceedings are not required; instead, TIDs are adopted by ordinance of the County Council.¹⁷ TIDs have not been implemented yet anywhere in the State. Whether bonds could be secured by tax increments is not clear for Hawai‘i, but the revenue stream could be used to pay for smaller capital projects or partially pay debt service for a CFD or other land secured financing.

6.3.3 Funding Strategy

The prioritization and matching of the Plan’s projects to funding sources should be updated annually as part of the County’s overall CIP budgeting process. Based on the Financing Guidelines, factors to consider when updating the budget include:

1. Maximize the share of funding available from federal and state grant sources: e.g., STIP for arterial and collector roadway projects, bikeway projects, transit projects; TAP for safe routes to schools, pathways; USDA for water, wastewater, and solid waste projects. Provide local match with Highway Fund, Bikeway Fund, or Development Fund as applicable.
2. Keep track and coordinate the implementation of permit condition requirements. Where the required improvements benefit areas beyond the project, facilitate financing through ID, CFD, or reimbursable programs.
3. Match projects to special funds: e.g., parks (Special Trust Fund for Parks & Playgrounds); open space and public access (Public Access, Open Space, Natural Resources Preservation Fund).
4. Distinguish projects that address existing deficiencies and fund with General Fund CIP or GO Bonds.
5. Projects with long lead time usually have planning, design, and construction phases. Fund the projects through the early phases with smaller funding sources (e.g., Development Fund or Impact Fees) to position these projects to be design-ready or construction-ready. Occasionally, unexpected sources become available and projects that are closer to “shovel (construction)-ready” tend to compete better.
6. Combine funding sources with innovative sources to accelerate projects (e.g., Reimbursable GO Bond with CFD), pay for higher quality (e.g., CFD), retrofit existing development with sewer or water (e.g., USDA with ID), provide maintenance where the County does not have adequate capacity (e.g., BID), capture revenues generated to benefit the Planning District (e.g., TID).

Develop a parking plan which includes an analysis of revenues that could be collected from parking fees that could generate funds for improvements and maintenance of proposed infrastructure and streetscape improvements. Partner with business groups that would benefit from the improvements.

¹⁷Id.

6.4 ACTION PLAN

The following action plan provides a general overview of operational needs as well as steps to implement the CP. It is organized by County agency and provided in table format to show a rough schedule of short-term (0-5 years), mid-term (5-10 years), and long-range (10-20 years) actions.

Table 6-2: Action Plan by County Agency

County Agency	Near-Term Actions (0-5 Years)	Mid-Range Actions (5-10 Years)	Long-Range Actions (10-20 Years)	Policies (from Chapter 4)
Planning Department	<ul style="list-style-type: none">• Adopt the SPAs in Chapter 10.• Update General Plan.• Educate Planning and Public Works staff on FBC.• Improve permit and review processes for implementation of FBC, and explore possible streamlining mechanisms.• Add or identify at least one staff member to be dedicated to FBC implementation, review, education, and outreach.• Hold educational sessions for landowners affected by the new SPAs to inform them of the new development standards and potential opportunities. Include examples from T4 and T3 zones. Train County Planning and Public Works staff on new development standards.• Complete South Shore Shuttle Feasibility Study and move forward with possible solutions.• Work with the Mayor’s Office and County Agencies to incorporate the plan’s listed capital projects and priorities into the Six-Year Capital Improvements Program Report.	<ul style="list-style-type: none">• Evaluate how FBC performing. Determine if integrating FBC into the CZO is desirable and if so, amend CZO to include FBC.	<ul style="list-style-type: none">• Perform ongoing monitoring and evaluation every 5 years.• Prepare for next update of SKCP.	<ul style="list-style-type: none">• Sections 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.11
Transportation Agency	<ul style="list-style-type: none">• Work with Planning Dept. and PBRA to determine best option to provide South Shore Shuttle service and initiate it.• Initiate service to ‘Ōma‘o via the revised Kōloa Shuttle route. Perform ridership survey to determine what will increase ridership.• Coordinate with State DOT and DPW to improve pedestrian access around Lāwa‘i bus stops as new shelters are being installed.	<ul style="list-style-type: none">• Increase transit service on the Kekaha-Līhu‘e mainline as appropriate. In particular, look at increasing capacity during peak hours of highway traffic.• Coordinate installation of bus shelters with DPW as multimodal roadway networks are designed and constructed.	<ul style="list-style-type: none">• Increase transit service on the Kekaha-Līhu‘e mainline as appropriate.	<ul style="list-style-type: none">• Sections 4.3, 4.11.3
Department of Public Works	<ul style="list-style-type: none">• Coordinate one-year and six-year CIP processes and budgets with proposed projects identified in the CP. Develop a strategic plan that includes County-funded or subsidized infrastructure improvements which support the CP’s desired growth areas, streetscapes, policies, and priorities.• As a first step to implementing the Multimodal Roadway Network, restripe roadways to include shoulders and bike lanes as indicated in Figure 4-2. Change signage to direct visitor vehicle traffic to Ala Kalanikaumaka and Ala Kinoiki rather than Po‘ipū Road.• Develop detailed phasing plans, budget requests for planning, design, and construction of the Multimodal Roadway Network.• Implement design and construction of Po‘ipū Road improvements. Include bioswales within the 120 foot ROW and see if this can alleviate drainage problems	<ul style="list-style-type: none">• Continue coordination with the State DOT to implement streetscape improvements in Kalāheo Town.• Continue design and construction of multimodal roadways. Coordinate with Planning Dept. and adjacent landowners.<ul style="list-style-type: none">○ Northerly Leg of Ala Kalanikaumaka and roundabout at Maluhia intersection○ Weliweli Road○ Hapa Trail Shared Use Path○ Lāwa‘i Road Shared Use Path○ Sidewalks on Papalina and Pu‘uwai Roads in	<ul style="list-style-type: none">• Create a new Urban Forestry Division under the Department of Public Works to maintain the street trees and landscaping within the public right-of-ways.• Continue design and construction of multimodal roadways.<ul style="list-style-type: none">○ Cane Haul Road Shared Use Path○ Ho‘owili Road○ Kapili Road○ Ala Kinoiki○ Maluhia Road Shared Use Path (Kaumuali‘i Highway to Ala Kinoiki)○ Kōloa Road Separated Shared Use Path	<ul style="list-style-type: none">• Sections 4.2.1, 4.3.1, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7, 4.4, 4.5, 4.10, 4.11.3

	<p>in the area.</p> <ul style="list-style-type: none">• Work with State DOT to implement Kaumuali'i Highway improvements in Kalāheo Town.• Initiate design and construction of Kōloa Town sidewalks and crosswalks and Maluhia Road Shared Use Path between Ala Kinoiki to Kōloa Road.• Increase frequency of clearing and maintenance of road shoulders. Train road maintenance crews on proper tree trimming and coordinate with adjacent properties which may have landscape contractors already maintaining public roadway frontages.	<p>Kalāheo</p> <ul style="list-style-type: none">○ Follow up on Lopaka Paipa Boulevard connection○ Kōloa Road Separated Shared Use Path (Ala Kalanikaumaka to Po'ipū Road)	<p>(Kaumuali'i Highway. to Ala Kalanikaumaka)</p>	
DPW-Wastewater	<ul style="list-style-type: none">• Develop strategic plan to support and encourage conversion of all cesspools including SF residential within the Planning District to IWS/septic systems by 2035.• Coordinate as necessary with HOH Utilities on implementation of centralized WWTP.	<p>None identified at this time.</p>	<p>None identified at this time.</p>	<ul style="list-style-type: none">• Sections 4.5, 4.9.b and c, 4.10.3, 4.10.4, 4.10.7, 4.11.3.c
DPW-Solid Waste	<ul style="list-style-type: none">• Establish guidelines and policies to reduce construction waste. Integrate into building permit requirements.• Establish programs and requirements for residential complexes, resorts and businesses to reduce solid waste and increase diversion and reuse/recycling.• Expand recycling and reuse programs within the Planning District. Encourage processing and reuse within the Planning District whenever possible to minimize transportation costs and impacts.• Roll out automated trash pickup and curb side recycling within the South Kaua'i areas over the next five years as recommended in the Integrated Solid Waste Management Plan (ISWMP 2009).• Continue to follow the action plan from the ISWMP.	<ul style="list-style-type: none">• Update Integrated Solid Waste Management Plan.	<p>None identified at this time.</p>	<ul style="list-style-type: none">• Sections 4.5 and 4.10.5
Department of Water	<ul style="list-style-type: none">• Update the long-range Water Plan 2040 based on growth projections and land use patterns developed in the GP technical studies.	<ul style="list-style-type: none">• Schedule, budget, and perform ongoing system improvements to maintain service and anticipate projected growth.	<ul style="list-style-type: none">• Schedule, budget, and perform ongoing system improvements to maintain service and anticipate projected growth.• Prepare for next update of Water Plan.	<ul style="list-style-type: none">• Sections 4.5, 4.10.1 and 4.10.2
Department of Parks and Recreation	<ul style="list-style-type: none">• Develop detailed phasing plans, budget requests for implementing Kaua'i Parks and Recreation Master Plan. Incorporate proposed mix of recreational facilities listed in Section 4.6.1.• Explore creation of a new Division of Urban Forestry or training existing Division of Park Maintenance staff to care for street trees, urban landscaping, and bioswales. They could also maintain streetscape improvements in Lihu'e and along Ke Ala Hele Makalae.	<ul style="list-style-type: none">• Implement design and construction of projects as proposed for the Planning District.	<ul style="list-style-type: none">• Prepare for next update of Parks and Recreation Master Plan.	<ul style="list-style-type: none">• Sections 4.2.1.c, 4.6
Finance Department	<ul style="list-style-type: none">• Establish and initiate a charge for public parking in Kōloa and Po'ipū to support maintenance of public ROWs and to encourage people to walk or use alternative means of transportation within these popular destinations.• Investigate CFD/ID concepts for Kalāheo infrastructure improvements, and Kōloa-Po'ipū multimodal roadway improvements. Work with local business groups to explore public-private partnerships.• Enact legislation to enable the county to implement TID/BID strategies as	<p>None identified at this time.</p>	<p>None identified at this time.</p>	<ul style="list-style-type: none">• Sections 4.3.3, 4.11

	necessary.			
Civil Defense, Fire Department, and Police Department	<ul style="list-style-type: none">Work with resorts and vacation property owners/managers, police/rescue to develop an emergency evacuation plan and shelter in-place plans. Hold annual education sessions for visitor industry managers and security staff.Establish evacuation routes and educate the public about what to do in an emergency.	<ul style="list-style-type: none">Update visitor industry emergency evacuation and shelter in-place plans at least every 5 years.	None identified at this time.	<ul style="list-style-type: none">Sections 4.5.3
Housing Agency	<ul style="list-style-type: none">Work with Planning and Public Works departments to develop appropriate standards for pedestrian/bicycle facilities in workforce and affordable housing projects that keep development costs so projects can remain affordable.Work with the Planning Department to explore near-term opportunities for County-led affordable housing projects within the existing town cores of Kōloa and Kalāheo.	<ul style="list-style-type: none">The Housing Agency should work closely with Planning, Public Works, and Transportation to develop approx. 120-130 affordable housing units at the Kukui‘ūla workforce housing site at Po‘ipū road that supports multimodal access to Kōloa town and Po‘ipū.	<ul style="list-style-type: none">Align infrastructure and policy (Planning & Housing) that support and encourage higher density housing that can feasibly produce 25% of the units built in each town as affordable/workforce units per the Kaua‘i County Housing Policy (Ordinance 860). Goal is to have 25% of all units built be affordable as defined in Ordinance 860. Unit goal would result in 550+ affordable units in the Planning District.	<ul style="list-style-type: none">Sections 4.2.3, 4.5, 4.11.1.c, 4.11.4
Office of Economic Development	<ul style="list-style-type: none">Provide coordination support for various policies identified in the SKCP including but not limited to those listed in Sections 4.7, 4.8, 4.9, and 4.11	None identified at this time.	None identified at this time.	<ul style="list-style-type: none">Sections 4.5, 4.7, 4.8, 4.9, 4.11

6.1 INDICATORS

Various indicators can be used to measure the relative success of the plan recommendations. They range from improvements to the built environment to social indicators to economic indicators.

6.1.1 Land Use

- Increase in housing supply
- Reduction in Use Permit and Variance applications
- Reduction in time required to review and process permit applications
- Reduction in the length of public hearings and negative public testimony

6.1.2 Multimodal Network and Transit

- Decrease in traffic volumes and level of service
- Increase in pedestrian and bike traffic
- Increase in transit ridership

6.1.3 Natural and Cultural Heritage Resources

- Protection and restoration of natural and cultural resources
- Increased educational opportunities
- Improved water quality

6.1.4 Public Facilities and Infrastructure

- Reduced or stabilized use of potable water
- Increased use of non-potable water from surface, catchment and recycled water sources

- Reduced incidences of flooding at Po‘ipū Beach Park
- Reduced property damage (value and number of incidents) due to flooding
- Increased use and number of reservations at parks and recreational facilities
- Reduction in quantity of solid waste processed at landfill
- Reduction in the number of complaints

6.1.5 Economic Indicators

- Increase in the number of jobs/reduction in unemployment
- Increase in diversification of labor force/business establishments
- Increase in home ownership/decrease in homelessness
- Increase in agricultural production
- Increase in the number of visitors/occupancy rates
- Increase in permit applications and their cumulative value
- Increase in property values and tax collections

6.2 MONITORING

Once the South Kaua‘i Community Plan is adopted, monitoring for the SPAs should occur annually for at least the first five years to determine the effectiveness and ease of implementation for developers and review by Planning Department staff. Annual reports shall be transmitted to the Planning Commission and County Council. Adjustments and fine tuning should occur as needed. Once staff becomes proficient in their reviews, monitoring can shift to once every five years and reports shall be transmitted accordingly.