

This vision for South Kaua'i described in Chapter 2 will be implemented through the application of the land use policies and guidelines presented in Chapter 4 and the Form-Based Code described in Chapter 5 and Appendix C.

The region's character is typified by pockets of low-rise, small-scale rural centers and residential communities surrounded by large expanses of agricultural lands, open space, and scenic view planes. It also includes Kaua'i's world-famous Po'ipū resort destination. To ensure that this regional landscape is maintained, proposed land use policies reflect directed growth areas, resource protection, and community desires to maintain the region's rural setting and unique cultural heritage. These policies focus on the preservation of conservation and agricultural lands while directing limited growth toward Kalāheo, Koloa and Poʻipū.

The policies within the Kaua'i County General Plan have important bearing on the formulation of policies and guidelines for this community plan. Proposed land use policies are intended to outline future actions and agency decision-making once the Plan is adopted. Policies are broad statements of intent that express the County's overall philosophy toward particular land uses. Guidelines provide more specific guidance to public agencies and private entities in terms of planning, design and implementation of projects and programs in the various land use categories.

It is intended that existing uses and structures that are legal but are not consistent with the South Kaua'i Community Plan policy would be recognized as existing uses and allowed to remain as such in their current purpose, character, and level of use. Future proposed land use changes at those locations, however, would have to conform to the policies enumerated in Chapters 4 and 5.

Chapter 4 is organized under the following headings:

- Land Use 4.1
- Context-Sensitive Transportation Networks 4.2
- Kaua'i Native Plants 4.3
- Natural & Cultural Heritage Resources 4.4
- 4.5 Parks & Recreation
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- Walkable Mixed-Use Communities 4.7
- 4.8 Sustainable Resorts & Tourism
- 4.9 Industrial
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- Economic Development 4.11

4 POLICIES & 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. 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 shown in Figure 4-1, the Land Use Map. Within the SPAs, the development standards of the CZO would be overridden by the Form-Based Code (FBC) located in Appendix C.

In addition, there are some development standards for larger projects that involve roadway construction and block development housed within the County's Subdivision Ordinance (KCC Chapter 9). Within the SPAs, some of these standards will also be superseded by the FBC (Appendix C).

The Land Use Map shown in Figure 4-1 includes land use designations which are described below. Their relationship with the place types analyzed for South Kaua'i and the rural-to-urban transect which forms the basis of the FBC is charted in Figure 5-2.

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, pedestrianand bike-friendly roadways, new Special Planning Areas (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 Form-Based Code (Appendix C) 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 •
- Poʻipū Roundabout
- Lāwa'i Cannery
- Poʻipū Gateway Mixed-Use Village
- Numila

They are outlined with a purple dashed line on the Land Use Map and encompass the areas where transect zones are or will be applied as described in the Form-Based Code (Chapter 5 and Appendix C). The transects provide a spectrum of development intensity and building forms within these walkable mixed-use communities, ranging from taller, denser highly-mixed residential and commercial uses at the cores to more rural residential uses and scale at the edges. The intent is to amend the development standards and permitted uses of the underlying zoning so that building forms that encourage pedestrian activity are prioritized rather than the separation of land uses, which is what the County's current CZO is designed to do, based as it is on Euclidean zoning (meaning the traditional type of zoning where land use categories are segregated spatially).

The transect zones will only be located in the SPAs and only three of the six areas have Regulating Plans with transects determined through this community plan process. They are Koloa Town, Kalaheo Town, and the Poʻipū Roundabout. The other three areas must undergo a special master planning process to develop their Regulating Plans with transects in order for the SPA designation and FBC to apply. This would ideally occur during the upcoming General Plan update process so that other regulatory issues such as the State Land Use District classifications and zoning can be resolved concurrently with the other SPAs.

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.

- generally compatible in scale and form with adjacent residential areas.
- 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 other 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 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 (Appendix C). The Poʻipū 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.

• 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

• 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,

Figure 4-1: Land Use Map



South Kaua'i Planning District **C** Special Planning Area (SPA) Neighborhood Center Neighborhood General Water Bodies and Wetlands Irrigation, Reservoirs, Ditches and Flumes Parks and Recreation Proposed Visitor Destination Area Boundary (VDA) State Road & Highway Lae Kawelikoa Papamo'i Bay Naakea Cape Hā'ula Cove Hā'ula Beach Pāo'o Point Kawail Bay Gillins Beach Ň 3,000 1,500 0 3,000

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4.1.1.1 Koloa Town

Koloa'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. Koloa's town core has character, with a canopy of monkeypod trees and covered porch commercial buildings, bisected by Waikomo Stream. The center, primarily along Koloa Road between Poʻipū 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 Koloa to support a thriving pedestrian environment.

In order to support and encourage this compact pattern and prevent Koloa 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 Koloa 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 the 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 Koloa 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 Koloa 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 Poʻipū Roundabout on Ala Kalanikaumaka, Lāwaʻi, and Poʻipū 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 mediumdensity 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 restrictive covenants that dictate permitted uses and architectural design.

4.1.1.5 Po'ipū Gateway Mixed-Use Village

The Poʻipū 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 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 resort area, which already includes many 4-story buildings, and the need for affordable workforce housing in Po'ipū (Figure 4-2). 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.

Figure 4-2: Aerial of Po'ipū and the Po'ipū Gateway Mixed-Use Village



4.1.1.6 Numila

Numila is an area currently zoned R-6 Residential and 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 Hanapepe-'Ele'ele 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 Kawailoa 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. 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.

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.

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. The Natural designation encompasses all lands within the State Land Use Conservation District, over which the State Board of Land and Natural Resources (BLNR) has jurisdiction. The BLNR adopts and administers land use regulations for the Conservation District that are stricter than any County zoning regulations. In South Kaua'i, over 8,600 acres lie within the Conservation District, amounting to about 28 percent of the Planning District's total land area.

Watershed Areas. The Kaua'i Watershed Alliance is a public-private partnership that coordinates and manages the long-term protection of Kaua'i's uppermost watershed areas. While the managed watershed area spans across all planning districts, approximately 4,000 acres are located within the mauka portions of the South Kaua'i Community Plan area.

Forest Reserves and Preserves. As the well-known 'olelo no'eau (Hawaiian proverb) states, Hahai no ka ua i ka ululā'au, the rain always follows the forest. The ancient Hawaiians knew that without the forests, there is no rain. Without the rain, there is no life. For this reason, both public and privately-owned forest reserves and preserves are included within the Natural land use designation. Within the South Kaua'i planning district this includes a portion of the Līhu'e-Kōloa Forest Reserve, the Kanaele Preserve which is on land owned by Alexander & Baldwin but managed by The Nature Conservancy, and the Wahiawa Mauka State Park Reserve.

Dune Lands and Beaches. Kaua'i's beaches are known for their beauty and beckon to visitors and residents alike for recreation and visual enjoyment. However, the dunes fringing these beaches and especially those along Māhā'ulepū, Pā'ā, Pāo'o, Kāmala, and Weliweli are well-known as a major interment site for ancient burials. To help protect these sensitive natural and cultural areas, soils classified as "Dune Lands" and "Beaches" by the federal Natural Resource Conservation Service (NRCS, formerly known as the Soil Conservation Service) have also been included in the Natural designation. This

includes the beach east of Makaokahai Point near Nōmilu Fishpond, the tombolo at Poʻipū Beach, the Pāʻā Dunes and Makawehi Bluffs, and Aweoweonui above Hāʻula Bay.

Critical Habitat. All of the areas designated as critical habitat for endangered and threatened species by the U.S. Fish and Wildlife Service has been included in the Natural designation. This includes the latest designations as of 2014.

Lāwa'i Kai Special Subzone. The National Tropical Botanical Garden developed a special subzone within the State Land Use Conservation District to see this area used for conservation, research, education, and managed public recreational uses. The Lāwa'i Kai Special Subzone encompasses Allerton Garden, the lower reaches of Lāwa'i Stream, Lāwa'i Beach, and Lāwa'i Kai Bay including the submerged lands of Lāwa'i Kai Bay. The Lāwa'i Kai Special Subzone was approved by the State Board of Land and Natural Resources on April 26, 2013 and signed into law by Governor Abercrombie on July 5, 2013.

Archaeological Preserves/Cultural Resources. Cultural Surveys Hawai'i identified and mapped several archaeological preserves within the planning district. All of these are included in the Natural designation. Other significant cultural resources not located within the above categories were added to the Natural designation to increase the preservation of these resources. Nōmilu Fishpond, the Kāneiolouma Heiau Complex, and Waiopili Heiau are examples of these areas.

4.1.3 Agricultural

The designation of Agricultural lands continues Kaua'i's longstanding policy of preserving agricultural lands as a valuable resource base. It also recognizes irrigation water systems as a key resource and the facilities required to support it. The primary intent highlights the importance of open agricultural lands in maintaining Kaua'i's rural character and its economic viability as a visitor destination.

The land use policy and recommended uses for areas designated as Agricultural in the Land Use Map is similar to that described in the State Land Use Agricultural District (HRS §205-4.5) and the County General Plan, which states, Agricultural lands "shall be predominantly used for or held in reserve to be used in the future for agricultural activities" and the facilities to support these activities. "These activities include the breeding, planting, nourishing and caring for, gathering, and processing of any animal or plant organism, including aquatic animals and plants, for the purpose of producing food or material for non-food products; the commercial growing of flowers or other ornamental plants; the commercial growing of forest products; and the commercial breeding and caring for domestic animals and pets." (GP Policy 5.2.1(a))

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 loʻi 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

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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.

4.1.4 Parks and Recreation



Prince Kūhiō Park in Kukui'ula.

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 Kukui'ula and the roughly 7-acre future park designated at the Po'ipū Gateway Mixed-Use Village. The National Tropical Botanical Garden in Lāwa'i comprises 202 acres of Parks and Recreation land.

4.1.4.1 Opportunities for Future Parks or Protected Areas

For several decades, Māhā'ulepū 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 General Plan's stated policy for Māhā'ulepū is:

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)

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 Māhā'ulepū, was formed in 2000 for the purpose of working to preserve the natural and cultural resources of Māhā'ulepū, 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 Māhā'ulepū'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 Māhā'ulepū 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. In 2003, per charter amendment, the County established a Public Access, Open Space, Natural Resources Preservation Fund to acquire land and easements identified through a public process and guided by an advisory committee (the Public Access, Open Space, Natural Resources Preservation Fund Commission, also known as the Open Space Commission). In the Commission's 2005 and 2007/2008 Reports to Council, the Māhā'ulepū watershed (six parcels comprising 3,774 acres) was listed as a priority site for acquisition, but with the acknowledgment that the fund was unable to match the area's assessed value of over \$20 million (in 2005 dollars). Since then, the Commission has prioritized smaller acquisition projects that are within reach of the fund's capacity.

The National Park Service also performed a reconnaissance survey in 2008 to locate a potential national park in the coastal area from Māhā'ulepū to 'Alekoko Fishpond in Līhu'e (Figure 4-3). 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 Māhā'ulepū 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.

The opportunity to further explore these options may be forthcoming. U.S. Senator Brian Schatz introduced the Pacific Islands Parks Act of 2013, which calls for the Department of the Interior to conduct a special resource study for the "southeastern coast of Kaua'i, Hawai'i" for the purpose of not only determining the area's suitability as a National Park, but to "consider other alternatives for preservation, protection, and interpretation of the site by Federal, State or local government entities or private and nonprofit organizations."

Figure 4-3: National Park Service 2008 Reconnaissance Survey Area



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. These water features support the natural and agricultural environments as well as sustain South Kaua'i's communities.

The Kaua'i County Council received input from numerous concerned citizens with deep ties to the land in the Planning District, making clear that solutions to various water problems must be of paramount concern to the County, and carefully considered before any development may occur. Accordingly, 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. 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.

The following is a summary of the different features included in the mapping of the water bodies and wetlands. It also provides brief policy statements related to each.

Wetlands. The wetlands included on the Land Use Map are derived from the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory (NWI), which was last updated for the island of Kaua'i in 2005. The riverine wetlands were drawn by putting a 2.5 meter buffer around the centerline for a total width of 5 meters. The USFWS uses a definition for wetlands which is technically non-regulatory but is used mainly for planning purposes. The definition reads, "Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water." These areas include unvegetated wet areas (e.g., beaches, mudflats, gravel streambeds, shallow ponds) that are not considered wetlands under regulatory definitions used by other agencies such as the U.S. Army Corps of Engineers (Erickson and Puttock 2006). Wetlands are important environmental resources that can provide irreplaceable benefits including flood protection, water quality improvements, habitat for fish and wildlife, and opportunities for recreation, education, and research. The U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the U.S. Environmental Protection Agency as well as State and County agencies have responsibilities for the protection and management of wetlands. For individual development projects that may impact wetlands, a more detailed wetlands delineation study should be performed as part of the project's planning efforts to determine the actual regulatory boundary of any wetlands.

Streams. Streams include both perennial and non-perennial streams and their centerlines are mapped with a 3-dotted dashed line in dark blue. A 30 foot buffer was added to each side of the streams' centerlines for mapping visibility and to indicate potential areas that may affect the streams. Best development practices to reduce non-point source pollution from adjacent land uses should be implemented such as filtering runoff and providing landscaped buffers along the streams preferably with plants native to the area or those that are non-invasive to minimize negative impacts to the streams' ecology.

Floodways. The floodways as mapped by the State DLNR from FEMA's digital FIRM GIS layer are also shown in light blue. These maps were last updated on November 26, 2010 for the County of Kaua'i and include those areas of the 100-year storm (1% annual chance flood) which must be kept clear of encroachment. Areas outside of the floodway but within the

100-year flood for which base flood elevations have been determined and are therefore developable are not included on the Land Use Map.

Irrigation, Reservoirs, Ditches, and Flumes. These waterways support the vast agricultural fields within the district and are shown with a medium blue dashed line. The water reservoirs vary in size and location and serve as a fresh water resource for agricultural irrigation. These water features also provide habitat for water birds and stream biota and are shown with the same medium blue dashed outline on other water bodies when they serve this dual purpose. The irrigation network should be well-maintained by its respective landowners to support the agricultural uses throughout the Planning District.

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 for the SPA and 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.

Over the past few decades, the Ho'ona Road Neighborhood, a small community surrounding Baby Beach and Whaler's Cove with R-4 zoning, has shifted from predominantly residential to a mix of residential and transient vacation rentals today. As such, the character of the neighborhood has changed and at times there is conflict between the two uses, especially in regard to parking and noise. In 2014, 27 of the 58 parcels in the neighborhood had one or more units legally operating as transient vacation rentals under a TVR Non-Conforming Use Certificate. During the planning process, alignment of the area's existing TVRs with the VDA was explored. However, the residents desire no expansion of TVRs or resort uses in the neighborhood. Even though legally operating TVRs will likely continue in the area, the Ho'ona Road Neighborhood is shown as residential on the land use map with the exception of Whaler's Cove.

Homestead. The Homestead designation allows for single-family dwellings even if the parcel is in the State Land Use Agricultural District. 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. These homestead subdivisions include: Kalāheo Homesteads 1st Series (1906), Kalāheo Homesteads 2nd Series (1913), Lāwa'i Homesteads (1914), and 'Ōma'o Homesteads (1914). 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 is 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. For example, Kāneiolouma and Manoʻokalanipo Park were included in the resort land use in the 2000 GP. They have been taken out in the SKCP land use map and put into Natural and Parks and Recreation, respectively. The Resort areas also include multi-family and condominium projects which have been developed as resort properties and cohesive neighborhoods where many vacation rentals are located on adjacent single-family lots which were not previously mapped as Resort on the General Plan. Examples of these communities include the Lāwa'i Beach Resort, the Poʻipū Beach Estates, Wainani, specific strings of single-family homes along Hoʻona Road and makai of Kaheka and Pu'uholo Roads at Hanakāʿape Bay (Kōloa Landing), and the homes makai of Lāwaʿi Road west of Prince Kūhiō Park many of which operate legally as vacation rentals. The 13-acre Makahūʿena Point property has also been added to the Resort designation.



Poʻipū resorts along the coastline.

To satisfy the 2035 projected resort growth for the Planning District, a roughly 13-acre area wedged between the Grand Hyatt Kaua'i and the Po'ipū Bay Golf Course but behind the Pā'ā Dunes was selected as it is an already disturbed infill site bounded by the golf course and Grand Hyatt and was formerly used as the nursery for the golf course. The CAC felt this was the most appropriate location for any additional resort growth as they did not feel resort uses should extend west of Kukui'ula along the coast much of which is in IAL, or be located in the town centers, or mixed with primary residential uses, or in the agricultural and open greenfields. In addition, the vision for the area was seen as a low-scale project with an expanded park area directly east of Shipwreck's Beach and included additional public parking and a comfort station. During the Planning Commission hearings, however, there was concern regarding the expansion of resort uses with the projected number of units needed in the Planning District so close to the number of permitted but not-yet-built resort units. The Planning Commission decided, based on further public hearing testimony, to preserve the area as Open Space

and Agriculture on the Land Use Map (Figure 4-1) and to have periodic reviews to track the number of visitor units being built on entitled land and to compare them with the demand for additional units.

For Kukui'ula, there is a total of 1,500 total units permitted for the property but only half (750) are allowed to operate as vacation units. Because those 750 visitor units can be located anywhere within the project boundary, only the areas zoned Resort are shown in a solid pink Resort designation on the Land Use Map and the VDA boundary around the project site is shown for reference.

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 or held in reserve to be used in the future 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.

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4.2 WALKABLE MIXED-USE COMMUNITIES

The Walkable Mixed-Use Communities section identifies policies to enhance existing communities with pedestrianfriendly 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 (Appendix C). 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 Poʻipū 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.
- Create a secondary main street environment in Kalāheo along Papalina Road fronting the commercial uses.
- Provide a neighborhood grocery store in Kalāheo.
- 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. Koloa'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 Koloa.
- Tourism supports a good portion of commercial activity in Koloa'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 Koloa to preserve its greatest asset: its uniqueness of place.
- 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

- Foster the unique sense of place within each community. a.
- 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.
- Protect the rural character of the community from sprawling development. Sprawling development patterns between the different towns and especially between Koloa and Po'ipū should be avoided to maintain the areas as distinct communities.

4.2.3 Housing Location and Options

Provide for a diversity of housing to accommodate various household types, incomes and family sizes. The ability a. 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.

- SMS through 2035 shall be directed to the following areas:
 - Existing Town Centers- Koloa (24 percent) and Kalaheo (3 percent)
 - Poʻipū Gateway (60 percent)
 - Numila (8 percent)
 - Homestead lots (5 percent)
- CAC also envisioned this as the highest level transect in the Planning District.
- Allow for a variety of accessory dwellings such as 'ohana units and "granny flats" within the SPAs. d.
- 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.



Sueoka Market, Koloa Town

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

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

Provide affordable housing, especially in the Koloa-Po'ipū area, a major jobs center on the island, through policies

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. When asked what their priorities were for improving South Kaua'i, pedestrian/bike paths received the most votes in all surveys. In 2012, Charlier Associates developed the Kaua'i Multimodal Land Transportation Plan. The surveys and public meetings that were a part of this plan 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

With the priority for safer, more connected streets for pedestrians and cyclists voiced by the community, a multimodal roadway network was developed to highlight improved pedestrian and bicycle facilities throughout South Kaua'i. See Figure 4-4. A separate map was done for the transit system that the County operates as The Kaua'i Bus and is shown in

Figure 4-5. It will also be discussed in more detail in Section 4.3.2.

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. As noted in the *Federal-Aid Highways 2035 Transportation Plan for the District of Kaua*'i, federal and state funding will have an estimated \$2.0 billion dollar



Cyclists in Kalāheo.

shortfall by the year 2035. Recent federal legislation is also emphasizing system preservation rather than high-cost capacity projects such as adding lanes or constructing new roads. It also cites consistency with the federal MAP-21 (Moving Ahead for Progress in the 21st Century) performance goals as codified in 23 USC 135 which states "that long-range plans should consider all modes of transportation, and provide for an integrated, comprehensive transportation system" (CH2MHill 2014).

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



Bustling Koloa Town.

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.

SOUTH KAUA'I COMMUNITY PLAN

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 4-4 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

Figure 4-4: Multimodal Roadway Network



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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, 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 4-6. 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
- Poʻipū Roundabout
- Intersection of Ala Kinoiki and Poʻipū Road

Figure 4-6: Projected Traffic, 2035



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.

The recommended list of projects within the South Kaua'i Planning District includes:

- Widening Kaumuali'i Highway to a divided 4-lane facility between Koloa Road and Kalaheo Town
- Kaumuali'i Highway Improvements east of Koloa Road
- Ala Kinoiki
- to Maluhia Road

Many of these recommended improvements are in harmony with the goals of improved multimodal roadway networks. However, the potential solution of widening Kaumuali'i Highway through Kalāheo town to a divided 4-lane facility would drastically impact the character of that town and the adjacent property owners. Condemnation of the adjacent properties would likely be required to widen the right-of-way as it is currently only 60 feet wide, and there would be little to no opportunity to include sidewalks or bicycle facilities without the removal of some structures. While the widening is one way to increase the capacity of highway, such widening is not desirable or practical and runs contrary to the goals and vision voiced for the South Kaua'i Community Plan.

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.
- vehicle use, and potential increased development along the coast), and;
- 4. If not, determine which roadway segments would operate above capacity (V/C ratio \ge 1.0) and why (e.g., is the need to be shifted to other modes of transportation to have them operate at V/C ratio \leq 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 Koloa Road in Koloa.

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. Similar to other traffic studies, a LOS grade is given to indicate the relative condition of traffic flow, much like grades at school. Typically, LOS A (V/C ratio < 0.60) indicates free-flowing conditions, LOS C (V/C ratio = 0.71-0.80) is indicative of a moderate level of congestion, and LOS F (V/C > 1.00) indicates significant levels of congestion (Fehr & Peers 2014). A copy of their full report is provided in Appendix D.

Widening Poʻipū Road to include bike lanes, sidewalks, and intersection improvements between Lāwa'i Road and

Construction of the northern leg of the Western Access Road as a 2-lane, signed shared roadway from Koloa Road

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 \leq 1.0) without adding a new coastal bypass road that is in shown the 2000 General Plan stretching from Port Allen to Poʻipū (potentially undesirable due to cost, negative impacts to Lāwa'i Valley, encouraging unwanted continued private

majority of the traffic through-traffic or traffic internal to the Planning District?). Calculate how many trips would

However, please note that this type of modeling is generally not suitable for an evaluation of specific intersection designs which require the use of detailed modeling for peak hour operations. Case in point, Fehr & Peers notes that the two intersection failures that were shown in the CH2MHill study – the first at the Poʻipū roundabout and second at the Ala Kinoiki and Poʻipū Road intersection – may be related to the shortcomings of the regional model they used since the regional models tend to do a poor job of analyzing localized intersection conditions. The fact that all the other segments around those intersections are operating at a good level of service (LOS C or better) further reinforces that this may be more of a model coding issue than an actual failure at the intersections. (Fehr & Peers, personal communication 2014)

Fehr & Peers calculated the existing roadway operations to be at or below capacity. See Table 4-1.

Roadway	Location Volume		Capacity	V/C Ratio
Kaumuali'i Highway	West of Papalina Road	16,300	19,800	0.82
Kaumuali'i Highway	Between Papalina Road and Kōloa Road	19,900	19,900	1.00
Kaumuali'i Highway	Kaumuali'iBetween Kōloa Road9,60019,8000.4Highwayand 'Ōma'o Road </td <td>0.48</td>		0.48	
Kaumuali'i Highway	Kaumuali'iEast of 'Õma'o Road14,30024,8000.58Highway </td <td>0.58</td>		0.58	
Maluhia Road	North of Ala Kinoiki	6,100	24,800	0.25
Ala Kinoiki	East of Maluhia Road	8,000	16,800	0.48
Ala Kinoiki	North of Poʻipū Road	5,500	16,200	0.34
Papalina Road	South of Kaumualiʻi Highway	5,300	15,800	0.34
Kōloa Road	Köloa RoadSouth of Kaumuali'i Highway6,00019,0000.32		0.32	
Kōloa Road North of Poʻipū Road		6,500	22,200	0.29
Poʻipū Road	South of Kōloa Road	5,200	19,000	0.27
Poʻipū Road	Po'ipū Road West of Ala Kinoiki 5,400 15,800 0.34		0.34	
Note: Deficient segments shown in bold Source: Table 3-2 (Fehr & Peers 2014) and Kaua'i 2035 Transportation Demand Forecasting Model (TDFM).				

Table 4-1: Existing Traffic

Additional analysis on existing traffic was done using Inrix data to provide another perspective on roadway operations. Inrix uses crowd-sourcing technology to record travel speeds and congestion levels. Data on travel speeds are obtained from GPS units, commercial vehicles, cell phones, and a variety of other sources. This data is then aggregated and reported through a centralized database. Analysis focused on Kaumuali'i Highway since it had the most reliable data within the Planning District. Based on the Inrix data, there is limited congestion on Kaumuali'i Highway as most vehicles are able to travel between 30 and 50 miles per hour during the peak morning hour (8 AM on a weekday) and peak afternoon traffic (4 PM on a weekday).

To understand what the baseline traffic would be for 2035, Fehr & Peers calculated what the traffic would be without the residential growth projected by SMS. Their analysis shows three segments of Kaumuali'i Highway exceeding capacity between Kalāheo and 'Ōma'o. See Table 4-2.

Table 4-2: 2035 Traffic Projections without Residential Growth Allocation

Roadway	Location	Volume	Capacity	V/C Ratio
Kaumuali'i	West of Papalina	21,600	19,800	1.09
Highway	Road			
Kaumuali'i	Between Papalina	22,200	19,900	1.12
Highway	Road and Kōloa Road			
Kaumuali'i	Between Kōloa Road	21,400	19,800	1.08
Highway	and 'Ōma'o Road			
Kaumuali'i	East of 'Ōma'o Road	21,800	24,800	0.88
Highway				
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 Poʻipū Road	11,100	16,200	0.69
Papalina	South of Kaumualiʻi	3,100	15,800	0.20
Road	Highway			
Kōloa Road	South of Kaumualiʻi	13,000	19,000	0.68
	Highway			
Kōloa Road	North of Poʻipū Road	9,500	22,200	0.43
Poʻipū Road	South of Kōloa Road	7,000	19,000	0.37
Poʻipū 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 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 capacities except the remaining segment of the highway which is nearing capacity (V/C ratio = 0.94). See Table 4-3.

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 Poʻipū Road	10,900	16,200	0.67
Papalina Road	South of Kaumualiʻi Highway	3,600	15,800	0.23
Kōloa Road	South of Kaumualiʻi Highway	14,200	19,000	0.75
Kōloa Road	North of Poʻipū Road	10,400	22,200	0.47
Poʻipū Road	South of Koloa Road	7,000	19,000	0.37
Poʻipū Road	West of Ala Kinoiki	12,000	15,800	0.76
Note: Deficient segments shown in bold Source: Fehr & Peers, 2014				

Table 4-3: 2035 Traffic Projections with Residential Growth Allocation

Similar to the CH2MHill study, Fehr & Peers 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.

Between 2007 and 2011, transit ridership on the route which uses Kaumuali'i Highway nearly doubled, increasing to almost 750 riders per day. This coincided with the last time gas prices in Hawai'i averaged more than \$4.00 a gallon in 2008 and again in 2011 when oil prices were well-above \$100 a barrel. According to AAA, Hawai'i hit \$4.00 a gallon for the first time on May 23, 2008 and stayed above that until October 12, 2008. During that summer, the 50th state hit its high of \$4.50 (CBS News 2011). Today, gas prices on Kaua'i are already reaching between \$4.69 to \$4.95 a gallon (The Garden Island 2014), which may encourage drivers to switch to transit, especially those commuting long distances to and from work.

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)

Service can also be made more frequent to increase capacity and convenience to riders. Currently the mainline routes 100 and 200 run hourly except for the early morning eastbound and a 4:00 PM westbound service. This may not be frequent enough to make the service convenient for potential riders.

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 of 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 4-4 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 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

Public opinion regarding public transit was collected at public workshops and with "wishcards," where community constituents shared their observations and visions for the bus system. Of all comments received, the top concerns regarding public transit 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 Koloa Town to Poipū and its beaches.



Bus stop in Kalāheo.

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, Koloa 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: "Kukui'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 4-5.

- between buses could be shortened to 20 minutes depending on demand.
- SPAs.
- and improve cost-efficiency.

4.3.3 Parking

While parking is essential to support businesses, particularly in the transition when there is not adequate public transit service or safe pedestrian and bicycle facilities built, providing too much parking can work against the desired multimodal shift away from private vehicle use. Parking will still be required as part of the FBC, however, it will have reduced requirements for vehicle parking and new requirements for bicycle parking. It will also have guidelines on shared parking and opportunities to make adjustments to parking requirements based on different criteria such as the number of adjacent on-street parking spaces and access to transit.

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 Koloa 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 Koloa 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 Koloa 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.

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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

Koloa Shuttle: Shift the southbound leg of the route from Koloa Road to 'Oma'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

Poʻipū-Kōloa Shuttle: Work with PBRA to extend and expand the Intra-Poʻipū Shuttle service to daily operations and provide a stop in Koloa Town to serve visitors and residents alike. Adjust service hours to maximize ridership



4.3.4 Conceptual Intersection Improvements and Street Sections

The following conceptual intersection improvements and street sections are organized by community and keyed to the maps for Kōloa, Kalāheo and Poʻipū. 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 Koloa

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. Poʻipū 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 Poʻipū Road Charrette held in May 2013. Figure 4-7 is the key map for road and intersection improvements in Kōloa.



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 4-8 and Figure 4-9 provide an overview of the potential improvements that could be made to the existing right-ofway (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 4-10.

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 4-11).

An example of where similar pedestrian and bioswale improvements were made can be seen in Figure 4-31 and Figure 4-32 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 4-12 and Figure 4-13. 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 4-14). 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.

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 4-15. 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 Kalaniana'ole, Princess Victoria Kūhiō Kinoiki Kekaulike. She was the daughter of Kaua'i's last king, Kaumuali'i, and sister of Queen Kapi'olani.

Figure 4-8: Conceptual Streetscape Improvements for Kōloa Town, Alternative 1



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Figure 4-9: Conceptual Streetscape Improvements for Koloa Town, Alternative 2





Figure 4-11: Kōloa Road with Parallel Parking (Kōloa Key Map 1)



Figure 4-12: Weliweli Road Approaching Kōloa Road (Alternative 1, Kōloa Key Map 2)





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Figure 4-13: Weliweli Road Approaching Kōloa Road (Alternative 2, Kōloa Key Map 2)



5' 7' 11' 6' Land- Bike scaped Lane Bike Side-Vehicle walk Lane Bioswale Setback 60' Right Of Way 10' 9' 5' Shared Use Land-Shoulder Path scaped Bioswale 1 Setback 60' Right Of Way

Figure 4-15: Ala 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.





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 4-19).

Another potential modification to the proposed conceptual plan shown in Figure 4-17 includes moving the County bus stops on Papalina Road to Kaumuali'i Highway to reduce travel time lost on the Kekaha-Līhu'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 'Õpū 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.

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 4-18 and Figure 4-20). 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 4-21). 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 4-21). 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.

At the approach to Hokua Road from Līhu'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.

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.

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 4-22. 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 4-23. 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 4-17: Conceptual Streetscape Improvements for Kaumuali'i Highway and Papalina Road (Kalāheo Key Map 5)



Figure 4-18: Conceptual Streetscape Improvements for Kaumuali'i Highway Fronting Commercial Uses (Kalāheo Key Map 6) and Hokua Road

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5 11' 11' 11' 6' 6' 6' 4' 4' Bike Tree Side Well₈,walk Sidewalk ^{walk}8,Well Sidewalk Bike Lane Left-Turn Travel Travel Lane ~60' R.O.W. Lane Lane

Figure 4-19: Kaumuali'i Highway with Left Turn Lane and Bike Lanes (Kalāheo Key Map 5)

Figure 4-20: Typical Kaumuali'i Highway with Bike Lanes and On-Street Parking (Kalāheo Key Map 6)











4.3.4.3 Po'ipū

As noted earlier, street sections were not drawn for Poʻipū Road as improvements to Poʻipū 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 Poʻipū Road Charrette. Examples of the proposed street sections developed during the Poʻipū Road Charrette are shown in Figures 4-25 to 4-27 with an illustrative rendering provided in Figure 4-28.

The only additional design feature to consider adding are landscaped bioswales within the 120 foot-wide Poʻipū 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 Poʻipū Beach Park parking lot and Kāneiolouma. 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 Poʻipū Road. The bioswales could be landscaped with native and appropriate Polynesian-introduced plants that support interpretive features planned for this major roadway.

Figure 4-24: Po'ipū Key Map



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Figure 4-25: Poʻipū Road, Section located in Kōloa Town near Kōloa Road (Poʻipū Key Map P1)



Figure 4-26: Po'ipū Road, Section located near Blakes Lane (Po'ipū Key Map P2)





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 4-29).

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 4-30). 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.

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.

Figure 4-28: Po'ipū Road, Resort Section Rendering (Po'ipū Key Map P3)





Include traffic calming measures such as tighter turn radii, and safe pedestrian crossings

intersecting Ala Kalanikaumaka. The construction of the connection through to Ala Kalanikaumaka is triggered when Phase II of Kōloa Estates starts construction. The 60 foot right-of-way to connect the road through to Ala Kalanikaumaka has already been subdivided (TMK 2-6-14:42), but is still owned by Kukui'ula Development Company, LLC.

Community concern has been raised regarding increased traffic speeds and reduced safety along Lopaka Paipa Boulevard once the connection is made. However, other community members have called for the much needed eastwest 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.



4.3.4.4 Lopaka Paipa Boulevard Lopaka Paipa Boulevard Connection to Ala Kalanikaumaka

(12). Roughly halfway between Kōloa and Poʻipū, lies Lopaka Paipa Boulevard.

Currently, Lopaka Paipa Boulevard stops at a deadend, roughly 250 feet short of

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 (Figure 4-31). Native and Polynesian-introduced plants could be installed and interpreted to add an educational component.

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. As an example, the Holo Holo Koloa Scenic Byway will have 18 signs installed along its route. It has the same logo as the other Hawai'i Scenic Byways recognized by the State and will help educate residents and visitors alike.

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.

Figure 4-31: Inviting Streetscape with Angled Parking and **Bulbouts at the Corners**

Figure 4-32: Landscaped Bulbouts with Bioswales and **Street Furniture**



4.3.6 Maintenance

Maintenance of the proposed streetscapes as well as the designs being built in the Līhu'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

To provide a consistent streetscape and aid in wayfinding, the following is a list of recommended street trees for the major roadways. The use of natives and the continuation of existing trees are the basis for the selections. Different options are provided to assist with selection at the time of installation and provide flexibility should availability of certain trees be limited.

Roadway	Street Tree
Kōloa and Maluhia Roads within Kōloa Town SPA	Monkey Pod (Samanea saman), Royal Poinciana (Delonix regia), or Mānele (Sapindus saponaria)
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
Poʻipū Road (between the roundabout and Grand Hyatt)	Monkey Pod (Samanea saman) or True Kou (Cordia subcordata)
Kaumuali'i Highway in Kalāheo	Lama (<i>Diospyros sandwicensis</i>) or Lonomea (<i>Sapindus oahuensis</i>)
Hoʻowili Road	Loulu (Pritchardia aylmer-robinsonii, P remota)
Kapili Road	True Kou (<i>Cordia subcordata</i>) or Milo (<i>Thespesia populnea</i>)

Table 4-4: Recommended Street Trees

4.4 KAUA'I NATIVE PLANTS & EXCEPTIONAL TREES

4.4.1 Kaua'i Native Plants

The following are plants native to Kaua'i that should be considered in any landscape design or installation. Those which have been found as fossils in the Makauwahi Cave Reserve are known to be native or introduced early in human history to the South Shore (Burney et al 2001) and are noted with a double asterisk (**). Natives 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: Kaua'i Native Plants

COMMON NAME	BOTANICAL NAME
PALMS	
Loulu**	**Pritchardia aylmer-robinsonii, **P remota, P. hardyi, P. minor, P. waialealeana
TREES	
Kukui**	**Aleurites moluccana
Коа	Acacia koa
Koaie (Koai'a)	Acacia koaia
True Kamani	Calophyllum inophyllum
True Kou**	**Cordia subcordata
Lama	Diospyros sandwicensis
'Ōhi'a Lehua	Metrosideros polymorpha
Munroidendron*	*Munroidendron racemosum
Hala**	**Pandanus tectorius
Papala Kepau	Pisonia spp.
Hoʻawa	Pittosporum kauaiensis, P. napaliensis
Alahe'e	Psydrax odorata
Lonomea**	**Sapindus oahuensis
Mānele	Sapindus saponaria
Māmane	Sophora chrysophylla
Milo	Thespesia populnea
SHRUBS	
Maiapilo**	**Capparis sandwichiana
'Akoko	Chamacyse celastroides
'A'ali'i**	**Dodonea viscose
Na'u*	*Gardenia brighamii
Hau Kuahiwi	Hibiscadelphus distans
Native Hibiscus*	Hibiscus kokio saintjohnianus (St. John's and Yellow St. John's), H. waimeae, *H.w. spp. Hanerae, *H. immaculatus, *H. clayi, H. kahilii, Kokia kauaiense
Nehe	Lipochaeta succulent, Lipochaeta conata

COMMON NAME	BOTANICAL NAME	
Kulu'i*	*Nototrichium sandwicensis	
Mokihana (Island Flower)	Melicope anisata	
Naio**	**Myoporum sandwicense	
'Ulei	Osteomeles anthylidifolia	
Alahe'e	Psydrax odorata	
Hao**	**Rauvolfia sandwicensis	
Naupaka**	**Scaevola taccada	
'Akia**	**Wikstroemia uva-ursi	
ʻlliau	Wilkesia gymnoxiphium	
GROUND COVERS		
'Uki'uki	Dianella sandwicense	
Pa'u o hi'iaka**	**Jacquemontia ovalifolia subsp. sandwicensis, Plumbago zeylanica	
llie'e**	**Plumbago zeylanica	
VINES		
'Awikiwiki	Canavalia kauaiensis, Vigna marina	
GRASSES		
'Ahu'ana	Cyperus javanicus	
Makaloa	Cyperus laevigatus	
Pili	Heteropogon contortus	
Akiaki	Sporobolus virginicus	
FERNS		
ʻlhiʻihilauakea	Marsilea villosa	
Palapalai	Microlepia strigosa	
Kupukupu	Nephrolepis cordifolia	
Notes: *endangered species (specifically marked under botanical name) **Found as fossils in the Makauwahi Cave sediments or close relative (Burney et al. 2001)		

4.4.2 Exceptional Trees

The Exceptional Trees noted in 3.2.5 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. In addition, the monkey pod trees along Kōloa Road between Poʻipū and Waikomo Roads and Poʻipū Road between Kōloa and Waikomo Roads should 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.

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NATURAL & CULTURAL HERITAGE RESOURCES 4.5

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 4-33).

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.

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 (see Figure 4-1). 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.

- 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 Koloa and Poʻipū. 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

- 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.
- recreational public health, not for watershed or nearshore environmental quality.
- 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 exits.

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

e. Conduct marine water quality monitoring in context with the larger watershed area. Although the water quality of the popular beaches in Poʻipū is monitored by the Department of Health, the monitoring program is primarily for

Test for cesspool contaminants during marine water quality monitoring. The disposition and effect of cesspool



Figure 4-33: Areas for Protection



The natural landscape (Mount Kahili, Hā'upu Ridge, Māhā'ulepū, coastal pali and dunes, gulches, and shoreline areas) and cultural landscape (Koloa Field System, Kaneiolouma, Nomilu Fishpond, Lawa'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).
- Continue to support the stewardship and restoration of Kāneiolouma. f.
- Restore or reuse the Koloa Mill structures if economically feasible.
- h. Protect and restore the Nomilu 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, Nomilu also was known to have the finest salt.
- Protect Kukuiolono's geological, cultural, and recreational asset. It is the largest cinder cone in the Planning i. 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

- 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.
- Develop interpretive story of Koloa Field System. The 1978 Koloa-Po'ipū-Kalāheo Development Plan proposed с. leveraging Waikomo Stream for streamside enhancement through Koloa Town. This revitalization could be further reinforced with interpretation of the Koloa 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 Koloa 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.
- Create a network of South Kaua'i scenic byways building from those identified in the Holo Holo Koloa Scenic Byways. Promote it as the South Kaua'i Heritage Corridor.
- 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.
- archaeological sites. These maps are available in geographic information system (GIS) format.
- with surface openings.
- and Māhāʻulepū dunes) that have documented burials include Kukuiʻula 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 4-34. However, a comprehensive emergency preparedness plan should be developed.

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.
- Minimize coastal hazard risks through planning and development standards. 2.
- 3. Avoid or minimize coastal resource impacts when addressing risks to new or existing development.



Supplement the GP Heritage Resources Map for Koloa-Poʻipū-Kalaheo 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

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

d. Identify probable burial areas on the Hawaiian Footprint map. Probable areas could include the dunes fringing Keoneloa Bay (particularly west side), Kāmala Point near Kawailoa 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 Keoneloa dunes

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:
 - Coastal hardening, which can lead to exacerbating erosion and beach loss
 - Asset protection, such as building higher levies (which may still fail in extreme events) 0
 - 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.
- Develop a preparedness certification program for communities as a systematic guide. С.
- 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.

- funded projects.
- 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.
- 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

- Provide adequate emergency shelter capacity for residents and visitors. Verify if existing shelter capacity can a. 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 Koloa and Kalaheo Schools for hazard mitigation funding to meet hurricane shelter standards.
- Designate emergency shelters to serve the west (Kukui'ula 20-ac park), central (Koloa School and Knudsen Park), с. 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.
- Identify specific evacuation routes and meeting locations. e.
- Identify emergency bypass routes during rockfall events, flooding, and other major roadway blockages. f.

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).
- Tax, and TIF (Tax Increment Financing).
- (DLNR/ACOE/DOH/EPA).
- Identify and mitigate rockfall hazards especially along Kaumuali'i Highway in the vicinity of Kalāheo and Lāwa'i. d.
- Ensure periodic inspection and management of all reservoirs and dams to avoid breach. e.
- Maintain undeveloped areas to minimize risk and loss to wildfire. f
- Promote and provide for beach re-nourishment for coastal areas suffering erosion. g.
- 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.

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f. Establish a local reserve fund for public mitigation measures, and incorporate hazard mitigation into all publically

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

Develop one-time programmatic approval for beach nourishment with subsequent expedited checklist review

Figure 4-34: Emergency Evacuation Routes & Shelters



PARKS & RECREATION 4.6

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 (*).



Kukuiʻula Boat Harbor.

Park and Recreational Facilities 4.6.1

- *Prioritize resources at Po'ipū Beach Park including expanding the beach park areas and ocean recreation a. 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 ٠
 - Outdoor amphitheater
 - Gymnasium ٠
 - Swimming pool ٠
 - Public bathrooms and drinking fountains at smaller neighborhood parks such as 'Ōma'o
 - Similarly, the top 10 preferences for new facilities for the Koloa 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 7. Dog parks (off-leash)
 - 2. Picnic facilities and pavilions
 - 3. Recreation beaches 8. Skate parks
 - 4. Children's playground

5. Camping facilities

- 9. Passive (leisure) parks 10. Tennis courts
- *Install playground equipment at Kalāheo Neighborhood Center. d.
- *Expand Koloa Neighborhood Center by enclosing the space between the two existing structures. e.
- *Expand and improve the parking area at Spouting Horn Park.
- 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 Koloa-Poʻipu 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 Poʻipū Road and Ala Kalanikaumaka.
- 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.
- 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

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.
- *Continue to support the cultural caretaker group at Kāneiolouma. с.
- d. Fund beach replenishment as necessary at Poʻipū Beach Park.
- Schedule and budget regularly planned improvements to facilities. e.
- Promote an adopt-a-park or adopt-a-trail program. Involve local business and community groups. f.
- Seek grants and alternative funding sources for park improvements. Seek visitor-industry funding assistance for g. 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.
- 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 Māhāʿulepū coastline.
- Work with the landowner to maintain interim public access to the Māhā'ulepū coastline as the priority. g.
- h. Manage access where necessary to preserve Māhā'ulepū's natural and cultural resources and to ensure public safety.
- Follow up on the recommendations from the Annual Report to the Kaua'i County Council and Mayor Carvalho i. from the Public Access, Open Space, Natural Resources Preservation Fund Commission.

organizations such as the Hawaiian Islands Land Trust and Trust for Public Lands to preserve the coastal lands.

AGRICULTURE 4.7

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.

Local Food Production 4.7.2

- 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.

Economic Sustainability 4.7.3

- 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.
- 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.

Important Agricultural Lands 4.7.4

- 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

- 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
- other tools and methods.
- b. In addition, follow through on the five major categories of recommendations and their proposed actions:
 - 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
- 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...."

(2) Real property tax systems that support the needs of agriculture, including property tax assessments

(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

(1) Develop County-level incentives program for IAL designation, specifically to encourage food

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



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 Poⁱipū. 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 Poⁱpū 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.

Sustainable Resorts 4.8.1

- a. Establish Poʻipū as a world-class and world-leading sustainable visitor destination. Work together through PBRA to distinguish and market Poʻipū 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.
- Use renewable energy to power resorts. e.
- Encourage use of electric vehicles recharged by renewable energy.
- Support local food production by sourcing locally.
- Include bus pass as part of resort fee. h.
- Provide shuttles to/from airport. i.
- Provide car rentals/car share programs at hotels.
- Reestablish a minimum pedestrian and bicycle path from Po'ipū Beach Road to Ho'one Road to improve k. community connectivity.
- Review demand for new visitor units compared with permitted units constructed every five years.

Eco-Friendly Experiences 4.8.2

- 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.
- Minimize impacts from visitor activities and accommodations on residential communities, public infrastructure, с. and community facilities.
- d. Increase farm-to-table dining experiences and farmers markets.
- Promote health and wellness retreats. e.
- Maximize residents' benefits from the visitor industry by providing kama'āina discounts year round.

- g.
- visitors interested in sustainable tourism.
- fishing/boating.
- on the rich natural and cultural heritage of the area.



Kukui'ula Farmers Market.

SOUTH KAUA'I COMMUNITY PLAN

For visitors to Po'ipū, a new Hapa Road trail could offer an appealing option to travel to Koloa 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, Kukui'ula is an ideal area to promote ecotourism. A bicycle route between important sites could further encourage

The numerous reservoirs in the Planning District are sources for irrigation and may have potential for ecotourism

Maintain managed access to Māhā'ulepū but consider providing a comfort station and visitor education resources

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.
- 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.



Kōloa Mill Site.

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.

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.
- Coordinate with developers of new projects to provide adequate service.
- d. Protect potable water wells and other drinking water resources from contamination.

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.
- Coordinate with commercial establishments and multi-family complexes in Koloa and Kalaheo to comply with с. EPA ban of large-capacity cesspools.
- d. The future industrial area should be served by an innovative wastewater treatment system or the regional plant.
- Monitor the disposition and potential effect of cesspool seepage and injection wells on the groundwater and e. nearshore water quality.

4.10.4 Drainage

- a. Prepare a drainage study for the Poʻipū 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.
- County Charter, and DOW is responsible for water planning related to the domestic system.

4.10.5 Solid Waste

- materials.
- с. transportation costs. Coordinate with resort and agricultural users.
- d. Support composting of food wastes for reuse as soil amendments.
- Support a clearinghouse of collecting leftover food from area restaurants and resorts to feed the hungry. e.
- 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



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

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

Consider coordinating green waste processing and distribution of mulch within the Planning District to reduce

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.

Wat

4.11 ECONOMIC DEVELOPMENT

The resort area of Poʻipū-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 Koloa and Kalaheo.
 - 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).
- 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.
- Rezone to industrial an area in proximity to the farmlands that would allow other light industry, including с. 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;
- Assist with nonpoint source monitoring and compliance through NRCS conservation plans and regionallysupported 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.
- 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.
- County Charter, and DOW is responsible for water planning related to the domestic system.
- the Planning District's rich collection of natural and cultural points of interests:
 - throughout the Planning District;
 - of the network system;
 - equipment suppliers and rentals, health trainers, therapists, senior housing, rehabilitation);
 - 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;
 - 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.
- alleviate housing crowding conditions.

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

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

Promote and expand the Heritage Scenic Byway network system as a fun, healthy, and educational means to access

• Expand the Holo Holo Koloa 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

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

• Support the growth of a health and wellness industry attracted by the trail system and climate (e.g.,

• Respect the culture by providing education and culturally-appropriate interpretation of the area that ties

Support as necessary with advance funding for regional studies and/or establishment of innovative

b. Ensure the workforce has access to a range of housing types, reflective of chaning demographics and to help