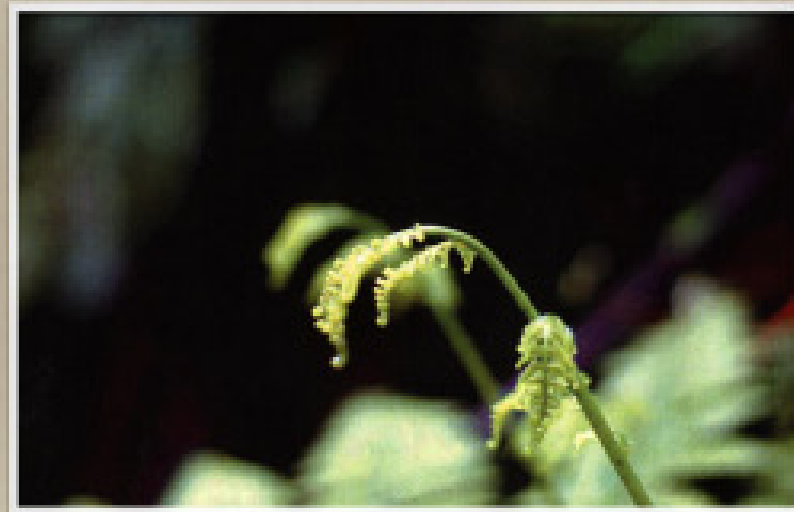
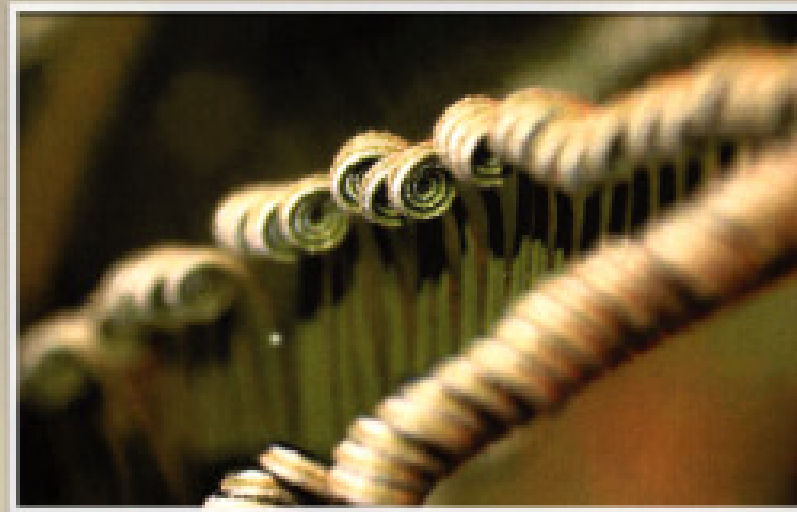


KAWAIHAE



REGIONAL PLAN

September 2010

DEPARTMENT OF HAWAIIAN HOME LANDS

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1. Introduction

The mission of the Department of Hawaiian Home Lands (DHHL) is to effectively manage the Hawaiian Home Lands Trust and to develop and deliver lands to native Hawaiians. To accomplish this, DHHL works in partnership with government agencies, private landowners, non-profit organizations, homestead associations, and other community groups. Regional plans provide the means to solidify visions and partnerships that are essential to effectively manage Hawaiian Home Lands trust lands for the betterment of native Hawaiian beneficiaries.

This regional plan is one of twenty (20) regional plans that DHHL is developing statewide. In these regional plans, DHHL takes on a leadership role in the region, working to strengthen the growth of the area, developing partnerships to leverage diverse resources and capital investment; and fostering beneficiary participation in determining the future direction of the homestead community. The regional plans provide the Department and the affected homestead community opportunities to assess land use development factors, identify issues and opportunities, and identify the region's top priority projects slated for implementation within the next three (3) years.

WHAT ARE REGIONAL PLANS?

Regional Plans are part of DHHL's 3-tiered Planning System (see Figure 1). At tier one is the General Plan which articulates long-range Goals and Objectives for the Department. At the second tier, there are Program Plans that are statewide in focus, covering specific topic areas such as the Native Hawaiian Housing Plan and a Native Hawaiian Development Program Plan. Also at this second tier are the Department's Island Plans that identify the Department's Land Use Designations per island which function similar to the counties' land use zones. The regional plans are located at the third tier in the Department's planning system which focuses at the community/regional level. The regional plans apply the goals, policies, and land use designations to specific geographic regions. The regional plans are a means to:

- Identify data -- people, lands, and infrastructure of homestead communities and the surrounding region;
- Identify what DHHL and other landowners are planning to do;
- Provide the primary mechanism for beneficiary input in the development of their homestead communities;
- Identify issues and potential projects; and
- Identify Priority Projects determined by the Department and homestead community.

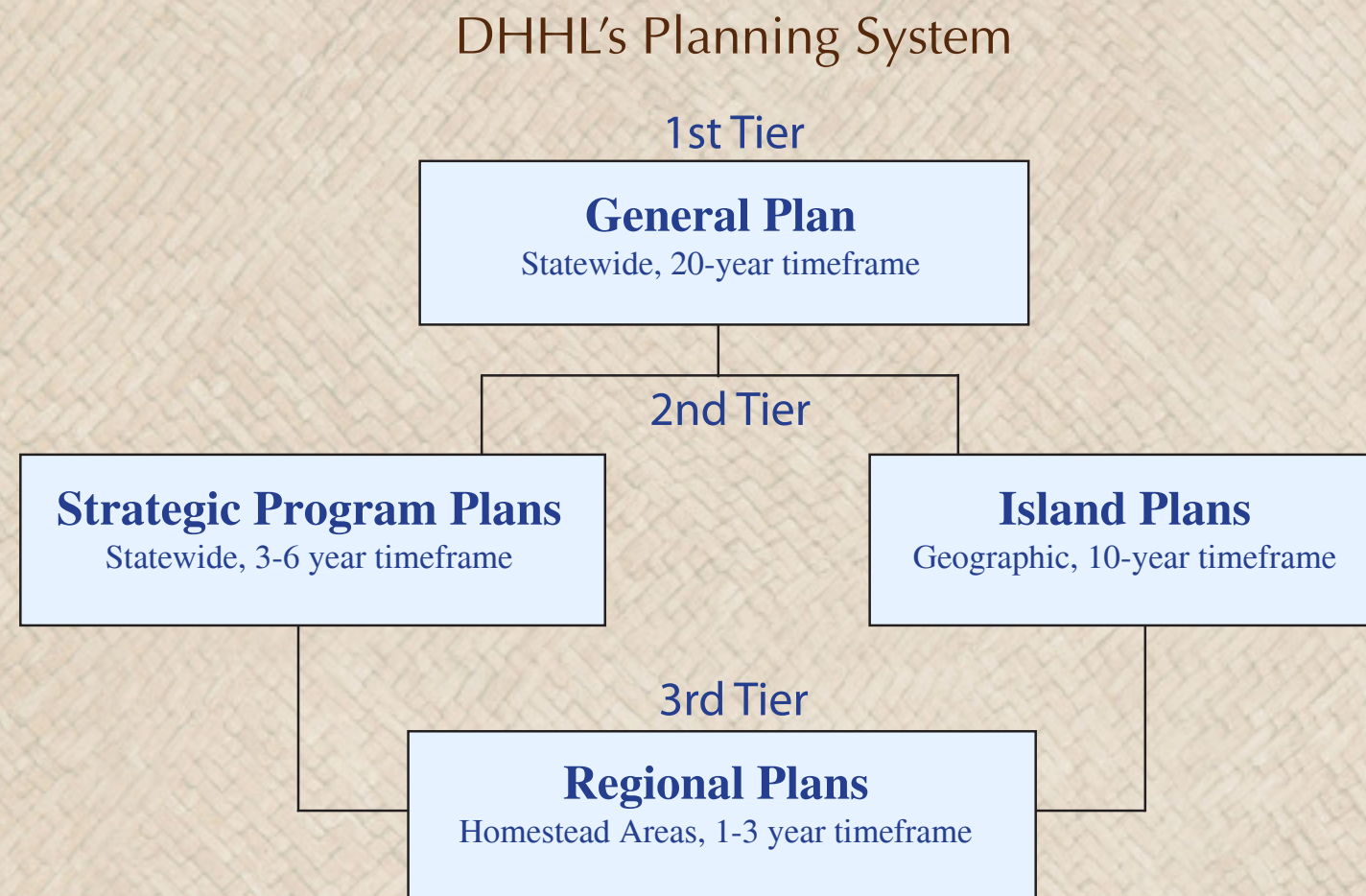


Figure 1. DHHL's Planning System



Regional Plan Process

HOW ARE REGIONAL PLANS DEVELOPED?

The regional plans are developed in conjunction with lessees of the region as well as regional stakeholders (landowners, agencies, other organizations) in a series of planning meetings as illustrated in Figure 2. During these meetings, issues and opportunities that should be addressed in the regional plan are identified and a list of potential projects is developed to address those issues and opportunities. From this list, lessees determine by consensus their top five (5) priority projects that are written up with project details, budget estimates, and other pertinent project planning information. Draft regional plans are then subject to the approval of the Hawaiian Homes Commission, which means that the Commission and Department officially support the priorities identified in the regional plan.

Upon approval, the homestead community, the Department, and other development partners can seek necessary funding and pursue the implementation of the Priority Projects. The Priority Projects are a key component of aligning support and providing focus to efforts to develop the region. Finally, since DHHL knows that regional development is a dynamic process with constantly changing opportunities and emerging issues, regular regional plan updates are built into the planning process. In this way, regional plans are updated as needed, which generally have amounted to biennial updates (one update every two years), in order to keep abreast of changing conditions and new opportunities.

HOW ARE REGIONAL PLANS USED?

As a compilation of existing plans and proposed projects for the region, the regional plan helps to coordinate the orderly development of regional infrastructure improvements. With the addition of lessee input in the process, the regional plans become a powerful tool to focus energies and efforts, align interests, and secure funding for the top priorities identified in the regional plan. In this way, regional plans have become a critical tool to unify and support our beneficiary community.

The Regional Plan Development and Update Process



Figure 2. The Regional Plan Development and Update Process



DHHL has participated in a number of successful partnerships, a few of which are highlighted below.

PUBLIC FACILITIES PARTNERSHIP

DHHL participated in a number of partnerships involving public facilities and community resources. The most notable partnerships brought together Hawaiian agencies and non-profit organizations into a multi-service complex where a broad range of programs are housed to serve the public. Such multi-service complexes have been built on Hawaiian Home Lands in partnership with Kamehameha Schools, Queen Lili'uokalani Children's Center, Alu Like, Papa Ola Lōkahi, the Office of Hawaiian Affairs, Hawaiian community organizations, and the counties.

These multi-service complexes are housing preschools, offices, meeting facilities, health clinics, and activity centers. For example, the Keaukaha homestead on Hawai'i is served by a County Park on DHHL land, next to a gymnasium and elementary school, DHHL and OHA offices, and a Kamehameha preschool.

Through a series of management partnerships with DLNR and the Nature Conservancy, unique ecosystems and historic sites are being protected. Examples include the Hakalau Forest Reserve, the 'Āina Hou Management Area, the Pālā'au and Mo'omomi preserves, the Kalaupapa peninsula, and the Kamā'oa-Pu'u'eo National Historic District where koa forests, endangered plants and animals, and native species are being protected for future generations.

INFRASTRUCTURE PARTNERSHIP

DHHL has partnered with county governments and utility providers on infrastructure improvements that benefit the entire community. DHHL has participated in water-system development with the counties by providing funding, land easements, and access to federal and state programs. Examples include the extension of the Lower Kula Water System on Maui, the Waimea Irrigation System and the Maku'u Water System on Hawai'i, and the Wahiawā-Waipahu water system on O'ahu.

DHHL has also provided numerous easements over its lands to electrical, water, telephone, and cable companies to service both homestead areas and the general public.



RESIDENTIAL PARTNERSHIP

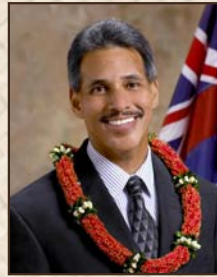
Through partnerships, DHHL has reduced the cost of homes to low-income beneficiaries. DHHL has done this by sharing in the cost of infrastructure, helping to secure tax credits, and using self-help methods of construction. Partnerships in Kapolei resulted in 70 rent-to-own units constructed by Mark Development using low-income tax credits and 45 self-help homes constructed with Honolulu Habitat for Humanity. In these types of partnerships, DHHL provides the land, secures federal grants, and provides access to, or assistance in, acquiring tax credits, subsidies, or other financing.

DHHL BRINGS TO THESE PARTNERSHIPS:

- Land acquisition opportunities
- Potential use of tax-exempt financing
- Access to legislative appropriations
- Access to federal funding such as HUD, USDA, SBA
- Flexibility in the application of development standards, zoning, and design
- Cultural understanding and resources



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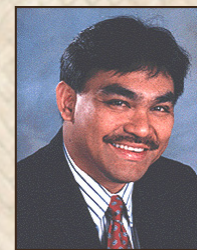
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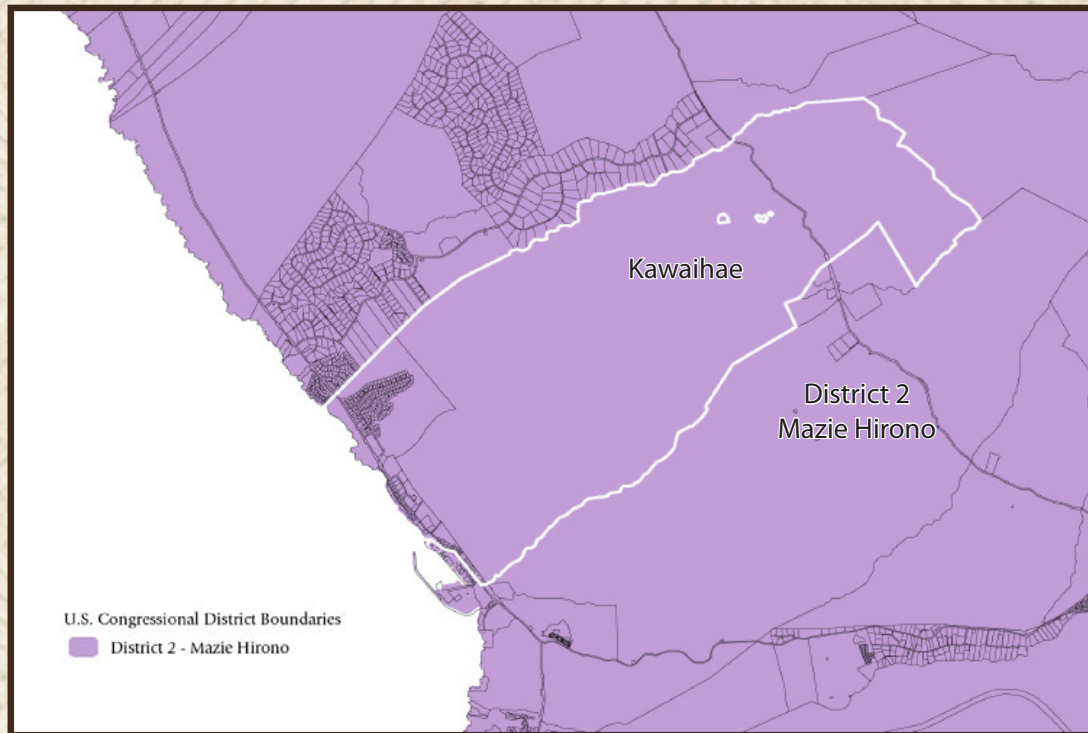
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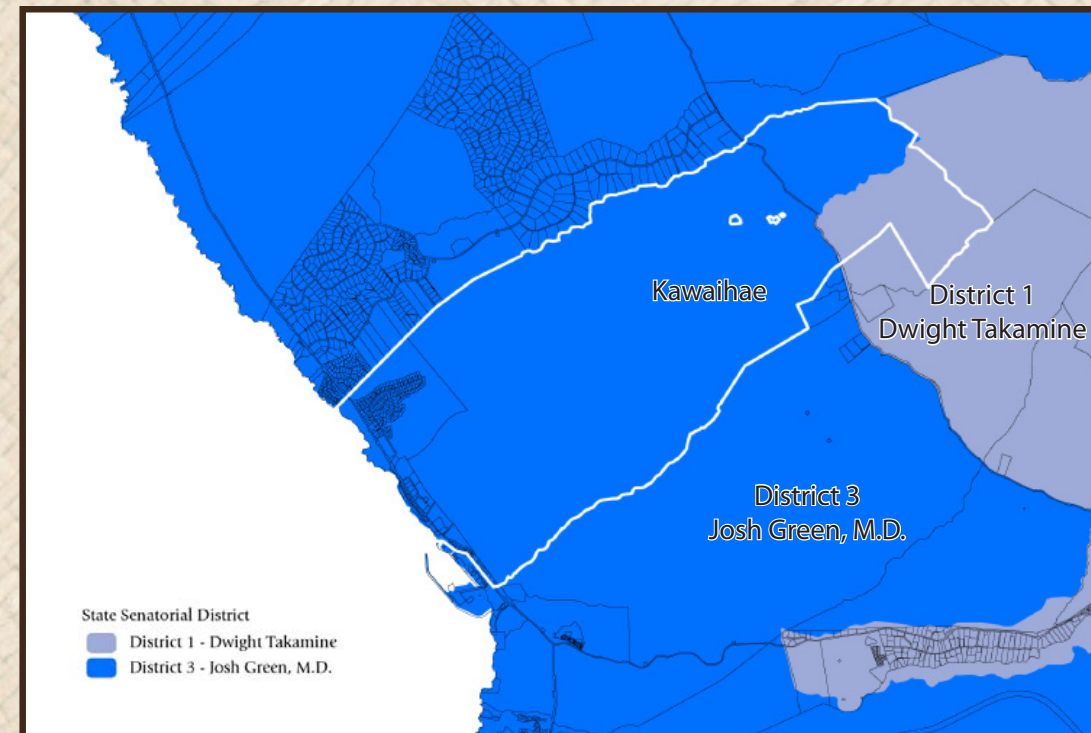
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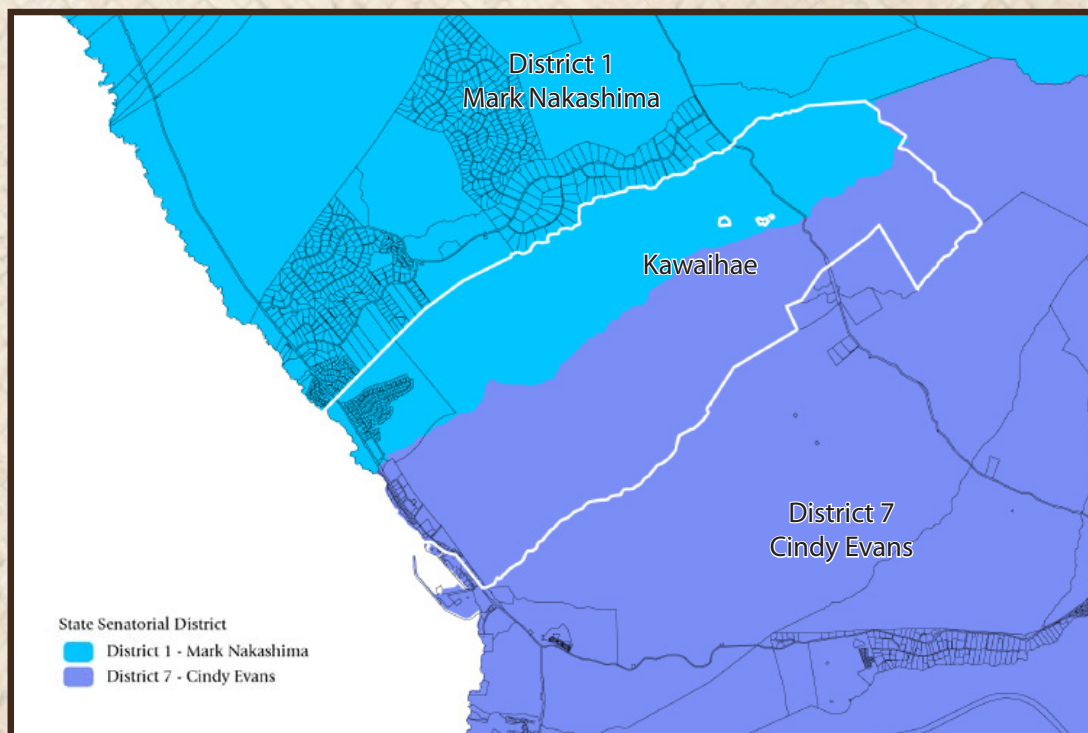
Political Boundaries



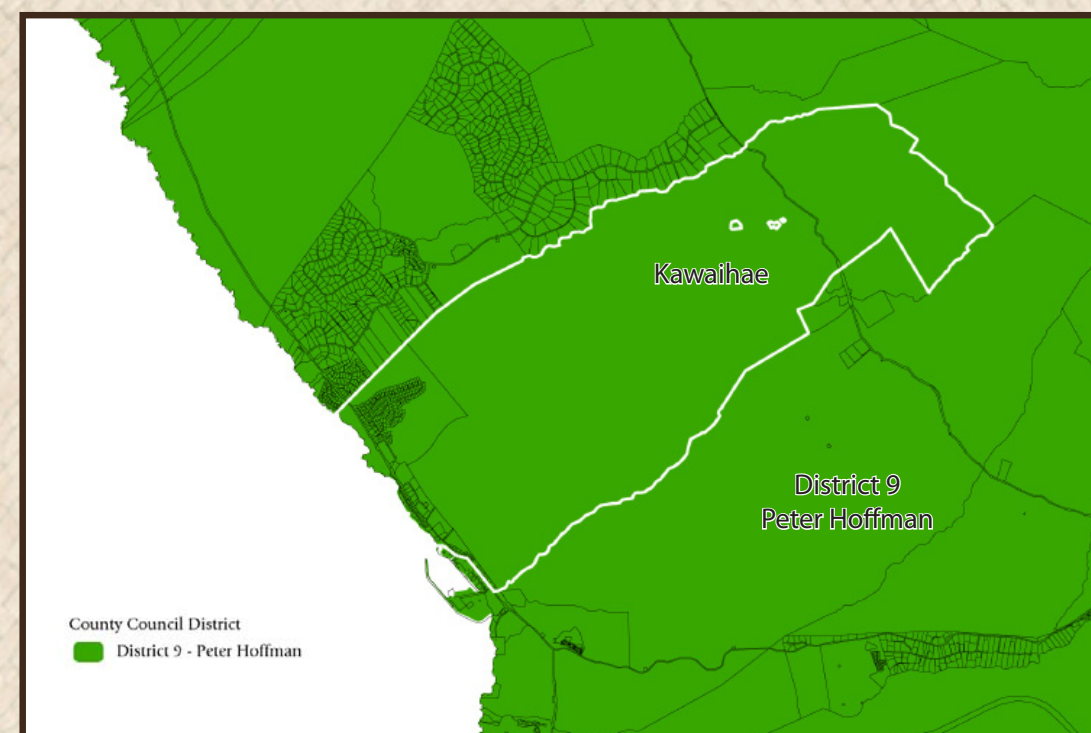
United States Congress Districts



State Senate Districts



State House of Representatives Districts



Hawai'i County Council Districts

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DHHL Commissioner
Chairman



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Commissioner



Donald S.M. Chang
DHHL - O'ahu
Commissioner



Stuart Hanchett
DHHL - Kaua'i
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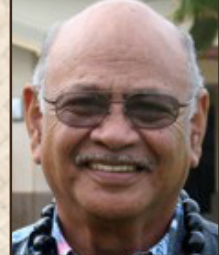
Malia P. Kamaka
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Francis K. Lum
DHHL - O'ahu
Commissioner



Trish Morikawa
DHHL - O'ahu
Commissioner



Henry Tancayo
DHHL - Moloka'i
Commissioner



Alapaki Nahale-a
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Hawaiian Homestead Leaders



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Nā Pua Ka 'Ilima



Lani Akau
Nā Pua Ka 'Ilima



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Kamehameha Schools



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Nut Company



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Safety Committee

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Kohala Ranch Water Company

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HMSA

John Richards
Kahua Ranch

Les Goya
Queen Emma Land Company

Rick Vidgen
Big Island Carbon, LLC

Daniel Kawai'ae'a
National Parks Service

Dan Bowles
Kohala Ranch Water Company

John Poggensee
Oasis Enterprises, Inc.

Stanley Tamura
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Hawai'i Department of
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Kawaihae Canoe Club

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History & Cultural Aspects of the Area

The high elevation of Waimea is in stark contrast to Kawaihae’s warm environment. Kawaihae literally translates to “water of wrath.” The origin of the meaning is derived from a past conflict that ignited over access to a water source.

Kawaihae was the site of a key turning point in Hawaiian history. It was here in 1790 that Keōua Kuahu‘ula, Kamehameha’s main rival on the Big Island met his end. After his army suffered heavy battle losses in Hāmākua and Waipi‘o, Keōua met Kamehameha in Kawaihae to make peace. Once Keōua landed at Kawaihae, one of Kamehameha’s warriors killed Keōua with a spear. Keōua’s body was taken to the newly consecrated Pu‘ukoholā Heiau to appease Kūka‘ilimoku, the God of War. Once the threat of Keōua was removed, Kamehameha went on to continue his conquest to unite the Hawaiian Islands.

In his pursuit to unify the Hawaiian Islands, Kamehameha utilized the help of foreign advisors. One of those foreigners was John Young. Young was originally shipwrecked in Hawai‘i along with Isaac Davis, another shipwrecked sailor. Kamehameha took Young and Davis as advisors. After Kaumuali‘i of Kaua‘i handed over power to Kamehameha in 1810, Young was given lands in Kawaihae for a home. The existing Pu‘u Koholā Heiau National Historic Site also preserves John Young’s original home.

Though located in a relatively barren land, Kawaihae was crucial to the economy during the reign of Kamehameha I. Kamehameha controlled all trade with European and American ships. Permission from Kamehameha was required before any trading could be conducted. Ships would often drop anchor off of Kawaihae to receive the king’s blessing when he was in the area. Secondly, Kawaihae’s close proximity to Waimea’s fertile land was convenient for merchant ships wanting to refit or re-supply their ships.

Historically, Kawaihae provided a hospitable environment used for various agricultural purposes. The landscape was once abundant with kiawe trees, but several fires has left the lands barren. Early settlement of Kawaihae as a fishing community shows it has long been tied to the ocean. The area is known as

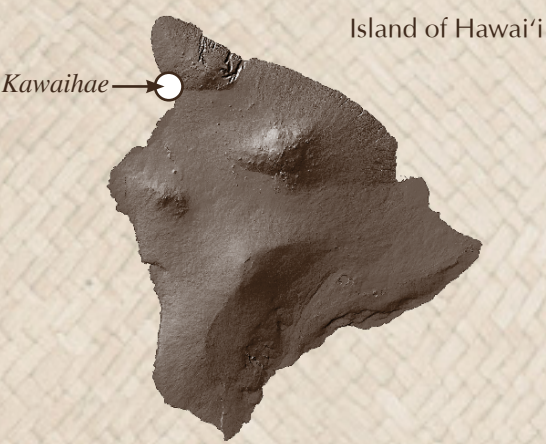
‘Ike ‘ia e mākou ‘o Kawaihae I ke kai nehe ‘ōlelo me ka ‘ili‘ili	We saw Kawaihae Where the sea whispers over the pebbles
Kau aku ka mana‘o no Puaka‘ilima I ka nalu ha‘i maila o Ka‘ewa	We longed to see Puaka‘ilima Where the surf of Ka‘ewa rolls
Hō‘ike Poli‘ahu i ke kapa hau Ho‘i ana i ka piko o Mauna Kea	Poli‘ahu displays her mantle of snow Spread out on the summit of Mauna Kea
Ha‘ina ia mai ana ka puana I ke kai nehe ‘ōlelo me ka ‘ili‘ili	This is the end of my song Of the sea that whispers over the pebbles

a fish spawning habitat and further offshore humpback whales can often be spotted. This bond between the people and their environment has been put into song. Bill Ali‘iloa Lincoln wrote Kawaihae Hula which describes the beauty of the surrounding ocean.

However, salt extracted from the surrounding waters was a major regional commodity. Salt was harvested by utilizing salt pans, shallow earthen pools that were filled with salt water. Through a process of evaporation, locals were able to produce a high-quality sea salt that was coveted by both native and foreign merchants. Foreign traders especially prized the Kawaihae salt for tanning animal furs.

In 1957, the U.S. Army Corps of Engineers began construction of a deep-draft harbor. In 1959, the current harbor breakwater was completed.

Today, Kawaihae remains a quiet fishing village nestled along the base of the Kohala Mountains. While life in this small village will continue on as it has always done so, change is underway. In 2010, the Hawai‘i Superferry is planning to begin daily service between Honolulu and Kawaihae Harbor. The increase in cargo and passenger traffic in and around the harbor will provide both opportunities and challenges for the community.



Potrait of John Young



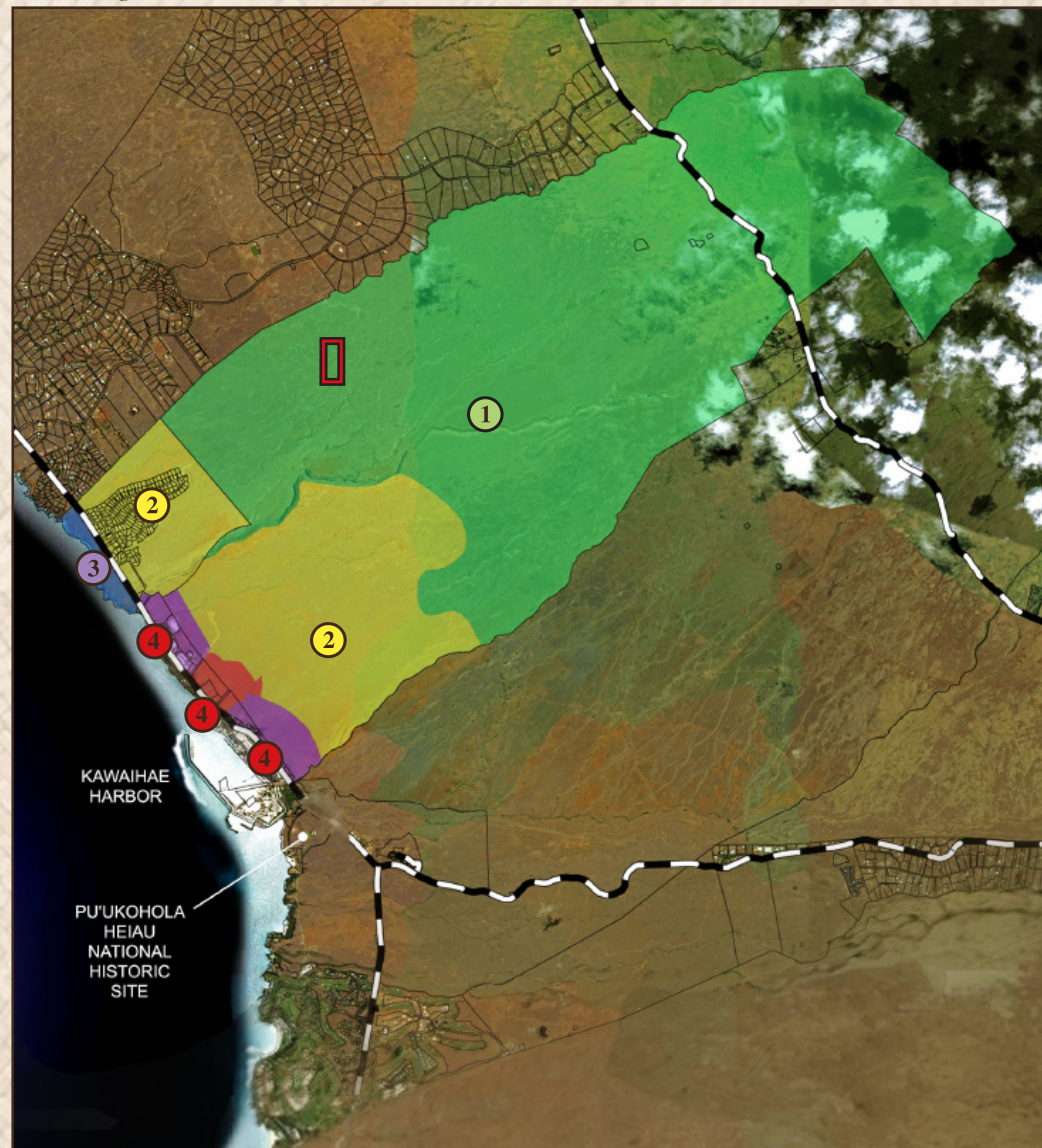
Pu‘u Koholā Heiau



Hawaiian Home Lands - Area Map

Kawaihae Area Lands

Kawaihae is located on the western side of the Island of Hawai'i. The homestead's land area stretches approximately 10,153 acres from the ocean to the base of the Kohala Mountain Range. Rainfall in the area varies greatly. Along the coastline, average rainfall is approximately ten inches per year. Lack of rainfall is a major issue for further development in the low-elevation areas of Kawaihae. In the higher elevation areas, average annual rainfall increases significantly to more than 150 inches per year. This steep gradient of rainfall within a relatively short distance makes Kawaihae a unique environment that offers a wide range of habitat.



① General Agriculture (7,502 acres)

General Agriculture lands in Kawaihae consists of several large parcels that stretches from mauka to makai. Access to these parcels is limited to the areas that are adjacent to the Akoni Pule Highway, makai and the Kohala Mountain Road, mauka. The Honokoa Gulch divides the Kawaihae lands into a northern and southern portion.

Throughout the General Agriculture parcel are innumerable archaeological and historical sites. Numerous archaeological sites are located between the 50 and 250-foot elevation. Future development in those areas may be greatly limited to minimize the negative impact of development on the archaeological sites.

The General Agriculture parcel is currently leased out to Kahua Ranch. Kahua Ranch uses the land for cattle grazing. In 2011, the current lease between DHHL and Kahua Ranch will expire and a future lease has yet to be determined.

Although grazing and ranching are the primary activities carried out on Kawaihae's General Agricultural lands, this type of business activity may not be economically feasible under pastoral leases. According to an Agricon Hawai'i LLC study commissioned by DHHL, ranching lands are economically feasible in areas where there is sufficient rainfall. Agricon then created three different scenarios with average rainfall as a limiting factor for ranching capacity. The study concluded that an area with "Poor" rainfall (less than thirty inches) was economically unfeasible. In this scenario, a single head of cattle required fifteen acres of grazing land. This is in stark contrast to what Agricon identified as "Good" pasture land where rainfall was above 45 inches per year and allowed for three acres of grazing land per head of cattle.

Although the mauka portion of the General Agriculture lands receives the minimum amount of annual rainfall to maximize the number of cattle per acre, the makai section's lack of water would require rethinking of how best to utilize these lands.

② Residential (2,223 acres)

Kawaihae's largest residential subdivision (Kailapa Community Association) is located mauka of Akoni Pule Highway. The 199 lots encompass a total of 180 acres. Average lot size is approximately 32,000 square feet. The community's water is supplied from the Kohala Ranch's private water system.

A second, smaller subdivision (Nā Pua Ka 'Ilima) is located makai of Akoni

Pule Highway and consists of twenty-two (22) house lots. Average lot size is approximately 15,000 square feet. Total acreage for the Kawaihae makai subdivision is approximately thirty-four (34) acres.

The remaining 2,009 acres designated for residential usage is currently not developed and awaiting further infrastructure improvements.

Currently, postal service is not available to Kawaihae homestead residents. Residents travel to Waimea to obtain their mail. To remedy this issue, residents have identified a site along Kailapa Street that could be converted into community center, preschool, playground and community gang mail-box area.

③ Community Use (72 acres)

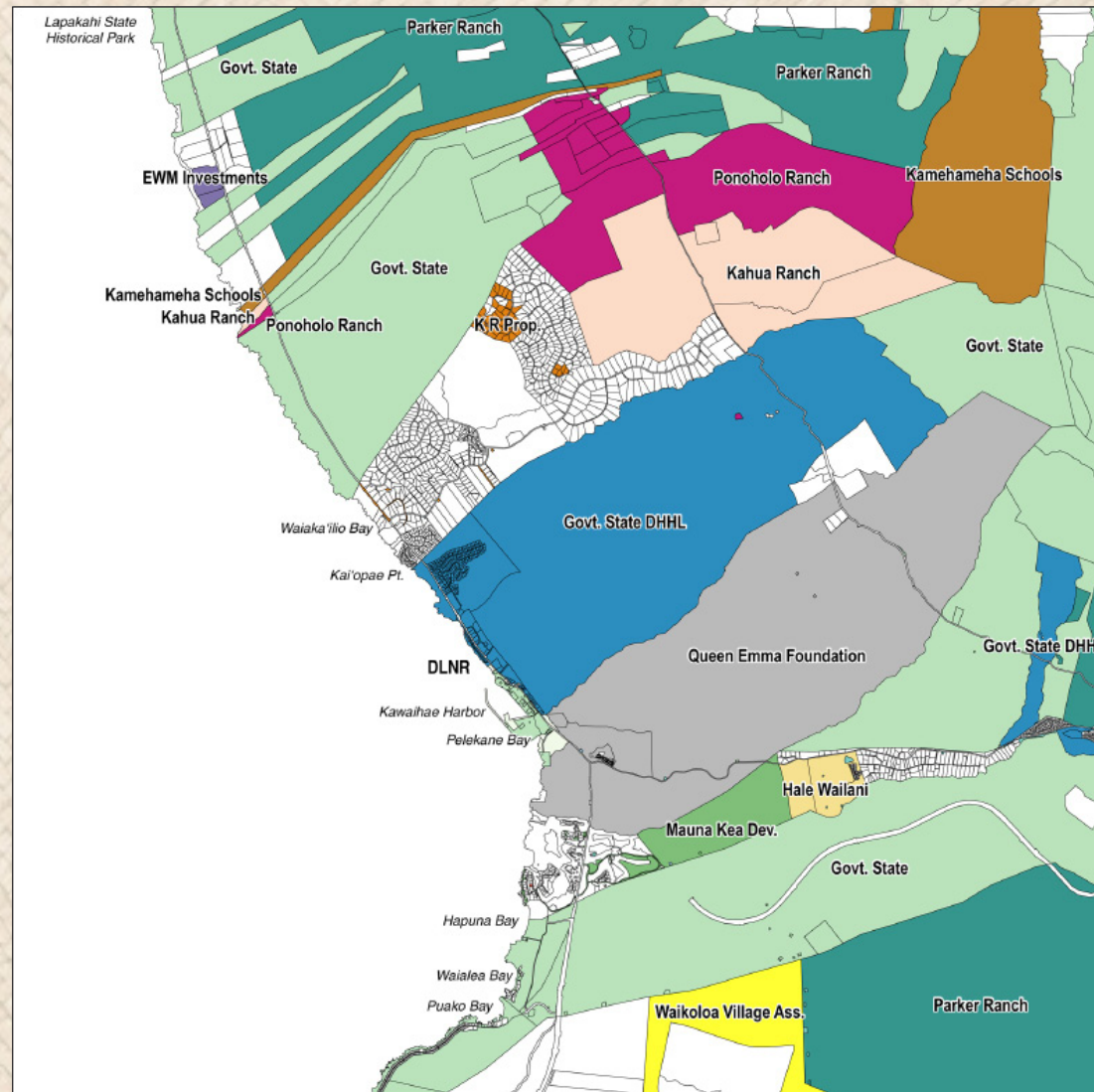
Facing the Kohala Coast, DHHL has designated a 72-acre parcel for community use. The proposed area lies makai of Akoni Pule Highway across from the mauka homestead residential tracts. Community members have begun the process of generating ideas on how to develop the parcel. Current plans include a walking/jogging trail, native plant revegetation, community gathering area, and other ocean related activities.

④ Industrial/Commercial (356 acres)

Homestead lands along Kawaihae Road and Akoni Pule Highway adjacent to the Kawaihae Harbor are currently being used by a variety of different commercial and industrial tenants. Current tenants include: fish market, restaurants, and other light industrial and commercial operations. The Department of Transportation's Harbor Division is currently in the process of updating its Master Plan for the Kawaihae Commercial Harbor. Activities identified in the Harbor Master Plan will undoubtedly create a surge in demand for services and shopping opportunities in the Kawaihae area.

The 2002 Hawai'i Island Plan also proposed to increase the amount of land available for commercial and industrial businesses mauka of the existing development. Archaeological surveys indicate a large number of burial sites behind Kawaihae's existing commercial and industrial parcels. An area mauka within the Kawaihae ahupua'a is currently utilized as a permanent reinternment site for iwi.

Adjacent Lands



STATE OF HAWAII (45,625 ACRES)

The State of Hawai'i is the largest landholder surrounding the Kawaihae Hawaiian Homestead. Currently, there are no immediate plans for these lands.

STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION-HARBORS DIVISION-KAWAIIHAE HARBOR (31 ACRES)

Serving as a second deep draft harbor to the Big Island, Kawaihae Harbor plays a big role in West Hawai'i. The existing harbor is able to handle overseas and inter-island cargo. There are two piers with over 35 acres of yard space. DLNR manages two small boat harbors both inside and outside of the breakwall. In 2010, the Hawai'i Superferry is tentatively planning to extend services to Kawaihae. Community meetings held in early 2008 show that residents are not prepared for a sudden in-flux of off-island passengers. Issues relating to traffic and lack of amenities in the immediate vicinity were some issues raised by residents. After the October 2006 earthquake, the Port of Kawaihae experienced considerable structural damage. Portions of Piers 1 and 2 were made inoperable. As of January 2009, repair efforts are underway to ensure the port can return to operating at full capacity. Pier 1 repairs have recently passed structural inspection and awaiting formal approval from the U.S. Coast Guard to resume commercial operation.

PARKER RANCH (24,160 ACRES)

Founded in 1847, Parker Ranch is one of the oldest and largest ranches in the country. Total acreage is approximately 150,000 acres. Originally a cattle-only ranch, Parker Ranch began to diversify its operations through land development in the 1990's. In addition to various ranch activities, Parker Ranch created the Parker Ranch Center, a multi-store shopping complex in the center of Waimea.

KAHUA RANCH (4,108 ACRES)

Founded in 1928 by Atherton Richards, Kahua Ranch focused on cattle ranching activities. In the late 1980's, the ranch was split into two; Ponoholo and Kahua Ranch. In addition to cattle ranch farming, Kahua Ranch also engages in tourism which includes ATV, horseback riding and other related

activities. Lands directly adjacent to the Kawaihae homestead lands are utilized as grazing lands for the ranch's cattle herd.

PONOHOLO RANCH (4,072 ACRES)

Ponoholo Ranch lies north of the Kawaihae homestead. The ranch was founded in 1928 by the current owners' grandfather. The majority of the ranch's operations are related to cattle beef production. The majority of the calves raised by the ranch are primarily for the high-end market.

KOHALA RANCH (212 ACRES)

Kohala Ranch is comprised of 519 single family units that are spread out on parcels north of the main Kawaihae homestead lots. There are some large parcels that have yet to be developed.

KAMEHAMEHA SCHOOLS/ (6,050 ACRES)

Kamehameha Schools is the largest private landowner in the State of Hawai'i. Kamehameha Schools is a private, charitable, perpetual trust dedicated to the education of Hawaiian children and youth. Established in her will of 1883, the Kamehameha Schools is a legacy of Princess Bernice Pauahi Bishop, great-granddaughter and last direct royal descendant of King Kamehameha the Great. Income generated from numerous investments, and residential, commercial, and resort leases, fund the schools' maintenance and educational services. KS lands in the South Kohala region are primarily used for pasture and land-based education. The parcel in Honokane serves as the main intake for the Kohala Ditch.

QUEEN EMMA FOUNDATION (10,367 ACRES)

The Queen Emma Foundation (QEF) is the real estate arm of the Queen's Health Systems. The foundation manages approximately 12,000 acres on O'ahu and the Big Island. QEF lands the Big Island are located south of the Kawaihae homestead. Approximately eighty (80) percent of QEF Kawaihae lands are leased to Parker Ranch for grazing. Reforestation efforts with native species are also underway in the upper regions of QEF parcels.

Regional Demographics

Kawaihae Homestead Community is located on the leeward side of the island of Hawai'i. A total of 103 homesteaders live on 40 parcels. Children comprise over a quarter of the total resident population. Seniors over 65 represent nearly a fifth of the homestead population. Although Kawaihae's median income is approximately \$37,321, none of those households interviewed for the census indicated they received public assistance. Kawaihae's geographical isolation from the Kona's tourism activity and Hilo's government and agricultural jobs results in over three-quarters of the Kawaihae resident population to spend over thirty minutes to commute to work. The Harbor Master Plan may generate additional revenue and employment opportunities for Kawaihae residents.

- The Kawaihae Hawaiian Home Lands are located on the Leeward side of the Big Island and is part of the South Kohala District as designated by the County of Hawai'i.
- The 2000 census recorded Kawaihae's resident population at 103.
- Children under the age of 18 comprise 28 percent of Kawaihae's resident population.
- Kawaihae's over 65 population of 17 percent.
- The median age of residents in South Kohala is 36.2, in Kawaihae it is 36.8.
- According to 2000 census data, 31.2 percent of South Kohala residents are full or part Native Hawaiian.
- Kawaihae's median income of \$37,321 is considerably lower than South Kohala's median income of \$51,379. The difference in median income may be tied to the higher percentage of residents over the age of 65 that are currently living on fixed incomes.
- A high school diploma attainment rate of 94 percent among Kawaihae homesteaders is considerably higher than that of the county and state.
- Despite a lower median income, census sample data indicates none of the resident respondents received public assistance income.
- Kawaihae's forty (40) parcels represent less than one percent of all residential homes in South Kohala.
- Kawaihae's 2.58 individuals per housing unit are higher than that of South Kohala.
- According to the Hawai'i Board of Realtors, median home prices in 2008 in South Kohala were \$510,000, which is considerably higher than the county median price of \$348,500.
- There are relatively few job opportunities in the Kawaihae region when compared to Kona and Hilo. Consequentially, many residents must commute to work in either Waimea or Kona.
- Consequentially, few job opportunities in Kawaihae force approximately 76 percent of Kawaihae homestead residents to spend 30 or more minutes for their daily commute to work.
- Kawaihae Harbor is the primary deep water port in West Hawai'i. With harbor improvements called for in the Harbor Master Plan, there will be an increase in commercial transportation traffic in the area.
- Hawai'i Island Board of Realtors (HIBR) does not provide median sales prices for the Kawaihae region. However, the Multiple Listing Service (MLS) website identifies homes outside of the homestead area with a sales price of \$2.9 million.
- In contrast to the State's population growth of 9 percent between 1990 and 2000, South Kohala's population grew roughly 30 percent during the same period.

Characteristics	DHHL Kawaihae	South Kohala CCD	County of Hawai'i	State of Hawai'i
POPULATION AND AGE				
Total Population ¹	103	13,131	148,677	1,211,537
Median age	36.8	36.2	38.6	36.2
Children under the age of 18 (%)	29 (28.2%)	3,824 (29.1%)	15,151 (10.2%)	28,9012 (23.9%)
Population over 65 (%)	17 (16.5%)	1,186 (9.0%)	19,951 (13.4%)	161,141 (13.3%)
Educational Attainment				
% of population over 25 with high school diploma	93.6%	90.1%	84.6%	84.6%
% of population over 25 with a bachelor's degree	12.5%	27.3%	22.1%	26.2%
HOUSEHOLD				
Household size	3.12	2.81	2.75	2.92
Household median income in 1999 dollars	\$37,321	\$51,379	\$39,805	\$49,820
Percentage of Households living below poverty line	0%	9%	16%	11%
Percent of households receiving public assistance	0%	6%	10%	7%
Percent of working residents traveling 30+ minutes to work	76%	34%	29%	38%
HOUSING MARKET				
Housing units	40	5,794	62,674	460,542
Population per housing unit	2.58	2.27	2.37	2.63
Median residential price 2008 ²	n/a	\$521,250	\$510,000	\$348,5-00

Census Year	South Kohala CCD	County of Hawai'i	State of Hawai'i
GROWTH IN POPULATION BETWEEN 1990 & 2000 ADD			
1990	9,140	120,317	1,108,229
2000	13,131	148,677	1,211,537
Percent Change	30.3%	23.6%	9.3%

¹ All data gathered from Census 2000 unless otherwise noted

² Hawaii Island Board of Realtors

Development Trends

Infrastructure

1 PORT OF KAWAIHAE

Located on Highway 270, Kawaihae Harbor is one of the two major deep-water ports on the island of Hawai'i. Based on 2005 census data, the Kawaihae Port handles roughly over 2 million tons of goods. All goods unloaded at Kawaihae are domestic shipments originating from Honolulu. Recent funding through the State Legislature appropriated \$35 million for upgrades and the construction of a new barge terminal. Another \$500,000 was appropriated to create a development plan to improve new terminal cargo facilities at the harbor. The port is also currently in the process of repairing the damage to Piers 1 and 2 from the October 2006 earthquake. The Department of Transportation, Harbor's Division is currently in the process of developing its Hawai'i Island Commercial Harbors 2035 Master Plan in order to provide services and capacity to handle the forecasted demand while also balancing the needs of harbor users and the surrounding harbors community.

2 KAWAIHAE SMALL BOAT HARBOR

Kawaihae Small Boat Harbor is one of the primary boat harbors in West Hawai'i. The Department of Land and Natural Resource (DLNR)-managed harbor is primarily used for recreational and sport fishing activities. The North Basin harbor is located at the entrance to the Port of Kawaihae on 4.01 acres of land. In addition to nine boat moorings, there is a boat launch and a comfort station. Local canoe clubs often launch their canoes from the North Basin.

3 KONA INTERNATIONAL AIRPORT (NOT SHOWN)

The Kona International Airport is the primary airport hub for West Hawai'i. According to 2006 DBEDT tourism statistics indicate over 1.3 million visitors arrived in the Kona region. Recent State Legislature appropriations earmarked over \$17 million in upgrades and terminal construction. Subsequent increase in air fuel prices, bankruptcies of several airlines that service Kona International Airport and an emerging economic recession will have an adverse spill-over effect on the region's local economy.

4 SOUTH KOHALA COMMUNITY DEVELOPMENT PLAN (CDP) (NOT SHOWN)

In order to address the needs of a growing island community, the County of Hawai'i has undertaken an ambitious project to create regional development plans that would chart a course for specific policies and actions for the various parts of the island. The South Kohala CDP was adopted by the County Council in December 2008.

5 KAWAIHAE BYPASS ROAD

The proposed bypass road will divert traffic from Māmalahoa Highway and reconnect at Queen Ka'ahumanu Highway near Kawaihae. Initial DOT designs for the alternative road alignments are shown to be south of the existing Kawaihae Road. In addition, connector roads will link the bypass road to Kawaihae Road and Akoni Pule Highway. Leaders from the Kawaihae community have stressed a preference to select a bypass road alignment which is the furthest mauka of the village of Kawaihae. DHHL has worked with DOT and their consultants to develop an alignment that meets the needs and concerns of the Kawaihae community. Consultation with DOT has resulted in developing an alignment that connects from Queen Ka'ahumanu Highway to Akoni Pule Highway with spur connections to Kawaihae and the harbor. The construction of this road is currently in the EIS and design phase. Construction could begin as early as 2015.

6 PELEKANE BAY

Pelekane Bay is located south of the existing Kawaihae Harbor. Based on local resident observations and other scientific studies of the area, the completion of the Kawaihae Harbor in 1959 by the U.S. Army Corps of Engineers resulted in permanent damage to Pelekane Bay in the form of a significant decline in the existing flora and fauna. In 2002, the U.S. Army Corps of Engineers developed the Pelekane Bay Ecosystem Restoration Project which includes a 2003 feasibility study to assess sediment retention facilities, erosion control, and circulation channel connection between Kawaihae Harbor and Pelekane Bay. In 2009, the U.S. Army Corps of Engineers was in the process of developing a plan to reverse the reef degradation and improve water quality conditions.

7 NORTH KOHALA AQUACULTURE

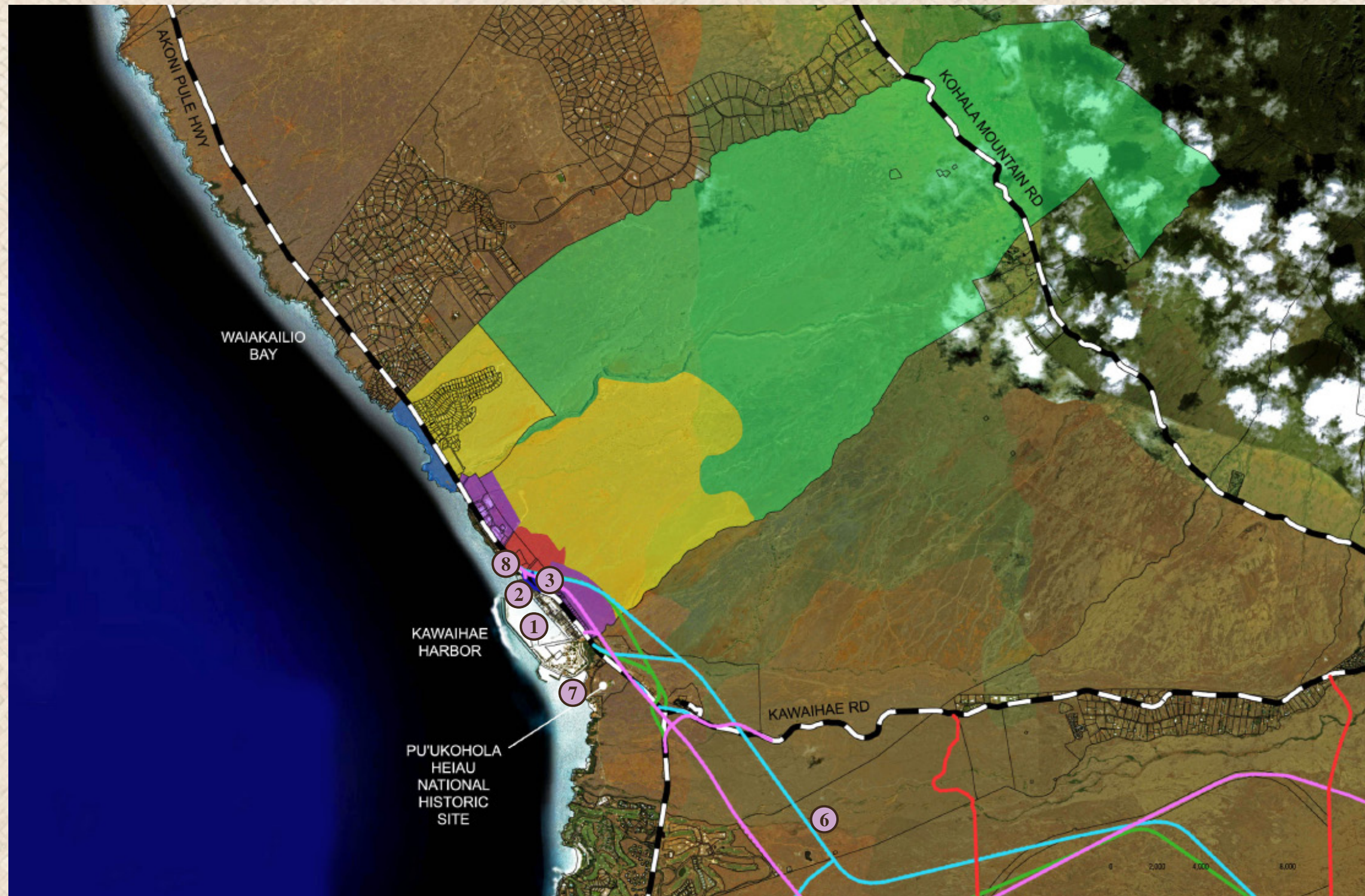
Hawaiian Ocean Technologies, Inc. plan to raise up to 6,000 tons yearly of ahi (Yellowtail and Bigeye tuna) in a dozen untethered, self-powered, open ocean fishpens off the Big Island's North Kohala coast. The Honolulu-based firm's proposal is for a 247-acre farm located about 3 miles off Malae Point in North Kohala. The ahi-raising farm would be one of three such fish-raising businesses in the state if BLNR grants the company a conservation district use application and approves its environmental impact statement.

8 DLNR LEASED LAND

DLNR has rezoned approximately 1.32 acres of land located on TMK: 6-1-3:15 from Open (O) to the Industrial-Commercial Mixed one-acre (MCX-1a). The property is makai of Akoni Pule Highway and north of the Kawaihae lighthouse property. Kawaihae Restaurant, LLC has leased the property from DLNR and plans to develop a restaurant, commercial/recreational facilities and related activities consistent with existing Commercial/Industrial zoning.



Development Trends



Kawaihae Master Plan

HISTORY

In 1992, the R.M. Towill Corporation was hired by DHHL to develop a comprehensive master plan for Kawaihae. The master plan addressed a range of infrastructure and development issues specific to Kawaihae. The Long Range Master Plan created a development plan based on old ahupua'a boundaries that incorporated existing residential, commercial, and industrial subdivisions and integrated them into future phases for expansion. R.M. Towill's master plan initially intended to develop a 2,115 acre portion of Kawaihae mauka of Kawaihae Road and Akoni Pule Highway in a ten (10) year period. However, R.M. Towill in its final assessment acknowledged developing Kawaihae in a ten year period would be an ambitious project that would require a large amount of financial capital and investment to meet target completion dates.

In an effort to establish clear objectives for future development of its homestead parcels, DHHL adopted in 2002 the Hawai'i Island Plan. The Island Plan accepted Kawaihae's land use designations identified in the R.M. Towill plan.

PROPOSED PLAN

Following the lead of the Hawai'i Island Plan, DHHL began the regional planning process for Kawaihae in September 2008. In addition to engaging homestead community members about the current needs and the potential projects that would address their immediate issues and needs, DHHL also began the process of working with the necessary regional stakeholders and government agencies to ensure sufficient infrastructure upgrades will be in place to meet current needs and potential projects.

Based on the Hawai'i Island Plan land use designations and development projections, DHHL and its consultants have tentatively mapped out the initial residential, commercial, industrial, and community subdivisions that will be developed over a twenty (20) year time frame. Once completed, the subdivisions will add another 787 residential units, 218 acres of industrial and commercial land, land for a new school, and additional space for other community facilities. The proposed master plan will be completed in four (4) phases.

PHASE I (2009-2014*) *Timing of project phases are estimates

The first phase of development centers around improving services and amenities for the existing residential homestead subdivision. These amenities include developing mail delivery service, daycare facilities for the community residents and development of a community park along Akoni Pule Highway. Concurrently, approximately thirty-two (32) acres of land around the existing industrial subdivision will be developed for additional expansion.

PHASE II (2014-2019)

Phase II will focus on an additional 132 half-acre residential lots adjacent to the existing residential homestead subdivision. A fifty-four (54) acre section of new industrial land along Kawaihae Road and adjacent to Kawaihae Harbor will be developed. It should be noted that based on current DOT projections, Phase I of the Kawaihae Bypass road leading to the harbor will begin approximately around the same time as Phase II construction.

PHASE III (2019-2024)

Phase III construction will involve developing an additional three-hundred (300) 10,000 square foot residential lots mauka of the proposed Phase II industrial land. In addition to residential lot development, groundwork for a new school, park and church/community site will be developed to meet future demand. The new school can provide emergency shelter for residents and their pets in search of higher grounds. An approximate thirty-nine (39) acre town center commercial parcel will be placed along the Akoni Pule Highway between existing commercial and industrial zones. Lastly, a fifty-five (55) acre parcel of industrial land will be developed mauka of the existing Kawaihae village and makai of the bypass highway.

PHASE IV (2024-2029)

The last phase of the Kawaihae Master Plan will complete the development of 10,000 square foot residential lots mauka of the Phase I industrial lands. Once completed, the number of 10,000 square foot residential lots in the area will be approximately 655 units. An additional thirty-eight (38) acres of town center commercial land will be developed just mauka of the Phase III commercial zone.

OPPORTUNITIES

As the various stages of the master plan are executed new opportunities for this growing homestead community will begin to emerge. The expansion of the Commercial Harbor will foster the development of more businesses around the port. As development around the Harbor increases, homestead residents will have new employment opportunities which will eliminate the need to commute to Kona or Hilo.

Part of Phase III will include the development of a new school. Parents will no longer be forced to send their children to schools in North Kohala or Waimea. Combined with new job growth centered on the port, parents will be able to find employment close to home and spend more time in raising their children.

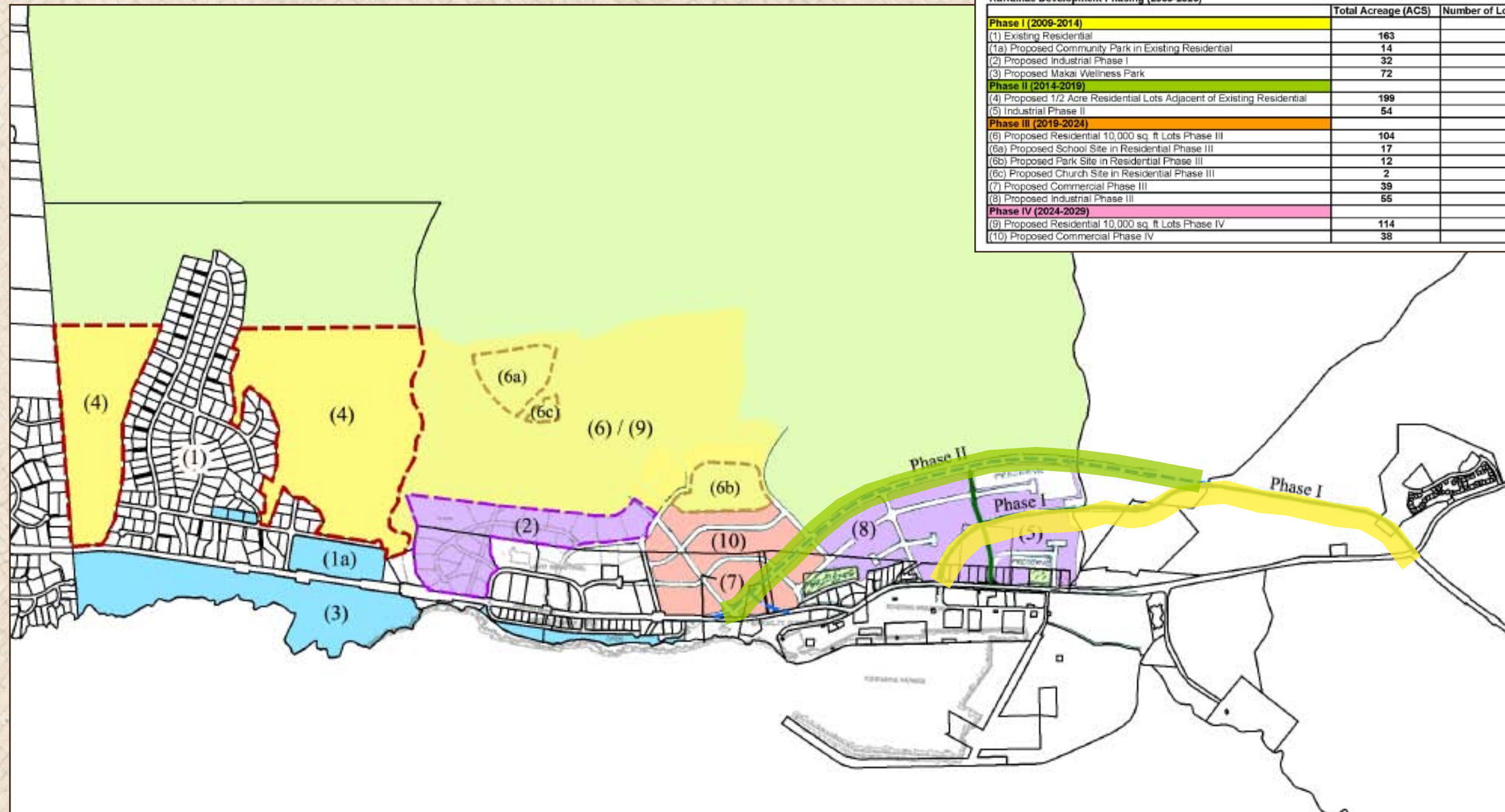
CHALLENGES

The surrounding topography in Kawaihae poses one of the major challenges for future development. Because the area is bisected by major drainage ways, there are a limited number of options that provide direct access to mauka highways serving as emergency escape routes for area residents during tsunamis and other natural disasters. The construction of the bypass highway will begin to address this need.

Although Kawaihae's existing water demand is met through County and private wells, the proposed Kawaihae Master Plan will rapidly increase demand. Based on engineering consultant's estimates, water demand for all four phases of development will require approximately 2.4 million gallons per day (MGD). Currently, DHHL and its consultants are assessing a variety of options such as developing partnerships with other regional stakeholders in the development of additional water.



Kawaihae Master Plan



	Total Acreage (ACS)	Number of Lots (If Applicable)
Phase I (2009-2014)		
(1) Existing Residential	163	199
(1a) Proposed Community Park in Existing Residential	14	1
(2) Proposed Industrial Phase I	32	n/a
(3) Proposed Makai Wellness Park	72	1
Phase II (2014-2019)		
(4) Proposed 1/2 Acre Residential Lots Adjacent of Existing Residential	199	132
(5) Industrial Phase II	54	n/a
Phase III (2019-2024)		
(6) Proposed Residential 10,000 sq. ft Lots Phase III	104	300
(6a) Proposed School Site in Residential Phase III	17	1
(6b) Proposed Park Site in Residential Phase III	12	1
(6c) Proposed Church Site in Residential Phase III	2	1
(7) Proposed Commercial Phase III	39	n/a
(8) Proposed Industrial Phase III	55	n/a
Phase IV (2024-2029)		
(9) Proposed Residential 10,000 sq. ft Lots Phase IV	114	355
(10) Proposed Commercial Phase IV	38	n/a

Infrastructure - Roads

General

There is a total of 1,393 miles of public roads in the County of Hawai'i. Approximately 394 miles are state-managed and 879 miles by the County. The major highways on the island of Hawai'i are the Hawai'i Belt and the Māmalahoa Highways which link all major towns except North Kohala. Collaboration between Federal, State, and County will also focus on improving the Saddle Road. However, with an increasing population and subsequent strain on existing road infrastructure, Federal, State, and County agencies project a long-term development of Saddle Road (Hwy 200) that will involve vast improvements to existing road conditions to meet existing Federal highway design standards. Once completed, Saddle Road will become another crucial transportation link between West and East Hawai'i.

MAJOR ROADWAYS

- ① **HAWAI'I BELT ROAD (ROUTES, 11, 19, 190) (NOT SHOWN)**
The Hawai'i Belt Road consists of three separate State routes; 11, 19, and 190. The routes circumnavigate the entire Island of Hawai'i. Routes 11 and 19 in particular bisect central Hilo.
- ② **SADDLE ROAD HIGHWAY (HWY 200) (NOT SHOWN)**
The existing road was first built in 1943 as a direct link between East and West Hawai'i. The roadway provides access to the Mauna Kea Observatories, Pōhakuloa Training Area Base, Mauna Kea State Park and various hunting and gathering access areas. As of December 2008, 17 of the 49 miles of the Saddle Road has been paved to accommodate two-lane vehicular traffic.
- ③ **QUEEN KA'AHUMANU HIGHWAY (HWY 19)**
The portion of the Hawai'i Belt Road that follows the contour of the Kona Coast is referred to as the Queen Ka'ahumanu Highway. This roadway is the major link between Kawaihae and Kona. Along this busy thoroughfare, there are a variety of roadway improvement and repair projects currently being implemented.

MAJOR KAWAIHAE ROADS

- ④ **AKONI PULE HIGHWAY (HWY 270)**
The Akoni Pule Highway is one of two major roadways that cross the Kawaihae homestead. The towns of Hāwī and Kapa'au in North Kohala also utilize the Akoni Pule Highway to commute outside of their communities. Approximately 100 feet above sea level, the highway is a vital roadway that connects the homestead community with Kona and Hilo. Although the highway provides breathtaking views of the Kohala Coast, the existing roadway is located in a tsunami inundation zone. Residents also noted that during the October 2006 earthquakes, rock and mudslides prevented homesteaders from leaving their homes to attend school and work. The Hawai'i State Department of Transportation (DOT) is currently investigating additional road bypass options into Kawaihae.
- ⑤ **KAWAIHAE ROAD (HWY 19)**
As part of the Hawai'i Belt Road, the Kawaihae Road is the primary roadway that links Kawaihae to Waimea. The Kawaihae Road terminates at the small boat harbor. A lack of alternative routes into Waimea can be linked to observed traffic stoppage as long as three-quarters of a mile along the Kawaihae Road.
- ⑥ **KOHALA MOUNTAIN ROAD (NOT SHOWN)**
The Kohala Mountain Road crosses the mauka portion of the Kawaihae homestead. With an elevation of above 3,000 feet, the Kohala Mountain Road provides a panoramic view of the Kohala and Kona coasts. The road extends further to Hāwī in North Kohala. Homestead land adjacent to the Kohala Mountain Road is currently used for cattle grazing.
- ⑦ **QUEEN KA'AHUMANU HIGHWAY/KAWAIHAE ROAD INTERSECTION UPGRADES**
As Hawai'i's population expands, the island's existing road infrastructure upgrades become increasingly important. To meet this growing need, the Hawai'i Department of Transportation (DOT) is proposing to develop an intersection upgrade to Queen Ka'ahumanu Highway and Kawaihae Road. Improvements will include land acquisition and turn lane development. The \$1M

project is currently in the design phase and will most likely go out to bid by the end of 2009.

PROPOSED ROAD INFRASTRUCTURE DEVELOPMENT
Rapid population growth, increased traffic congestion, and expansion of Kawaihae Harbor will place additional strain on a road infrastructure that already faces chronic traffic congestion between Kawaihae and Waimea. The construction of a bypass road between Kawaihae and Waimea is currently being assessed by the State Department of Transportation and their consultant, E.K. Noda and Associates, Inc.

E.K. Noda initially analyzed the proposed alignments in four separate sections. According to the study, road construction around the Kawaihae Boat Harbor and the Kawaihae Homestead community will be the most expensive portion of the Kawaihae Bypass Road. The bypass road segment between Akoni Pule Highway and Queen Ka'ahumanu Highway would cost approximately between \$30-41 million to cover not only construction but also land acquisition, extensive archaeological site analysis, and road grading. After analyzing the Kawaihae section of the bypass road, E.K. Noda concluded that the alignments furthest mauka (above 200 feet elevation) was the preferred alignment for that section. Kawaihae residents also voiced their preference for a road alignment that was the furthest mauka of the existing Kawaihae Village.

During initial meetings with Kawaihae homesteaders, DHHL has approached DOT and its consultants, E.K. Noda to discuss a preferred alignment that would meet the traffic and transportation needs of its homesteaders and general lessees. DHHL and DOT have agreed upon developing a road alignment that would be constructed in two phases.

The first phase of construction would begin at the intersection of Kawaihae Road and Queen Ka'ahumanu Highway. The road alignment would initially run mauka of Kawaihae and



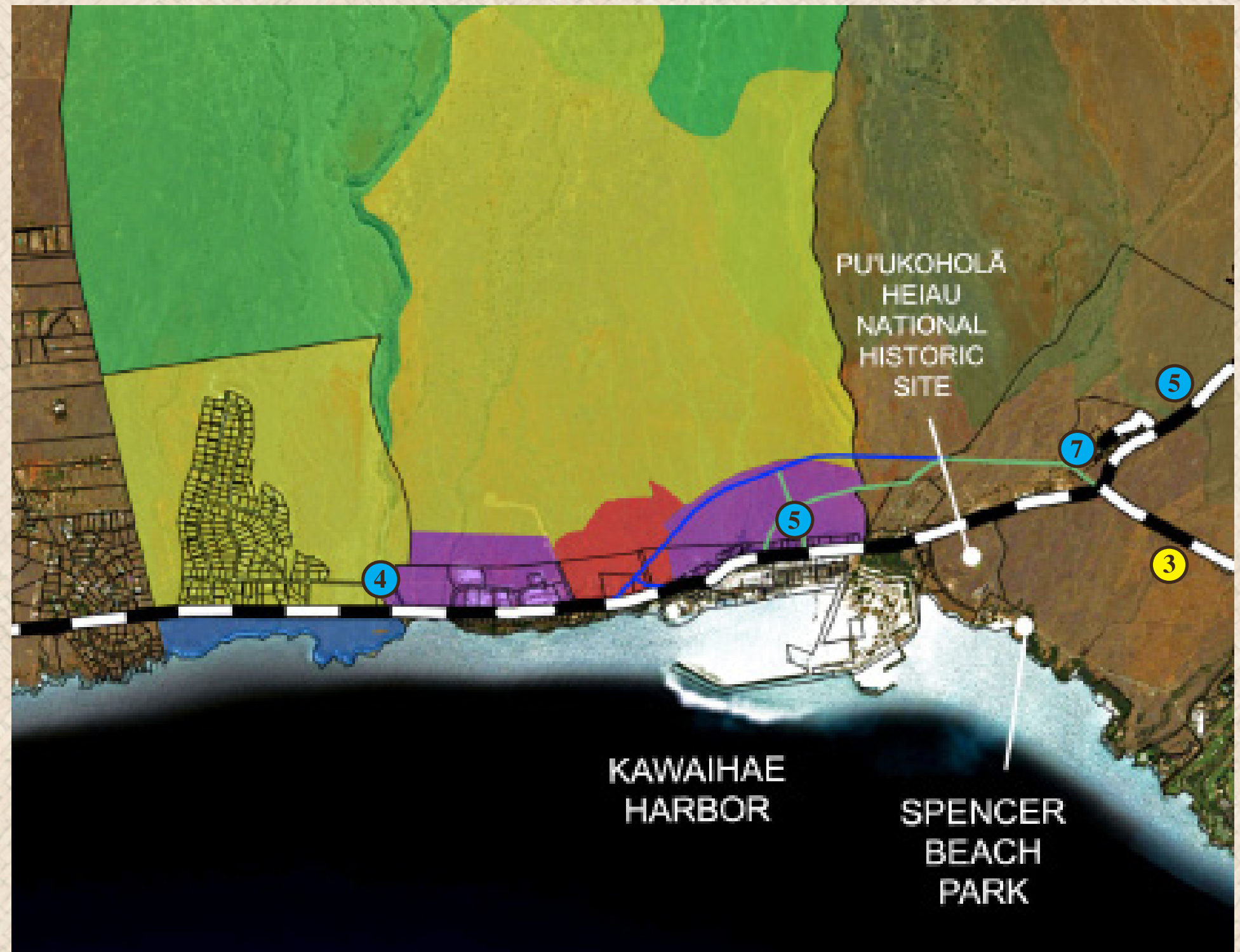
Infrastructure - Roads

eventually split into two roadways that will connect to the primary and secondary gates of the Port of Kawaihae.

The second phase of the alignment would branch off the newly completed Phase I roadway and run further mauka of Kawaihae town. The alignment will then connect to a section of the Akoni Pule Highway located north of the harbor.

Construction of the bypass and its connector roads will provide numerous benefits to the community. First, the completed bypass road's higher elevation will provide area residents a safe road that avoids the existing tsunami flood inundation zone. Completion of the road will spur further commercial and industrial lot development, which will in turn provide new job opportunities for homestead residents. Phase I of the road alignment will move toward providing the needed infrastructure to relieve congestion around the port from future Harbor traffic. Lastly, once the bypass road is completed, the portion of Kawaihae Road fronting the Pu'ukoholā Heiau National Historic Site will be closed off to prevent vibrations caused by heavy vehicles damaging the structures in the national park.

There are two primary challenges that face improving Kawaihae's roadways. Land mauka of Akoni Pule Highway is characterized by a relatively steep grade and numerous gulches limit the area where new road development is feasible. Secondly, the area directly adjacent to Kawaihae Boat Harbor and mauka of the existing highway has numerous burial sites. Despite these challenges, DHHL is working with DOT and other relevant stakeholders in finding the necessary solutions that will provide an alternative road into Kawaihae while making every effort to mitigate the impact on the community.



Water Resources

Annual rainfall in Kohala varies from 10 inches near shore to 200 inches in the upslope areas along the Kohala Mountain range. The Kohala Aquifer Sector Area (ASEA) is comprised of three sections; Hāwī, Waimanu, and Māhukona. The region's sustainable yield is approximately 154 million gallons per day (MGD).

The Kohala Water System incorporates the entire North Kohala region and extends to the south to Kawaihae. The water system is a combination of both surface and groundwater.

Kawaihae's water sources are derived from the Māhukona Aquifer System Area (AYSA) with a sustainable yield of 17 MGD. Māhukona's sustainable yield represents only 11 percent of the Kohala Aquifer's total sustainable yield. Māhukona's low yield is attributed to the low amount of precipitation in the area. Kawaihae's industrial and commercial areas' water is currently supplied from the Lālāmi/Parker Well fields. Residential homestead water demand is supplied through water purchased from the Kohala Ranch. Water is stored in two water tanks along Kalo'olo'o Drive.

As Kawaihae and surrounding communities grow, new water sources will become necessary to meet increasing demand. There are two potential areas for water source development around Kawaihae. The first potential area is the Kehena Ditch. The County's 2007 Water Use and Development Plan identified this area in the upper slopes of the Kohala Mountains as a potential water source for Kawaihae. With an average 6 MGD capacity and maximum of 14 MGD, Kehena Ditch has the potential to meet Kawaihae's increased demand for water.

Transferring water from the Waimanu ASYA to Kawaihae is the last resource alternative. With a sustainable yield of 110 MGD, the Waimanu ASYA is a viable water source that would meet increased demand from Kawaihae. However, transmission and storage costs to transfer water from the Waimanu ASYA to Kawaihae would be very cost prohibitive.

GOVERNMENT AGENCIES AND WATER RESOURCE MANAGEMENT

In a 2007 Hawai'i Department of Water Supply (DWS) completed by Fukunaga and Associates, projected demand by 2020 was approximately 2.04 MGD. However, if sub-division development of the Kawaihae Master Plan were to proceed, SWPP water demand projections would exceed the 2007 Hawai'i DWS projections. Based on the existing water infrastructure, water transfer from existing sources and new well development will be necessary to meet future demand.

The Department of Water Supply is a semi-autonomous agency of the County of Hawai'i which operates by rules and regulations as adopted by the Water Board. As a semi-autonomous agency, the Department operates and maintains its water systems with revenues generated wholly through water sales. The primary function of the Department is to provide safe domestic water service through its 24 water systems and 67 sources scattered throughout the island.

Utilizing the Hawai'i County General Plan as a general guideline, searching for new water sources for the Waimea water system is the primary objective within the South Kohala Aquifer Sector Area (ASEA).

1 Existing Water System

2 Existing Water Infrastructure

3 LĀLĀMILO WATER SYSTEM (NOT SHOWN): This water system currently provides water to Kawaihae's industrial and commercial areas. Water wells in this area have a pumpage in range between 700 to 1,250 gallons per minutes (GPM).

4 KOHALA RANCH (NOT SHOWN): These privately owned wells are the primary water sources for the Kohala Ranch Sub-division. In addition to providing water for its own sub-division residents Kohala Ranch also sells water to homestead residents.

5 KAWAIHAE TANK #5: This water tank is located approximately 300 feet above sea-level, south of the Kawaihae Boat Harbor.

6 HOMESTEAD RESIDENTIAL LOT WATER STORAGE TANKS: There are two storage tanks in the residential home lot area. These storage tanks are located along Kalo'olo'o Drive. Each tank holds approximately 100,000 gallons.

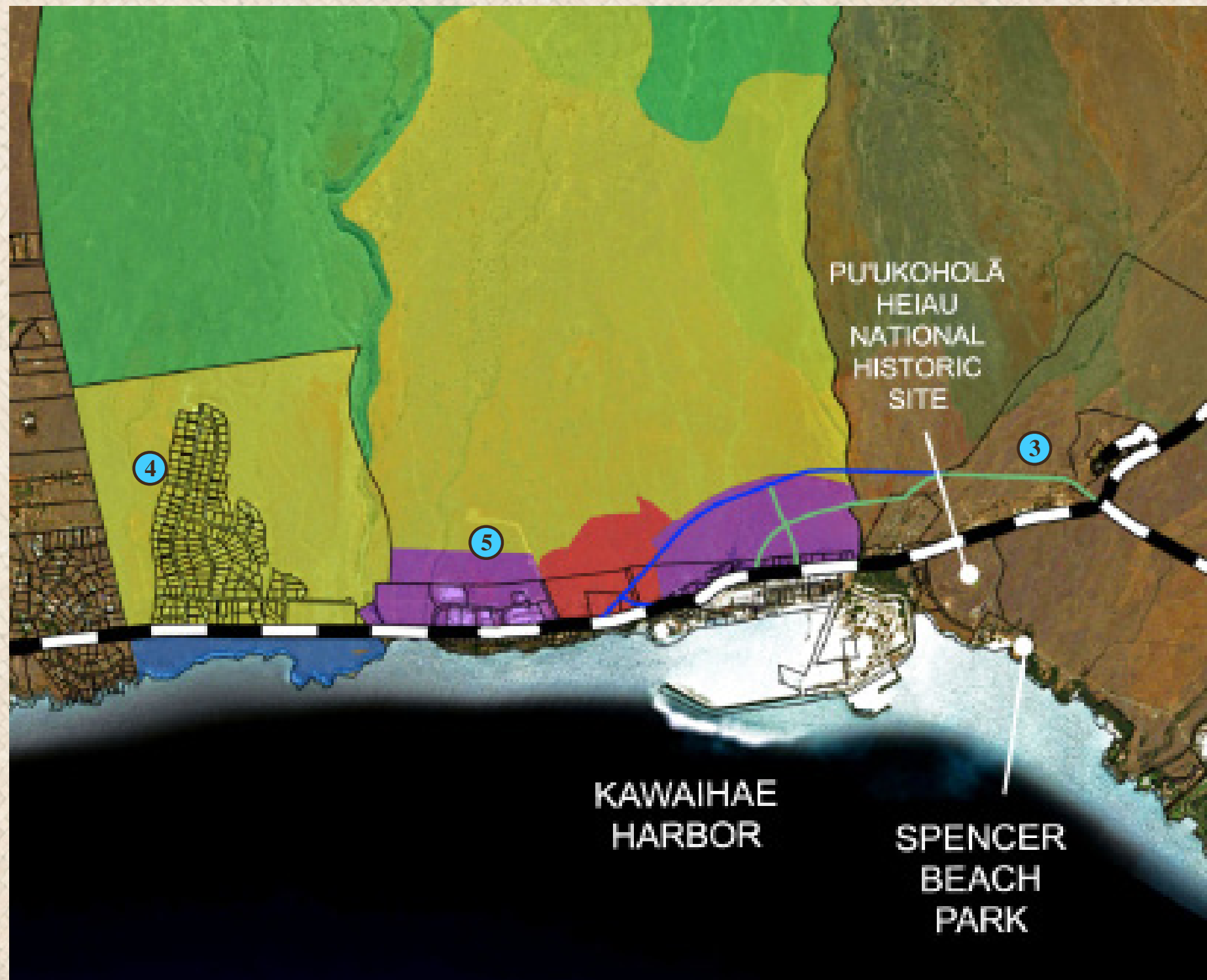
7 KAWAIHAE INDUSTRIAL TANK: DHHL is currently constructing a 1.0 MG Tank mauka of its existing industrial and commercial lots.

POTENTIAL AREAS FOR FUTURE WELL DEVELOPMENT

8 KEHENA DITCH (NOT SHOWN): This ditch is located in the upper slopes of the Kohala Mountains. Water is collected from an adjoining stream in the Honokane Valley. Sustainable yield from this water source average 6 MGD. However, seasonal rainfall limits the reliability of Kehena Ditch as a long-term source of water.

WAIMANU AQUIFER SYSTEM AREA (AYSA) (NOT SHOWN): The Waimanu AYSA provides over 71 percent of the Kohala Aquifer's sustainable yield. The cost to transfer water from the Waimanu AYSA to the Māhukona AYSA has made this an unfeasible option to meet Kawaihae's water consumption needs.

ŌŪLI WELL FIELDS (NOT SHOWN): The Ōūli Well Fields is located south of the Kawaihae homestead with an estimated 1.1 MGD yield. In 2006, the well's owner, Bridge 'Āina'lea LLC initiated dialogue with the County Department of Water Supply to develop the wells in exchange for connectivity to the County's existing water transmission infrastructure. Although the agreement failed to materialize, Ōuli Well Field should be considered as another alternative water source for Kawaihae homestead expansion.



WATER NEEDS FOR THE KAWAIHAE MASTER PLAN

Based on a reassessment of DHHL's plans to develop Kawaihae's residential sub-divisions, commercial and industrial lands, Akinaka and Associates conducted an analysis of projected water needs for the various phases of the Kawaihae Master Plan.

The first phase of the water plan will coincide with the first two phases of the Kawaihae Master Plan development phases and address potable water needs for the existing residential subdivision along Akoni Pule Highway, community park, first industrial phase, and Makai Wellness Park. The water needs for the first two phases of the Kawaihae Master Plan would require 1.23 million gallons per day (MPD). One potential solution would involve drilling a well at the 600 foot elevation. An initial analysis concludes that the newly dug well will most likely be brackish. In order to make the water suitable for potable usage, a desalinization treatment plant at the 310 foot level would be constructed. The proposed desalinization plant will be able to produce approximately 1.23 MGD of potable water.

The second phase of the water development plan will require 1.17 MGD for the third and fourth phases of subdivision development in Kawaihae. Water development requires defining alternative water sources to meet this demand. The 'Ōuli Well Fields and Kehena Ditch were seen as potential long-term water sources. However, the 'Ōuli Well Field will require a significant investment in transmission infrastructure while consistent rainfall and storage are serious issues associated with the Kehena Ditch.

Kawaihae Master Plan

PHASE I	827,000 GPD
PHASE II	403,200 GPD
PHASE III	930,000 GPD
PHASE IV	239,400 GPD
	Total: 2.4 MGD

Kawaihae Water Plan

PHASE I	1.23 MGD
PHASE II	1.17 MGD
	Total: 2.40 MGD

Sources:
Akinaka and Associates, 2008.
Fukunaga and Associates. 2006.
State of Hawai'i. State Water Projects Plan. 2003

Infrastructure - Utilities

Electricity

The Hawai'i Electric Light Company, Inc. (HELCO), supplies electricity for the entire County. HELCO purchases a total of 112 megawatts of power from three privately-owned companies; Hilo Coast Power Company (22 megawatts), Hāmākua Energy Partners (60 megawatts), and Puna Geothermal Venture (geothermal at 30 megawatts). These power plants are located at Keāhole, North Kona; Waimea, South Kohala; Waiākea Peninsula and Kanoelehua, South Hilo; and Kea'au

HELCO uses 34.5kV as a sub-transmission voltage. Distribution voltages are 2.4kV, 4.16kV, 7.2kV, and 13.8kV. Distribution substations, which transform voltages to distribution voltages, are also located island-wide in proximity to communities and other developments.

The Kawaihae homestead's electricity is carried along a 69kV transmission line that follows the Kawaihae Road. Between Mile Marker 63 and 64, the transmission line splits in two directions to Kona and the other to Kawaihae. The Kawaihae portion of the electric transmission line runs parallel to Kawaihae Road and along the Akoni Pule Highway. The transmission line then continues northward and terminates at the Kohala Estates Subdivision Power Sub-Station.

Gas

Propane gas is widely used in residential and commercial facilities on the island of Hawai'i. In some rural areas of the County, gas is the only source of power. The Public Utilities Commission (PUC) regulates 67 miles of gas mains and service lines on the Big Island. Most of these lines are located in Hilo. Gas service is also available by tank or cylinder. This type of service is not regulated by the Public Utilities Commission (PUC).

Telephone Service

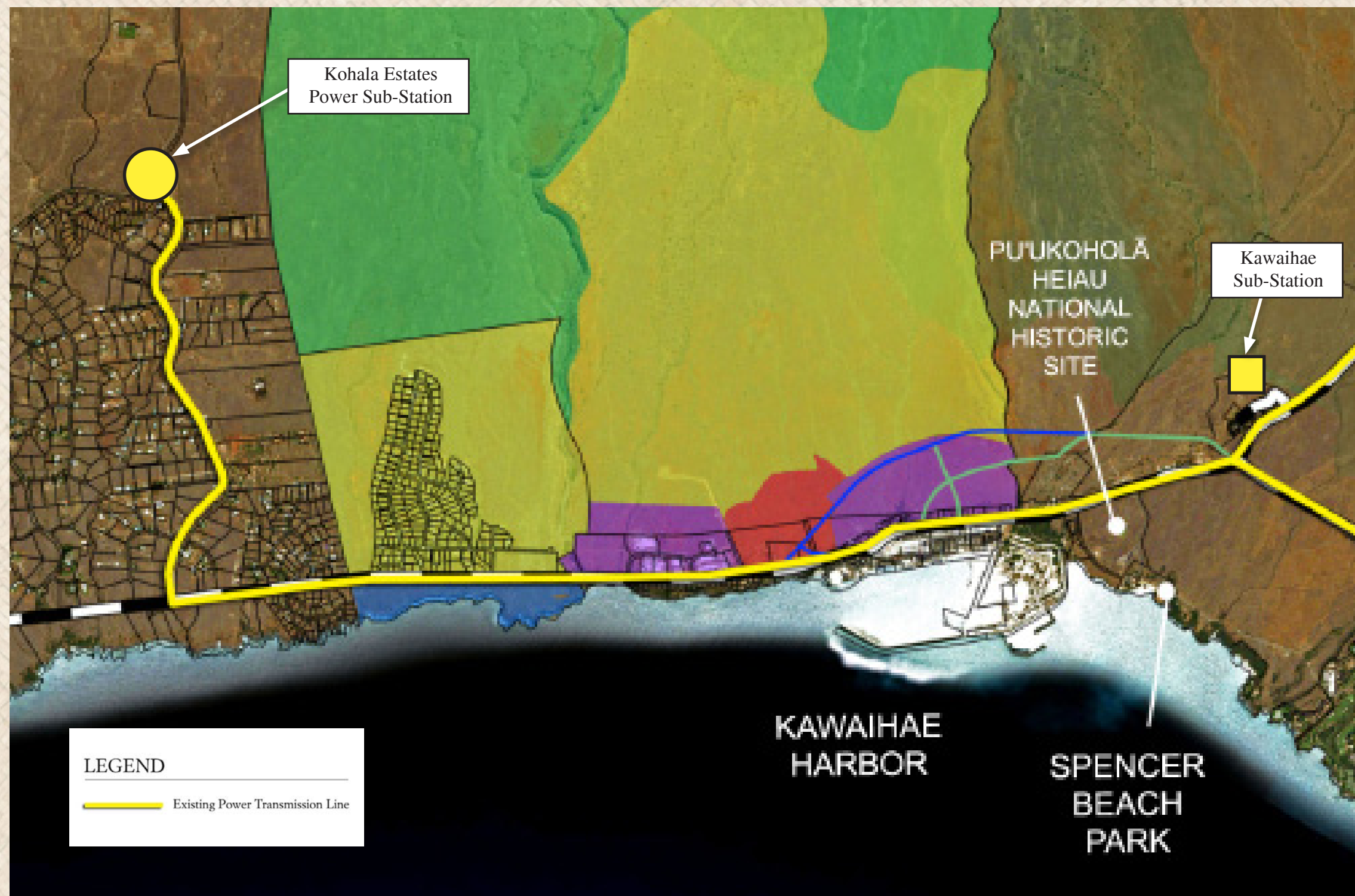
Sandwich Isles Communication provides fiber optic telephone services to DHHL lands.

Cable Television Service

Oceanic Time Warner Cable is the primary provider of cable television service in Kawaihae.

Existing Sewer System

Approximately 77 percent of the county's population is served by cesspools. However, due to risk of contamination of the water supply and nearshore waters, the State Department of Health plans to implement stringent pollution controls which will curtail future cesspool development. Kawaihae is currently not integrated into the County's sewer system. Homes and local businesses rely on cesspools and septic tanks for their wastewater needs. Further development of the Kawaihae Master Plan sub-divisions will require further analysis to determine the best solution to meet Kawaihae's residential, commercial, and industrial sewer needs. In the case of residential development, lots that have a minimum lot size of 10,000 square feet, individual wastewater systems may be utilized. Commercial and industrial wastewater treatment systems will be determined upon submission of plans and eventual approval by the Department of Health.



Infrastructure - Public Facilities

The West Hawai'i School District is broken down into four separate complexes; Honoka'a, Kealahkehe, Kohala, and Konawaena. Kawaihae's children belong to the Kohala Complex. Kohala Complex is comprised of Kohala Elementary, Kohala Intermediate and Kohala High School. In addition, Kohala Mission School provides private school education in Kapa'au for grades K-8. The adjacent Honoka'a district consists of Honoka'a Elementary, Honoka'a Intermediate, Honoka'a High School, Pa'auilo Elementary and Intermediate, Waikoloa Elementary, Waimea Elementary and Waimea Middle (Charter) School. After completion of grade school, Waimea students often attend either Honoka'a High School or Kealahkehe High School (in Kona).

HIGHER EDUCATION

The University of Hawai'i System has two campuses which are located in East Hawai'i: University of Hawai'i at Hilo and Hawai'i Community College. Although West Hawai'i has no universities in the area, the University of Hawai'i system has a University of Hawai'i Center: West Hawai'i that facilitates Hawai'i Community College and other UH system long distance programs for West Hawai'i residents.

School Name	Private / Public	Grades	Actual Enrollment 2007-2008	Projected Enrollment 2012-2013	Change in Enrollment Numbers	Percent Change	Student / Teacher Ratio
HILO COMPLEX							
Kohala Elementary School	Public	K-5	449	385	-64	14.2%	14.4 to 1
Kohala Intermediate School	Public	6-8	295	183	-112	38.0%	8.9 to 1
Kohala High School	Public	9-12	453	231	-222	49.0%	13.5 to 1
Kohala Mission School	Private	K-8	47	N/A	N/A	N/A	24 to 1
University of Hawaii Hilo	Public	University	3608	N/A			N/A
Hawaii Community College	Public	2-year	2551	N/A			N/A

The University of Hawai'i at Hilo offers baccalaureate degrees through an arts and sciences curriculum. Although it emphasizes education in the liberal arts tradition, it also offers advanced degrees in indigenous languages and natural sciences. The campus also hosts the only accredited pharmacy school in the state. Hawai'i Community College focuses on providing access to others seeking a higher education. The University of Hawai'i Center: West Hawai'i further enables Hawai'i Community College to meet its educational goals by providing a place for learning for students in West Hawai'i. The college's curriculum centers on cultural competency, environment, Hawaiian culture and values, and workforce development. The college also offers the only known degree program in the art of Hula.

FIRE / EMS SERVICES

The Hawai'i County Fire Department has 20 regular fire stations and 22 volunteer fire stations. The nearest full-equipped fire station/EMS is the South Kohala Fire Station which includes not only a fire engine and ambulance, but also a medi-vac helicopter. The South Kohala Fire Station is located between Mile Marker 71 and 72 on the Queen Ka'ahumanu Highway.

POLICE AND CORRECTIONAL FACILITIES

The Hawai'i County Police Department is in charge of enforcing all Federal, State, and local laws in Hawai'i County. Hawai'i County has a main police station in each of its eight districts. The police station in South

Kohala has a total of eighteen sworn officers who cover a jurisdiction of 668 miles. In the South Kohala District, the law enforcement personnel to population ratio is approximately 1.37 officers per 1,000 residents. There are two correctional facilities located in East Hawai'i: Hawai'i Community Correctional Facility in Hilo and Kulani Correctional Facility.

BUS SERVICE

The Big Island is currently served by the Hele-On Bus Program which provides a total of fifteen routes around the entire county. Currently, there are no bus routes that travel along the Akoni Pule Highway.

North Hawai'i Community Hosital (21 miles distance by car)

The North Hawai'i Community Hospital and Lucy Henriques Medical Center provides acute medical facilities for South Kohala and Hāmākua. There are a total of 35 beds at this medical facility.

Hawai'i Volcanoes National Park (99 miles distance by car)

Hawai'i Volcanoes National park was established through an Act of Congress in 1916. The park is the island's most visited attraction, with over 2.6 million visitors passing through the park gates annually. The park encompasses 333,000 acres and includes the state's two active volcanoes: Kīlauea and Mauna Loa. The park is a full service recreational facility of the National Park Service, including lodging, concessions, interactive visitor centers, and numerous trails.

PU'UKOHOLĀ NATIONAL HISTORIC SITE (1 MILE DISTANCE BY CAR)

Located south of the Kawaihae homestead, Pu'ukoholā Heiau was built around 1790-1791 by Kamehameha I. In addition to the heiau, the home of John Young is located on the park's grounds. Adjacent to the heiau is Pelekane Bay. Hale of Kapuni, an ancient heiau located underwater was once located in the bay.

PARKS

Spencer Beach Park is the nearest public beach park to the Kawaihae homestead. This County-managed park is protected by a large reef and a portion of the Kawaihae Harbor breakwater.

Located north of Kawaihae (12.4 miles) is Lapakahi State Historical Park. It is the site of an ancient Hawaiian settlement encompassing 265 acres of land along the Lapakahi Marine Life Conservation District. A self-guided tour leads visitors through this preserved traditional Hawaiian community,

KONA INTERNATIONAL AIRPORT

The Kona International Airport lies south of Kawaihae. Currently, Air Canada, Alaska Airlines, American Airlines, Delta Airlines, Hawaiian Airlines, Island Air, Japan Airlines, go!, Northwest Airlines, Pacific Wings, United Airlines, U.S. Airways, and West Jet provide direct air service for the U.S. mainland, Japan, and inter-island destinations. In 2006, Kona International Airport welcomed over 1.3 million domestic and international visitors.

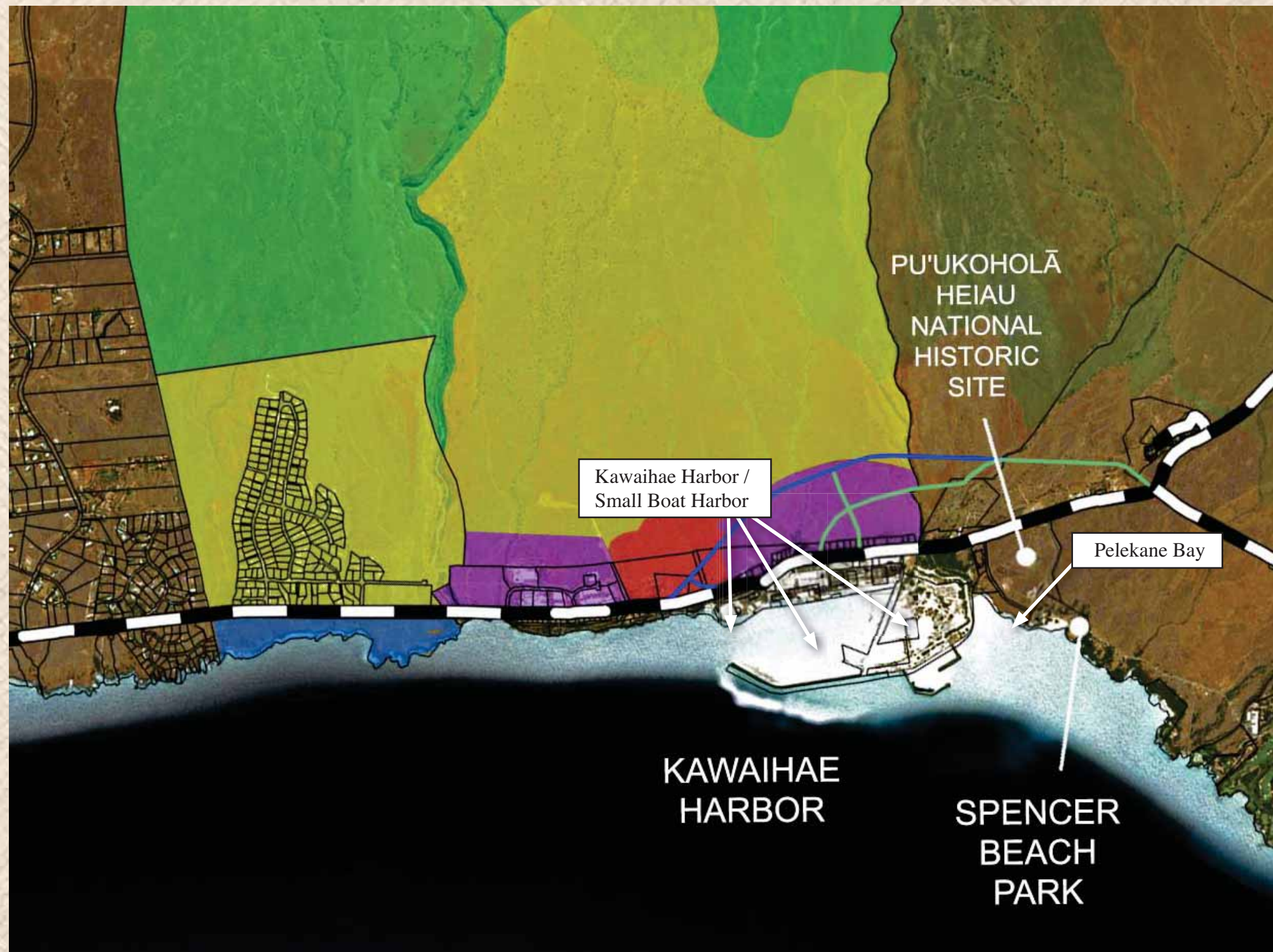
KAWAIIHAE HARBOR AND KAWAIIHAE SMALL BOAT HARBOR

Kawaihae Harbor serves as the primary entry point for goods in West Hawai'i.

The Kawaihae Small Boat Harbor is managed by Hawai'i Department of Land and Natural Resources (DLNR). This harbor is utilized primarily by local boaters for recreational purposes. The small boat harbor is also home to the Kawaihae Canoe Club which brings paddlers together to enjoy "The Harbor" Beach.



Infrastructure - Public Facilities



Potential Kawaihae Projects

The final “layer” in the development of DHHL’s regional plans involves a series of planning meetings with homestead lessees and other regional stakeholders in order to identify and discuss issues that should be addressed in the regional plan. The planning meetings also seek beneficiary input on potential projects that could be developed to address specific issues; service beneficiary needs, or enhance the quality of life for the homestead community. Departmental projects and projects planned by other landowners in the region are also identified and opportunities to forge development partnerships are explored. Through this process, a list of potential projects is developed and discussed. Beneficiaries are then asked to identify their top priorities that they would like to implement within the next 1 to 3 years. The resultant “Priority Projects” are then developed in further detail, providing information on the description of the project, potential partners, implementation phasing, and an estimate of implementation costs are presented.

The potential projects identified for Kawaihae fall into the following four (4) general categories and are presented below:

- Residential Homestead Needs
- Infrastructure Development
- Economic Development
- Resource Management

RESIDENTIAL HOMESTEAD NEEDS

1. ON-SITE POSTAL MAIL SERVICE

- Work with U.S. postmaster to establish a carrier route to Kawaihae.
- Develop a gang mailbox facility for existing and future residential subdivisions on 14-acre parcel at the end of Kailapa Street..
- Design other uses into the gang mailbox facility including: a safe, protected area for children to catch the school bus; a driveway that facilitates the efficient flow of passenger vehicles, post office carriers, and school buses in and out of the facility; and other community facilities.

2. PRESCHOOL DEVELOPMENT

- Approach Kamehameha Schools and other similar educational institutions to build and manage a preschool in the Kawaihae homestead.
- Develop a design plan for a preschool site at the proposed 14-acre parcel at the end of Kailapa Street.

3. NĀ PUA KA ‘ILIMA COMMUNITY GARDEN

- Develop a community garden plan that incorporates the community vision for a dedicated parcel of land for community gardening and other compatible uses.
- Determine the entity that should be responsible for the development and maintenance of the

community garden.

- Develop a budget and apply for grants in order to secure topsoil and other basic gardening supplies, tools, and equipment to facilitate planting.

4. RESIDENTIAL COMMUNITY SAFETY

- Install security cameras at major intersections of residential communities to promote safety.
- Coordinate with police department to recruit and train community members for citizen patrols.
- Provide basic funding for citizen patrol equipment.

5. RESIDENTIAL DEVELOPMENT DESIGN GUIDELINES

- Work with County to install downward facing street lights that reduce light “pollution” and glare and maintain the rural character of the area.
- Develop a design guidelines manual for future Kawaihae developments.

6. NATURAL DISASTER SAFETY EVACUATION PLAN

- Conduct an analysis of the risk to residents from various plausible natural disasters (tsunami, earthquake, fire, etc.).
- Identify potential locations to develop an emergency evacuation shelter for area residents and their pets.
- Identify existing private and/or government roadways that homestead residents could potentially access during emergencies.
- Coordinate with neighboring landowners, tenants, and government agencies to develop an emergency evacuation plan.

INFRASTRUCTURE DEVELOPMENT

1. KAWAIHAE BYPASS ROAD

- Work with DOT and its consultants to develop the preferred road alignment, connector roads, and phasing that meets the needs of the Department and the desires of the residential homestead community.
- Include a utility corridor along the Bypass Road that can accommodate all utility lines and reduce costs to underground all wires.

2. NEW WATER SOURCE AND TRANSMISSION

- Commission a ground water resource study to identify and develop necessary water sources and related water infrastructure in order to provide potable water for existing and future homestead lessees at Kailapa and Kawaihae.
- Identify methods to capture, store, transmit and use surface water resources for potable and/or non-potable water uses.

Potential Kawaihae Projects

3. KAWAIHAE HARBOR TRAFFIC MITIGATION

- Work with DOT-Harbors and Highways Divisions to develop traffic mitigation measures at Kawaihae Harbor and related connector roads.
- Design harbor access for ingress and egress to be mutually beneficial to DHHL and harbor users.

4. PEDESTRIAN, BICYCLE & BUS INFRASTRUCTURE

- Analyze traffic conditions and new road networks in order to identify and incorporate pedestrian, bicycle and bus infrastructure.
- Incorporate into design guidelines manual.

5. FLOOD MITIGATION

- Assess the potential risk of cluttered debris in Kawaihae's numerous drainage ways.
- Work with County and State agencies to bring work crews into the community to remove the hazardous debris.

ECONOMIC DEVELOPMENT

1. DEVELOP A MARKET FEASIBILITY ANALYSIS FOR COMMERCIAL, INDUSTRIAL, RETAIL, AND MARITIME LAND USES IN ORDER TO MAXIMIZE REVENUE GENERATION AT KAWAIHAE.

- Relate market demand analysis with the Harbor Master Plan and the development of the Kawaihae Bypass Road.

2. IDENTIFY ECONOMIC DEVELOPMENT OPPORTUNITIES FOR RESIDENTIAL HOMESTEAD ASSOCIATION(S)

- Identify economic development goals and opportunities for Kawaihae homestead associations to generate revenue in order to support the development and maintenance of community programs and infrastructure.
- Identify potential parcels of land for community based economic development.
- Provide organizational assessments, training, and build the capacity of homestead leaders to develop and manage revenue-generating activities.

3. RENEWABLE ENERGY AND TECHNOLOGY

- Work with DHHL to actively seek new general lease tenants whose business centers around renewable energy and technology in order to encourage its development at Kawaihae and in order to provide job opportunities for homestead lessees.

4. JOB TRAINING

- Identify and provide training for key job skills needed by Kawaihae businesses to enable

homesteaders to work, live, and play at Kawaihae.

- Coordinate State, County, University of Hawai'i, and other job training organizations to provide necessary services in Kawaihae.

RESOURCE MANAGEMENT

1. CULTURAL AND HISTORIC SITES

- Assess the current status of historical and cultural sites in Kawaihae.
- Work with the National Park Service to provide necessary safeguards to protect existing cultural and historical sites.
- Work with the State Historic Preservation Division (SHPD) to ensure proper relocation of remains to designated burial site in mauka portion of Kawaihae.
- Educate interested homestead lessees in the protocol of managing the reinternment site.

2. PELEKANE BAY

- Revisit findings from the 2003 Feasibility Study for the Pelekane Bay Ecosystem Restoration Project (2003-2007) and Pelekane Watershed Management Project (1992-2005).
- Work with U.S. Army Corps of Engineers, National Park Service, DLNR and other relevant government agencies to develop viable solutions to the environmental damage caused by Kawaihae Harbor to surrounding waters.

3. KAILAPA PARK

- Current plans include comfort stations, meeting hale, community garden, jogging trail, and site furnishings such as benches and picnic tables.
- Develop a passive park for the 72-acre parcel makai of Akoni Pule Highway that incorporates the community vision for this dedicated parcel.

4. REFORESTATION

- To ensure availability of water for future generations, a reforestation plan should be developed and implemented.
- As a member of the Kohala Watershed Partnership, DHHL and interested homestead lessees should develop reforestation and eradication priorities for DHHL lands.
- Existing homesteaders should be involved in any reforestation efforts on DHHL lands at Kawaihae.

5. JET SKI RESTRICTION

- Restrict Jet Ski use fronting Hawaiian Home Lands.



Priority Project - Kailapa Resource Center

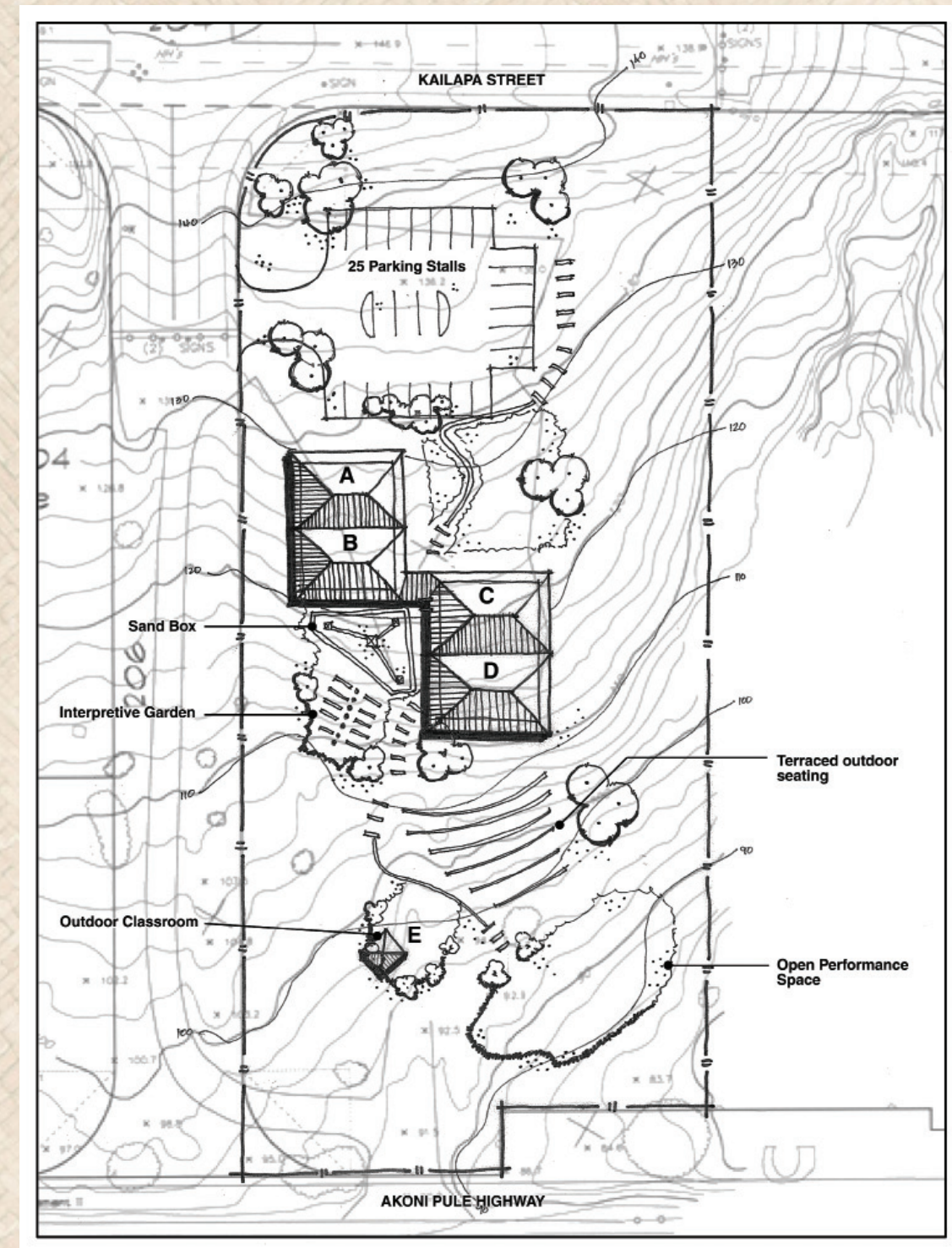
DHHL has issued about 200 residential homestead leases at Kawaihae. Although the current population is relatively small, the 10,000 acres of Hawaiian Home Lands at Kawaihae has the potential to house a large number of native Hawaiian families in the future. In order to service existing and future lessees at Kawaihae, the community has identified the need to develop the “Kailapa Resource Center.”

The Kailapa Resource Center utilizes a vacant 14.33-acre parcel of land located at the end of Kailapa Drive for the development of a mailbox facility, a community resource center and support facilities, a playground, and a preschool. The installation of a mailbox facility in the homestead community will address the current problem of residents having to travel 25 miles to Kamuela to pick up their mail. Development of a community resource center would provide residents with access to computers, the Internet, printers, fax, and teleconferencing. The preschool and playground facility will service growing families in the homestead area who would otherwise have to travel to Kamuela or Waikoloa for preschool education.

The co-location of these community resources in one location provides a focal center for the community. As the center point for the community, the Resource Center could be used as a transportation drop off/pick up point for school buses transporting K-12 students, and for Hele On County bus service, providing a viable transportation alternative to existing and future homestead lessees.

Bringing these community facilities to life, the community envisions the full range of programs and services that could be provided. Health and wellness education could provide information on food and nutrition (disease prevention/dealing with disease, cooking and eating fresh foods, food security). Drug abuse and domestic abuse information and support services could be offered. Various classes could promote sustainability practices (aquaponics, native plants), cultural practices (hula, lua, language, historic sites), and healthy lifestyles (walking/jogging, diet/nutrition). The Center could even be used as an extension center for online classes that can promote higher education opportunities right in the community. The Kailapa Resource Center can elevate Hawaiian consciousness in the community and instill knowledge, pride, and a sense of place and community for homestead lessees that have chosen to settle in Kawaihae.

In addition to the development of community resources at the 14-acre site, the Kailapa Resource Center would utilize large drainage culverts that run under the Akoni Pule Highway in order to provide safe pedestrian access to the shoreline. Shoreline access originating from the Kailapa Resource Center would allow the Center to develop the narrow shoreline parcel makai of Akoni Pule Highway for a number of potential uses including: a shoreline park, a community gathering area, walking/jogging paths, native plant revegetation, revitalization of the salt pans, the restoration of the King’s trail, preservation/management of cultural resources, management of shoreline resources.



Conceptual Layout of the Proposed Kailapa Resource Center

Priority Project- Kailapa Resource Center

Location:

Tax Map Key Number: 3-6-1-010:008

14.33 acre parcel located at the end of Kailapa Street.

Potential Partners:

DHHL, OHA, Alu Like, Inc., Kamehameha Schools, Queen Lili'uokalani Trust, University of Hawai'i, Hawai'i Community College, U.S. National Park Service, Hui Mālama, State DLNR, Boys and Girls Club, Family Support Services, Kohala Center, Kohala Watershed Partnership.

Project Phasing:

1. Conceptual land use development plan for the parcel.
2. Meet with Land Management Division and Planning Office staff in order to identify and address Departmental concerns:
 - a. Secure staff support for the project, re-scope project elements if necessary.
 - b. Identify project development strategy, development team and identify long-term project management.
 - c. Secure a Temporary Right-of-Entry Agreement and/or Preliminary Approval to Issue a Land Disposition Agreement to Kailapa Community Association in order to conduct site studies and due diligence work.
 - d. Identify and discuss long-term land disposition alternatives; determine preferred method of land disposition.
3. Identify development partners; secure partnership agreements.
4. Identify project development phasing and associated development costs.
5. Identify Project development financing strategy, including fundraising campaigns, grant writing, development partnerships, and other strategies to finance the project.
6. Secure long-term lease agreement with DHHL
7. Preliminary engineering and design work.
8. Chapter 343, HRS compliance (Environmental Assessment/FONSI)
9. Planning and Design work.
10. Secure building permit and other required permits.
11. Infrastructure Development (off-site/on-site)
12. Vertical Construction
13. Furniture and Equipment (interior)
14. Program Development and Staffing
15. Facility management, maintenance and repairs.

Project Cost:

Preliminary Planning and Design: \$150,000

Subsequent Phases: TBD

Potential Sources Funding:

USDA – Community Facilities Loans and Grants

Dept. of Education Native Hawaiian Career and Technical Education

Community Facilities Loans and Grants

HRSA – Development and Coordination of Rural Health Services

Institute of Museum and Library Services Native American and Native Hawaiian Library Services

Department of Health and Human Services Development and Coordination of Rural Health Services

Rivers, Trails and Conservation Assistance

Preschool providers

Department of Hawaiian Home Lands (DHHL) and Department of Land and Natural Resources (DLNR)

Office of Hawaiian Affairs (OHA)

National Park Service-Ala Kahakai Project

State, Dept. of Land and Natural Resources



Portion of parcel proposed location for the Kailapa Resource Center

Priority Project - Kawaihae Water and Energy Research and Development

The lack of potable water severely limits any type of new development in Kawaihae whether it's residential homesteads, industrial, commercial or recreational use. There is a current and future need to establish additional sources of potable water for the Kawaihae Area. The last Kawaihae Regional Plan completed in 1992, almost 18 years ago, has never been implemented because of the lack of potable water. This is a priority for the Department as well as the community.

The 2009 Kawaihae Regional Plan identifies the Kawaihae Water Resource Study as a priority project. In the 2010 regional plan update process, the community expressed their concerns about having to pay the highest water rates in the State, in spite of the fact that the Department subsidizes a portion of each water bill. The homesteaders feel the Department is not moving fast enough to address this issue. The homesteaders want to be a part of the solution. Specifically, they want to consult existing studies and talk to people who are knowledgeable about water issues in the area in order to understand the nature of water resources at Kawaihae. They want to identify and explore alternatives and want to determine the best source of water than can produce potable and/or irrigation water. They want to identify different methods to capture the 200-inches of rain that falls annually in the mauka part of DHHL lands and they want to identify ways to store and transmit the rainwater to the lower elevations that need the water.

The Homesteaders are also interested in learning more about renewable energy sources, renewable energy development, and various methods that can be used to store energy for use later. They are interested in producing energy for the residential subdivision or individual homes. This project focuses research on small to medium sized systems in order to identify energy sources and development options. They want to determine the most feasible option for development, and want to work with DHHL to locate the most feasible land option in order to secure a land disposition agreement to use the land to develop renewable energy for the community.

Location:

Ouli wells

Pending findings from water resource study.

Status: No movement since previous approval (April 2009), Research in progress

Phasing:

Phase I: Research and Data Collection – 3 to 6 months;

Phase II: Engineering Feasibility and Cost Analysis – 6 to 9 months

Project Cost:

Estimated Contract - \$150,000 – water study



Potential Partners: DHHL, County Department of Water Supply (DWS), Queen Emma Land Company (QELC), DOT, OHA

Potential Sources of Funding::

USDA Renewable Energy Systems and Energy Efficiency Improvements Program

USDA Rural Energy for America Program

Federal Research and Development grants

USDA Water and Wastewater Project Grant for Fund Establishment

USDA Water and Waste Disposal Loans and Grants (100% construction and enlargement funding for rural community water systems)

Work with Kohala Center and/or University of Hawaii to have research conducted

Priority Project- Kawaihae Bypass Highway

Rapid population growth, increased traffic congestion, and the modernization of Kawaihae Harbor will place additional strain on existing roads around the Harbor. The State Department of Transportation is planning to develop a highway that will be located south of the existing Kawaihae Road and will connect the Mamalahoa Highway with Akoni Pule Highway and Queen Kaahumanu Highway. At its eastern end, the proposed highway will intersect in the vicinity of the Waimea Kohala Airport. At the western limit, the proposed highway will intersect the Queen Kaahumanu Highway in the vicinity of either Puako or Hapuna Beach, and then continue in the northwesterly direction to intersect the Akoni Pule Highway in the vicinity of Kawaihae Harbor.

The main purpose of the highway is to provide a bypass of the existing Kawaihae Road in order to remove regional and local traffic from the existing Kawaihae Road and its associated intersections. The highway was constructed in 1934 and does not have the capacity to accommodate the current and forecasted traffic demand. The highway is needed to facilitate a safer and more efficient movement of goods and people in the east-west direction by providing a faster and improved highway link. In addition, the highway will support economic development initiatives proposed by the DHHL since it will provide access to lands that can be leased out for commercial and industrial activities.

During initial meetings with Kawaihae homesteaders, DHHL approached DOT and its consultants, E.K. Noda to discuss a preferred alignment that would address the traffic and transportation needs of residents in the area while also providing access to the development of new Hawaiian Home Land. DHHL and DOT have agreed upon developing a road alignment in the Kawaihae area that would be constructed in two phases.

The first phase of construction would begin at the intersection of Kawaihae Road and Queen Ka'ahumanu Highway. The road alignment would initially run mauka of Kawaihae and eventually split into two roadways that will connect to the primary and secondary gates of the Port of Kawaihae. The second phase of the alignment would branch off the newly completed Phase I roadway and run further mauka of Kawaihae town. The alignment would then connect to a section of the Akoni Pule Highway located north of the harbor.

Construction of the bypass and its connector roads will provide numerous benefits to the community. First, the completed bypass road's higher elevation will provide area residents a safe road that avoids the existing tsunami flood inundation zone. Completion of the road will spur further commercial and industrial lot development, which will in turn provide new job opportunities for homestead residents. Phase I of the road alignment will move toward providing

the needed infrastructure to relieve congestion around the port from future harbor related traffic. Lastly, once the bypass road is completed, the portion of Kawaihae Road fronting the Pu'ukoholā Heiau National Historic Site will be closed off to prevent vibrations caused by heavy vehicles which have been damaging the structures in the national park.

There are two primary challenges that face improving Kawaihae's roadways. Land mauka of Akoni Pule Highway is characterized by a relatively steep grade and numerous gulches limit the area where new road development is feasible. Secondly, the area directly adjacent to Kawaihae Boat Harbor and mauka of the existing highway has numerous burial sites.

Despite these challenges it's a priority that DHHL work with DOT and other relevant stakeholders in finding the necessary solutions that will provide an alternative road into Kawaihae while making every effort to mitigate the impact on the community.

Location:

Focus on developing the Kawaihae portion of the Bypass Highway

Project Phasing:

- Phase I: Intersection of Kawaihae Road and Queen Ka'ahumanu Highway to the Port of Kawaihae. 2-3 Years
- Phase IA: Port of Kawaihae to the Kawaihae community intersecting with Akoni Pule Highway. 2 - 3 years

Project Cost:

\$30 - \$41 million (Construction and Land Acquisition)

Potential Sources of Funding:

Federal Highways Administration (FHWA), Department of Transportation (DOT)



Priority Project - Improve the Marine Water at Pelekane Bay

Kūpuna homesteaders still remember pristine water conditions, thriving marine life, good fishing, and steady ocean currents that would naturally “clean and flush” the whole coastline. When Kawaihae Harbor was developed, the natural ocean current was redirected and the natural “flushing” activity was blocked. Today the marine waters off of Kawaihae have become stressed from significant alterations to the coastline from the development of the commercial harbor and also from increased sedimentation that enters the coastal waters from area streams and flash floods. The manmade coral flats and breakwater of the harbor block the natural ocean current along the coast. Consequently, silt and other pollutants are trapped at Pelekane Bay.

This project will identify potential allies and funding sources that will partner in order to restore the resources at Pelekane Bay. The Kohala Watershed Partnership has received federal funds through a National Oceanic and Atmospheric Administration (NOAA) coastal restoration grant to improve the condition of the Pelekane Bay watershed on the leeward coast of Kohala Mountain on the Island of Hawai‘i.

The Pelekane Bay Watershed Restoration Project is one of two Hawai‘i habitat restoration projects selected for funding by NOAA through the American Recovery and Reinvestment Act. NOAA announced the selection of 50 high quality, high priority projects to support more than 5,000 jobs and restore U.S. coasts on a grand scale. The Pelekane Bay Watershed Restoration Project will focus on reducing land-based sediment inputs into the nearshore environment as the initial step to rehabilitating Pelekane Bay.

Actions to improve the marine water quality along the coast involve moving forward with feasibility studies to examine different alternative strategies or a combination of strategies for improving marine water quality.



Pelekane Bay filled with mud and silt, with Pu‘u Koholā Heiau in the background.

Priority Project- Improve the Marine Water in Pelekane Bay

Previously Proposed Mitigation Strategies:

- 1) Mitigate the amount of sediment run off that enters the ocean.
- 2) Dredge Pelekane Bay to remove the existing silt build up.
- 3) Restore the natural ocean currents along the coastline by constructing a wash out circulation channel between the harbor and Pelekane Bay.

Course Of Action:

Move forward with feasibility studies to examine different alternative strategies to improve marine water quality along the coast.

Status of Previous Studies:

In 2002, the Corps of Engineers with the Mauna Kea Soil and Water Conservation District began a feasibility study to assess the feasibility of restoration actions including sediment reduction facilities, erosion control measures, and a circulation channel.

In 2005, the Mauna Kea Soil and Water Conservation District prepared the Pelekane Bay Watershed Management Plan which outlined several actions to help reduce sedimentation including the creation of a sediment/catchment basin(s), dredging Pelekane Bay to remove silt and creating a washout channel to restore ocean circulation. It was determined that all of these potential actions would require significant amounts of funding to implement and require intensive federal, state and county interagency collaboration. There have been differing views over which course of action would be most efficient, feasible to implement, or cost effective. The Plan recommended that studies be undertaken to determine if any of these concepts deserve further attention.

In February 2008, The Pelekane Bay Watershed Sediment Runoff Analysis was completed as a technical study for the Corps of Engineers and Mauna Kea SWCD feasibility investigation. No funding was required until the project was approved to continue into the design phase but Mauna Kea Soil and Water Conservation District was seeking an agency with funding to co-sponsor the project. They found no co-sponsors to financially support the project so the study was terminated.

Unless a new sponsor is found, the feasibility study investigations of Pelekane Bay will not resume. The State DOT is now working with the Army Corps of Engineers to utilize the existing Kawaihae Deep Draft Harbor Navigational Study to analyze the circulation channel as it may benefit the circulation of Pelekane Bay and its impact on Kawaihae Harbor. By pursuing this course of action, both State and Federal funds are currently available to proceed with this specific study. The Corps will analyze various channel connection alternatives between Kawaihae harbor and Pelekane Bay. The study is limited to determining the feasibility of a circulation channel and the navigational and water circulation impacts within Kawaihae Commercial Harbor.

Other actions in addition to studies of the circulation channel need to be taken. Other local sponsors will be needed to co-sponsor additional feasibility studies and restoration projects to reduce sedimentation runoff into the bay and also to possibly dredge Pelekane Bay in order to remove existing sediments.

Project Phasing:

The State DOT is currently working with the Army Corps of Engineers. Community stakeholders need to pursue their elected officials to appropriate funding for sponsorship of the remaining studies.

Project Costs

The cost to complete the feasibility studies will be cost shared 50:50 with the local sponsor and the Corps of Engineers. Design and construction of restoration projects will be cost shared 25:75 with the local sponsor and the Corps.



Kawaihae Commercial Harbor with Pelekane Bay in the background

Priority Project - Management and Maintenance of Kawaihae Reinternment Site

In 1994, DHHL established a 5-acre reinternment site on its lands at Kawaihae for 'iwi that are discovered within the ahupua'a. The reinternment site is a permanent burial site. The site requires ongoing management in order to keep the vegetation under control. Some landscaping, planting of trees, and watering would ensure that the site is properly and respectfully cared for.

The Department is looking for assistance to maintain the reinternment site. The Department would prefer that the homestead association in the area provide this assistance. Maintenance of the site would require the site manager to have a set of keys in order to the site for maintenance purposes. The site is located near an existing well that produces enough potable water for landscaping. The location of the site is midway between the Akoni Pule Highway and the mauka road. The site is located near the boundary of Kohala Estates and can be accessed through existing paved and graveled roads. Future access may be from roads constructed within DHHL's property.

Kailapa Community Association is interested in providing maintenance assistance for the site. The association would like to conduct a site visit in order to get a better idea of the maintenance requirements. The Association has a board member who is an arborist who has a nursery of native Hawaiian plants that could be suitable for the site. The Association is interested in planting some trees at the site, as a pilot reforestation project. The pilot project would provide landscaping for the reinternment site while also providing valuable information on how various trees and plants respond to different elevations and climate regimes at Kawaihae. This information will assist the Association in developing a reforestation plan for Kawaihae.

Due to the critical need to develop and maintain water sources at Kawaihae, and the fact that Kawaihae lands have been used for pastoral/ranching purposes, homesteaders are recognize the need to focus on land restoration work, including reforestation (planting), animal eradication and/or fencing, and other soil erosion control methods.

There is also the opportunity to work with the Kohala Watershed Partnership in order to secure training, education, and fieldwork experience with regard to reforestation theory and practice.

Current Status: The association is working with native plant specialists to determine the proper types of plants to be placed in the area.

Location:

Kawaihae, approximately 1,600-foot elevation level.

Project Phasing:

1. Identify homesteaders interested in working on this project.
2. Seek Right of Entry Permit (ROE) from Land Management Division to access and manage reinternment site.
3. Consult cultural practitioners regarding best practices for maintaining and landscaping a reinternment site.
4. Develop a planting/landscaping plan for the site; determine whether fencing is required.
5. Identify regular maintenance schedule to properly care for site
6. Initiate pilot reforestation efforts on site and potentially along the access road to the site.
7. Identify homesteaders who are interested in working on watershed restoration.
8. Determine how the homestead community can work with the Kohala Watershed Partnership in order to build relationships, coordinate efforts, and gain field experience.
9. Work with the Kohala Watershed Partnership, Forest and Trials and other partners on restoration projects, with particular attention to management efforts on Hawaiian Home Lands and the mawaena area.
10. Explore the possibility of establishing a native tree nursery to support ongoing reforestation efforts.
11. Work with the Kohala Watershed Partnership and DHHL to develop a reforestation plan for appropriate areas on DHHL Kawaihae lands, including: Kawaihae uka, waena, and Honokoa Gulch lands.
 - a. Consider access, water availability, water ditch systems, forest lines, and existing jeep roads.
 - b. Incorporate fire prevention and protection recommendations.
 - c. Address the need to remove and/or contain invasive species and feral animals.

Priority Project - Management and Maintenance of Kawaihae Reinternment Site

Project Cost: TBD

Potential Partners:

The Kohala Watershed Partnership
Department of Hawaiian Home Lands
Hawai'i Department of Land and Natural Resources, DOFAW, Statewide Watershed Partnerships.
The Kohala Center
Parker Ranch
Kahuā Ranch
Ponoholo Ranch
Kamehameha Schools
Queen Emma Foundation
Surety Kohala Corporation
Laupahoehoe Nui, LLC
Hawai'i County Department of Water Supply
The Nature Conservancy
Department of forestry and wildlife
Outdoor Circle

Potential Sources of Funding:

EPA Community Action for a Renewed Environment (CARF) Program
USDA Soil and Water Conservation
Dept. of Interior Undesirable/Noxious Plant Species
Dept. of Interior Invasive and Noxious Plant Management
Environmental Quality and Protection Resource Management
USDA Rural Development, Forestry, and Communities
EPA Assessment and Watershed Protection Program Grants
EPA Targeted Watersheds Grants
USDA Watershed Restoration and Enhancement Agreement Authority
USDA Rural Development, Forestry and Communities (2)
USDA Forestry Research
USDA Cooperative Forestry Assistance



5-Acre Reinternment Site at Kawaihae



