

# WEST KAUA'I

(Waimea, Kekaha, Hanapēpē)



## REGIONAL PLAN

February 2011



WEST KAUA'I



DEPARTMENT OF HAWAIIAN HOME LANDS

Alapaki Nahale-a  
Chairman  
Hawaiian Home Lands Commission

HAWAIIAN HOMES COMMISSION

Malia Kamaka (West Hawai'i)  
Perry O. Artates (Maui)  
Henry Tancayo (Moloka'i)  
Donald S. M. Chang (O'ahu)  
Francis K. Lum (O'ahu)  
Trish Morikawa (O'ahu)  
Stuart Hanchett (Kaua'i)

Robert J. Hall  
Deputy to the Chairman

M. Wai'ale'ale Sarsona  
Executive Director to the Office of the Chairman

DEPARTMENT OF HAWAIIAN HOME LANDS

Hale Kalaniana'ole  
91-5420 Kapolei Parkway  
Kapolei, Hawai'i 96707

[www.hawaii.gov/dhhl](http://www.hawaii.gov/dhhl)

Office of the Chairman  
Telephone: (808) 620-9500  
Facsimile: (808) 620-9599

Mailing Address: Planning Office  
P.O. Box 1879 Telephone: (808) 620-9480  
Honolulu, Hawai'i 96805 Facsimile: (808) 620-9559

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# I. Introduction - Regional Plan Goals & Process

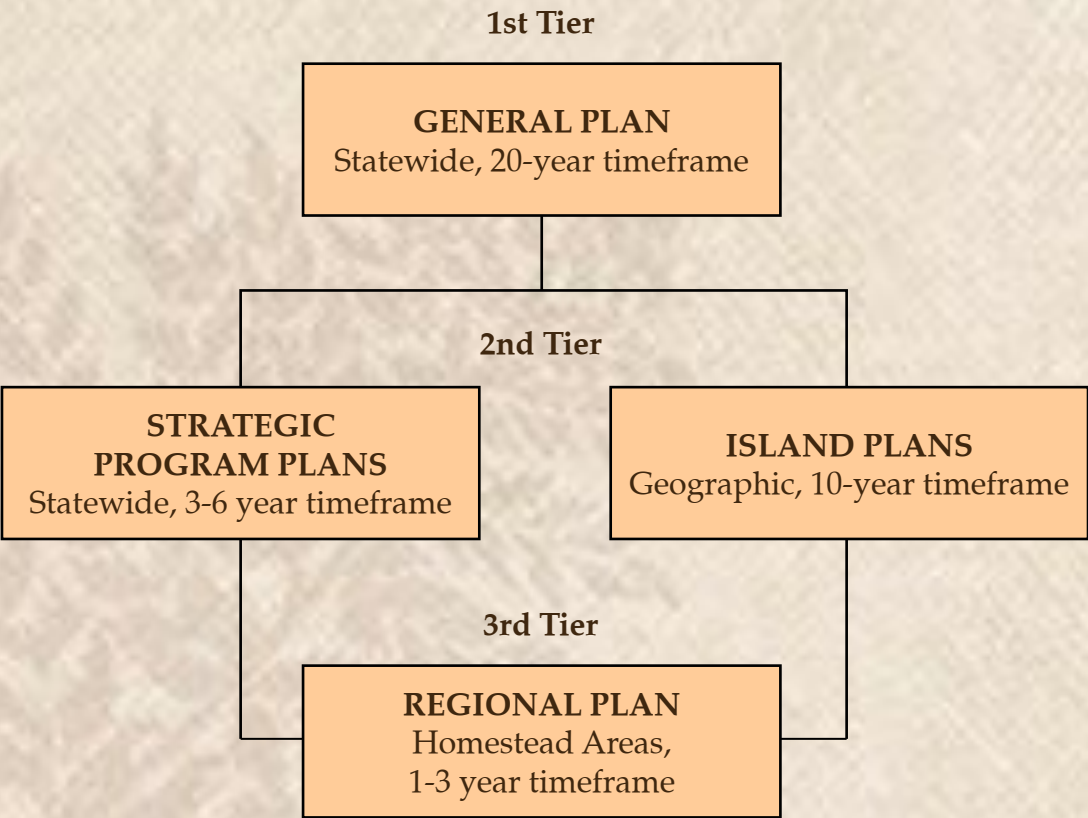
The mission of the Department of Hawaiian Home Lands (DHHL) is to effectively manage the Hawaiian Home Lands Trust and to develop and deliver lands to native Hawaiians. To accomplish this, DHHL works in partnership with government agencies, private landowners, non-profit organizations, homestead associations, 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. West Kaua’i is one of three regions on Kaua’i that have been selected for regional planning. 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 diagram to the right). 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.





# Introduction - Regional Plan Goals & 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 the diagram below. 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 is 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.





# Introduction - Partnering Benefits

## Benefits of Partnering

DHHL is working in partnership with other government agencies, the private sector, and community organizations to develop its lands and improve community life. DHHL believes that partnerships are an effective way to leverage resources and capital investments, mitigate undesirable impacts of development, coordinate area growth, reduce risks in large-scale community projects, and create broad community benefits.

These partnerships allow for better prioritization and coordination of infrastructure improvement and the development of regional public and residential facilities. This coordination helps individual organizations achieve their goals while bringing long-term benefits to the community and region.

DHHL brings to these partnerships:

- Land for development in strategic locations
- 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



Getting the community involved



## Successful Partnerships

### Residential Partnerships

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 Menehune Development and Honolulu Habitat for Humanity. In these types of partnerships, DHHL often provides the land, secures federal grants, and provides access to, or assistance in, acquiring tax credits, subsidies, or other financing.

### Infrastructure Partnerships

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 Waiawa-Waipahu water system on O'ahu. DHHL water systems at Anahola on Kaua'i, and Ho'olehua on Moloka'i are interconnected with nearby County water systems providing both parties backup source and storage capacity in the event of emergencies. 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.



Construction of residential homes



# Introduction - Partnering Benefits

## **Public Facilities Partnerships**

DHHL has participated in a number of partnerships involving public facilities and community resources. The most notable partnerships have 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 house preschools, offices, meeting facilities, health clinics, and activity centers. For example, the Paukūkalo homestead on Maui is served by a County park on DHHL land next to a community hall, the DHHL district office, the Hawaiian Community Assets' home ownership counseling center, and a Kamehameha Schools preschool. DHHL, private businesses, government agencies, and private foundations have joined together to provide materials for playgrounds constructed by homestead associations and other community volunteers.

## **Natural Resource Management Partnerships**

Through a series of management partnerships with DLNR, the Nature Conservancy's Honouliuli Preserve, and other property owners, unique ecosystems and historic sites are being protected. For example, DHHL is partnering with DLNR to protect the red 'ilima (abutilon) in East Kapolei. Other 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. Beachfront recreational values are protected through management agreements with the City and County of Honolulu for Makapu'u, Kaiona, Kaupō, Waimānalo, and Nānākuli beach parks.



*A possible partnership opportunity, taro agriculture*



*A possible partnership opportunity, West Kaua'i irrigation systems*



## II. Homestead & Regional Demographic Profile

The census is the standard reference for demographic and other statistical information and regional profiles. Unfortunately it only occurs every 10 years and the decennial updates do not disaggregate estimates and projections by subregions like the West side. As such the framework for planning data in the years leading up to a new census is usually the island-wide data developed by the State Department of Business, Economic Development and Tourism (DBEDT). DBEDT prepares annual Data Books with this information. According to this information the 2008 population for Kauaʻi County was 63,689 for the entire island, and increase of 5,386. Some other summary statistics for 2008 include:

Registered Voters	40,323
Residential Housing units	29,781
Civilian labor force	33,450
Unemployment rate (1500 people)	4.4%
Jobs in Government in Kauaʻi County	4,400
Average Annual Wage	\$33,676
Visitors to Kauaʻi	1,030,647
Registered Motor Vehicles	74,344

West Kauaʻi is the region of the island that includes the lands from Hanapēpē to Mana. It includes some of the most productive agricultural lands in the State of Hawaiʻi. These lands are part of the ancient moku, or district, of Kona and Mana.

The landscape is dominated by the deep valleys cut by the Hanapēpē Stream and Waimea Stream with Waimea Canyon being the most prominent geological feature on the island of Kauaʻi. The lands slope downward from the peak of Kawaikini (el. 5,170 ft.) along the eastern portion of the region down Hanapēpē Valley into Port Allen, Kauaʻi's second commercial harbor.

From the mouth of the Waimea River the coastal region is dominated by the flat Mana plains where the plantation towns of Waimea and Kekaha, along with Hanapēpē-ʻEleʻele further east, form the chief population centers of West Kauaʻi.

In ancient times Waimea was often the capitol of Kauaʻi. During the 19th century Mana was also the site of one of the largest plantation villages on the west side. With the exception of a few abandoned structures, the town of Mana has disappeared completely.

With the closure of Kekaha Sugar Mill and McBride Plantation, the Pacific Missile Range is now the largest employer in the region.

<i>General Characteristics</i>	<i>West Kauaʻi</i>	<i>Kauaʻi</i>	<i>State</i>	<i>U.S.</i>
Total Population	7,115	58,463	1,227,008	--
Median Age (Years)	--	38.4	38	35.3
<i>Social Characteristics</i>				
High School Graduate or Higher	3,667 (78.2%)	32,368 83.3%	87.2%	80.4%
Bachelor's Degree or Higher	690 (14.7%)	7,551 19.4%	29.1%	24.4%
<i>Economic Characteristics</i>				
Median Income	--	\$45,020	\$53,554	\$41,994
<i>Housing Characteristics</i>				
Total Housing Units	5,617	57,831	482,873	--
Owner Occupied Units	3,673 (65.4%)	37,322	251,808	66.2%
Median Value - Single Family	--	\$216,100	\$364,840	\$119,600
Median Value - Condo	--	--	--	--
Renter Occupied Units	1,944 (34.6%)	20,509	175,865	33.8%
Median Gross Rent	--	--	\$871	\$519
Vacant units	--	--	55,200	9%
Homeowner vacancy rate	--	--	0.6%	1.7%
Rental vacancy rate	--	--	4.1%	8.1%
Home ownership rate	--	--	--	--
Median Age - Owner	--	--	--	--
Median Age - Renter	--	--	--	--

Source: American Factfinder 2005 & Honolulu Board of Realtors 2005.





# Homestead & Regional Demographic Profile

The DHHL lands in West Kaua'i are located in three (3) general areas:

- Hanapēpē (365 acres)
- Kekaha (52 acres)
- Waimea uplands (15,061 acres)

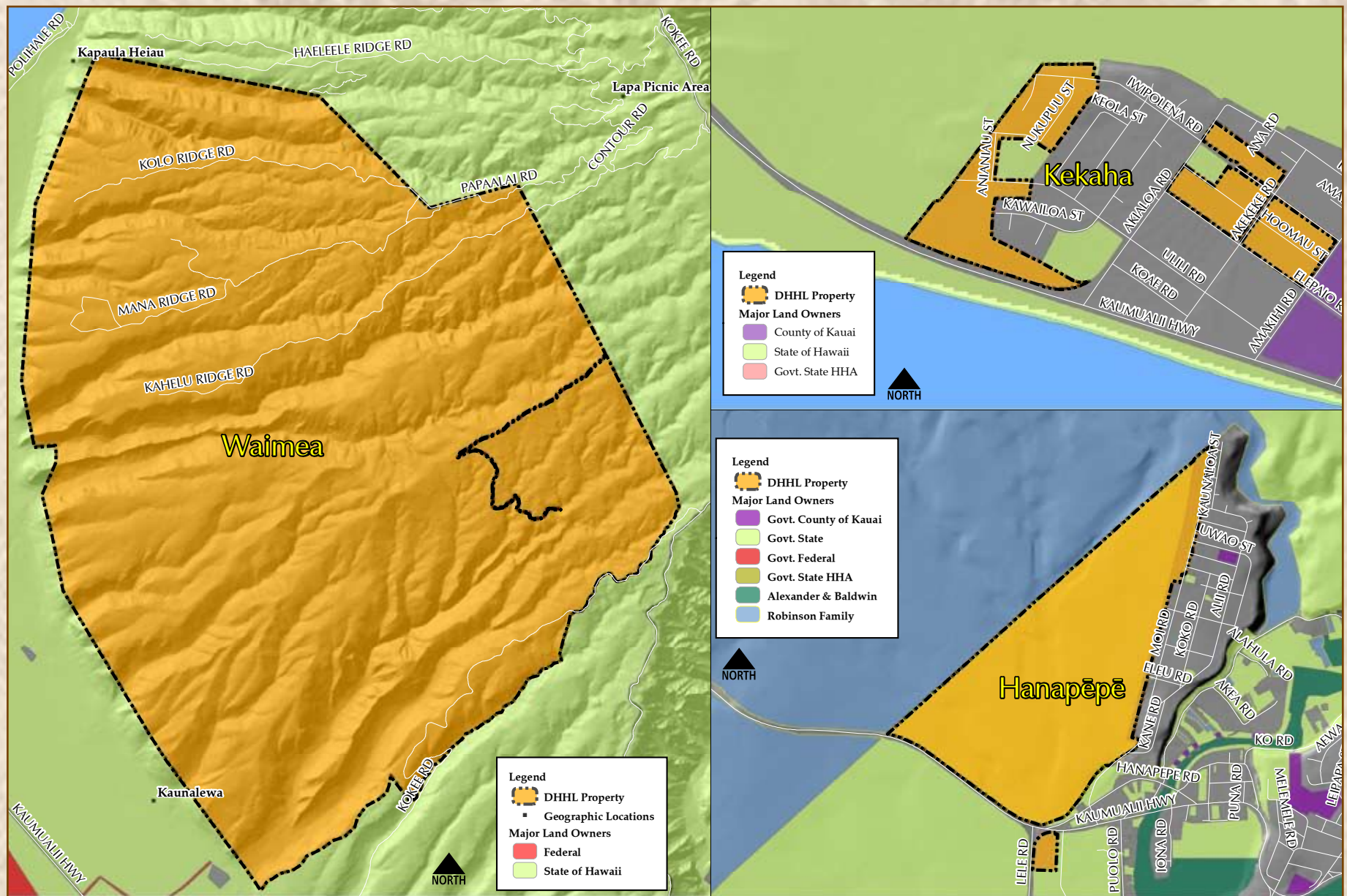
The last comprehensive population data comes from the General Characteristics of the 2000 Census. Data from the current census effort (2010) will not be available in time for this regional plan. The following population data summarizes the information from the 2000 Census.

Kaua'i County	58,303
Hanapēpē	2,153
Kekaha	3,175
Waimea	1,787

The following statistics from the State of Hawai'i Data Book for 2008 highlight some standard regional demographics. The State Data Book updates information but does not disaggregate it into regions. According to the 2008 Data Book update the Kaua'i County population in 2008 was 63,689; an increase of 5,386. A proxy breakdown can be found from other sources like the Real Estate website ZIPskinny which estimates the populations in West Kaua'i as:

Hanapēpē	2,475
Kekaha	2,930
Waimea	2,205

All communities show an increase except Kekaha which experienced the closure of Kekaha Sugar Mill during that interval. Since then, McBride Plantation has also closed and this has probably affected the population of Hanapēpē.





# Community Leadership, Involvement & Regional Stakeholders



West Kaua'i homesteaders working with DHHL in Regional Plan beneficiary meetings and site visits.

## West Kaua'i Regional Plan Beneficiary Meeting Participants

Ioane Agemoto	Myra Bucasas	Randall Hee	Analau Kaninau	Glenn Molander	Salle Potts
Liberta Albao	Shara Bucasas	Caron Hookano	Bert Kaohili	Bren Nakaahiki	Faisha Soloman
Dennis Alpeche	Jose Bulatao, Jr.	Robert Jackson	Glenn Kapahu	Lopaka Nakaahiki	Rose Vaivao
Dayne Aipoalani	Barbara Bulatao-Franklin	John Kaamiaina	Lawrence Kapuniai	Evelyn Olore	Harold Vidinha
Tony Aipoalani	Gweneth (Nakahiki) Cardejon	John Ka'aumona	Chris Kauwe	Vincent Pardo	Wendy Vidinha
Lyle Bargament	Kaimana Castanada	Ku'ulei Ka'aumona	Pauline Kupa	Leslie Paul	Van Kawai Warren
Lucia Bartels	Tano Castanada	Linda Ka'aumona	A. Big Boy Kupo, Jr.	Leah Pereira	Lyndon Yamane
Mary J. Bays	Myra Elliott	Joseph E. Kamai, Sr.	Joseph Manilo	Patrick Pereira	
Odetta Borja	Ruth Garza	Joseph Kanahele	Joseph Manini	Bruce Pleas	

## Regional Stakeholders

Aola Mau Na Kaleo	Mary Jean Sims	Lua Group	Alan Arquette
Kekaha Homestead Community Association	Betty Kali	Kikiaola Land Company	Michael Faye
SCHHA	Leah Perreira	Kōke'e Museum	Marsha Erickson
Kaua'i Hawaiian Civic Club	Liberta Hussey Albao	Pacific Missile Range Facility	Capt. Nicholas Mongillo, Base Commander
'Ele'ele Elementary School	Liela Nitta	KEDB - West Kaua'i Technology & Visitors Center, Waimea	
Kekaha Elementary School	Jason Yoshida	Knudsen Trust	Alitha Kaohi, Chairman of the Board
Ni'ihau High & Elementary	Nely Caberto (acting)	Gay and Robinson Trust	Stacey Wong, Trust Representative
Waimea Canyon Middle	Glenda Miyazaki	Kaua'i Veterans Hospital	Alan Kennett
Waimea High	Nely Caberto (acting)	KIUC	Jerry Walker, Regional CEO
Agricultural Development Corporation	Landis Ignacio		Randall J. Hee, President & CEO





# Elected Officials & Political Boundaries



**Neil Abercrombie**  
*Governor*



**Brian Schatz**  
*Lt. Governor*



**Daniel K. Inouye**  
*U.S. Senator*



**Daniel K. Akaka**  
*U.S. Senator*



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



**Stuart Hanchett**  
*Kaua'i Commissioner*



**Ronald Kouchi**  
*State Senatorial District 7*



**Daynette Morikawa**  
*State House of Representatives District 16*



**Alapaki Nahale-a**  
*DHHL Commissioner Chairman*



**Donald Cataluna**  
*OHA Trustee, Kaua'i & Ni'ihau*

**State Senatorial Districts**



**State House of Representatives Districts**



*Disclaimer: The information and recommendations expressed in this report are not necessarily endorsed by the people depicted on this page. These same people cannot be held liable for the information presented or the results of the report.*





### III. Regional Land & Development - History and Cultural Aspects of the Area

The lands covered by the West Kauaʻi Regional Plan include the ahupuaʻa of Hanapēpē, Makaweli and Waimea (roughly the same area as the judicial district of Waimea) which stretch from Kalāheo to Polihale. The region includes the towns of ʻEleʻele, Hanapēpē, Kaumakani, Waimea and Kekaha. ʻEleʻele is home to Port Allen, one of two major commercial ports on Kauaʻi. Hanapēpē has evolved into an arts colony along with tourism as another component of its economy. Kaumakani was built as a model plantation town in 1946. It was once a thriving community which was the heart of the Robinson Family sugar operations but as the industry shrank Kaumakani has become depopulated and its future is uncertain with the closure of the last mills on Kauaʻi. Waimea has deep layers of history and has been the center of the region since ancient times. In 2006 it was designated as one of a Dozen Distinctive Heritage Destinations by the National Trust, the first one in Hawaiʻi. Kekaha is the last of the historic towns that remain. The mill was the heart of the town and it is now seeking to find a new economy and identity as the last community before the end of the road on the West side. Historically, there was a sizable community in Mana near the end of the road at Polihale but with the demise of the sugar industry that town has literally disappeared.

#### *West Kauaʻi Pre-contact and Early History*

Kauaʻi is one of the earliest settlement areas of the Hawaiian archipelago. Anthropological estimates vary between 200-300 AD to 500-600 AD as dates for the initial migration probably from the Marquesas. The Menehune Ditch is also an indicator of early settlement as theories suggest this kind of stonework (dressed stone masonry) is linked to the Marquesas. Waimea along with Wailua have been the pre-contact centers of power on Kauaʻi since ancient times. Agricultural evidence of the cultivation and presence of canoe plants like kalo, kī, ʻawapuhi, olonā and others deep into Waimea Canyon also suggest early settlement.

Waimea in West Kauaʻi is also the site of the first landfall for Captain James Cook (1778). It is the first anchorage mapped by Westerners in Hawaiʻi and subsequent voyages by Captains Dixon (1786) and Captain Meares (1787) stopped at Waimea. In 1790 sandalwood was discovered at Waimea by American Captain Kendricks. In 1815, a Russian-American company was given permission to build forts at Waimea. In 1820, New England missionaries Whitney and Ruggles settled in Waimea. In 1821, King Kaumualiʻi was kidnapped by Liholiho and this ended Kauaʻi's status as an independent political entity. In the ensuing years before sugar became king during the middle of the 19<sup>th</sup> century, sandalwood and whaling were the mainstays of the export economy of Kauaʻi as it was for the rest of the Hawaiian Islands.

#### *Plantation Era*

For over two centuries agriculture dominated the economy of the islands and West Kauaʻi's economy was no exception. Kekaha and Olokele Sugar Mills in West Kauaʻi were the last two sugar operations on the entire island until their closures in 2004 and 2008. Agriculture is still a mainstay of the district with seed corn operators such as Pioneer Hybrid and Northrup King utilizing hundreds of acres each, however, Monsanto recently announced the pending closure of their operations adding some uncertainty about the future. Kauaʻi Coffee is grown on some of the former McBryde Sugar Plantation lands. Some diversified agriculture is still practiced in West Kauaʻi in taro and truck farms but the numbers are small. Aquaculture operations are beginning to emerge as alternative uses to the former cane lands.

#### *Post-plantation West Kauaʻi*

Today, the largest employer in the region is the Pacific Missile Range Facility (PMRF) at Barking Sands and the Veterans Memorial Hospital in Waimea. More recently, interest in renewable energy projects such as biofuels and photovoltaic energy proposals have become prevalent in the region.

Tourism and its support services is another very important industry as the historic towns in the region, especially Hanapēpē and Waimea continue to draw visitors. The region has about 1% of the County's total visitor accommodations. The other draw is the spectacular natural geography from Kōkeʻe and Waimea Canyon to the great beaches at Polihale.



*Kekaha sugar mill*



# Regional Land & Development - History and Cultural Aspects of the Area

The State of Hawai'i and the Department of Hawaiian Home Lands are the two largest public landowners in the West Kaua'i region. Together, they have title to approximately 84% of the area's land. Most of the State land (46,000 acres) is in the mountain area with the remainder in the coastal plain. The majority of DHHL's property (15,061 acres) lies in the mauka areas behind Mana and Kekaha. The Gay and Robinson plantation, a family corporation, is the largest private land owner in the area, with more than 10,000 acres of land east of the Waimea River.

Other major land owners are the Federal government, which has 2,058 acres at the Pacific Missile Range, Kikāola Land Company, Knudsen Trust, and Kekaha Sugar Company. Kikāola and Knudsen Trust have most of their lands between Waimea and Kekaha, while Kekaha Sugar owns several parcels that total 107 acres at their mill and plantation housing site. The remaining land ownerships are mostly small properties located primarily in Waimea and Kekaha towns. The State and County also have small properties for public-facilities in the communities.





# Hawaiian Home Lands - Area

## Existing and Proposed Land Use Designations per Kauaʻi Island Plan

The three (3) areas of DHHL lands have different characteristics, conditions and opportunities. There is land to expand homestead leases in Hanapēpē and Waimea, however, development would require substantial funding for infrastructure development and the lands may be more suitable for agricultural development. Kekaha lands are nearing its capacity for homestead development. The DHHL has been negotiating with the State in order to secure more lands in the Kekaha area to expand residential homestead development around existing homesteads. The following summaries provide a quick overview.

### Waimea (15,061 acres, 1 pastoral lessee)

Existing land uses:

- 475 acres pastoral (5 lots; 3 leased to Joe Manini - 285 acres; 2 vacant - 190 acres)
- 840 acres vacant
- 20 acres of Diversified Agriculture (near the entrance to Waiawa Valley)
- 26 acres Military (U.S. Navy ammunition storage depot)
- 13,600 acres DLNR Game Management

All of the DHHL Waimea lands are located within the State Agricultural Land Use designation except for a small strip designated Conservation along the Nā Pali side of the property.

The following land uses are projected in the DHHL Kauaʻi Island Plan (May 2004):

- 202 acres Residential - proposed 141 one (1) acre residential lots
- 214 acres Subsistence Agriculture - proposed 50 three (3) acre subsistence agriculture lots
- 475 acres Pastoral
- 12,527 acres General Agriculture
- 1,258 acres Special District
- 42 acres Community Use
- 343 acres Conservation

The mauka lands occupy a vast area. Much of the area is leased to DLNR for public hunting leaving the remainder vacant except for the 415 acres in pastoral use. The flatter areas were leased to Kekaha Sugar and planted with sugarcane until the mill closed. The last harvest was completed in 2004. The remnants of the plantation infrastructure remain in the Kōkeʻe Ditch system (maintained by ADC) and the cane haul roads. This land is difficult and costly to develop but has great potential in a number of ways. Many areas have good soil for agriculture and this potential remains for other crops. Its conservation value point to native ecosystem restoration projects and support of traditional cultural practices. The

presence of Kōkeʻe Road through the eastern edge of the property present great opportunities for commercial capture of recreational and tourism traffic. Renewable energy production is another promising potential.

### Kekaha (52 acres, 117 residential lessees)

Existing land uses and proposed uses are the same in Kekaha as the lands are fully developed with the exception of Lot 51.

- 39 acres Residential
- 13 acres Special District

Except for Lot 51 along Kaumualiʻi Highway the DHHL lands in Kekaha are fully developed with residences. The County is also developing a community park in the heart of the new residential section of the DHHL Kekaha community. Lot 51 has been identified as a special district with potential for some community use and commercial opportunities. A cultural and community enterprise center has been suggested for the site. The main constraints on the site are its location in the tsunami inundation zone and the likely presence of subsurface burials on some portions of the site.

### Hanapēpē (365 acres, 47 residential lessees)

Existing land uses:

- 6 acres Commercial
- 10 acres Residential

The following land uses are projected in the DHHL Kauaʻi Island Plan (May 2004):

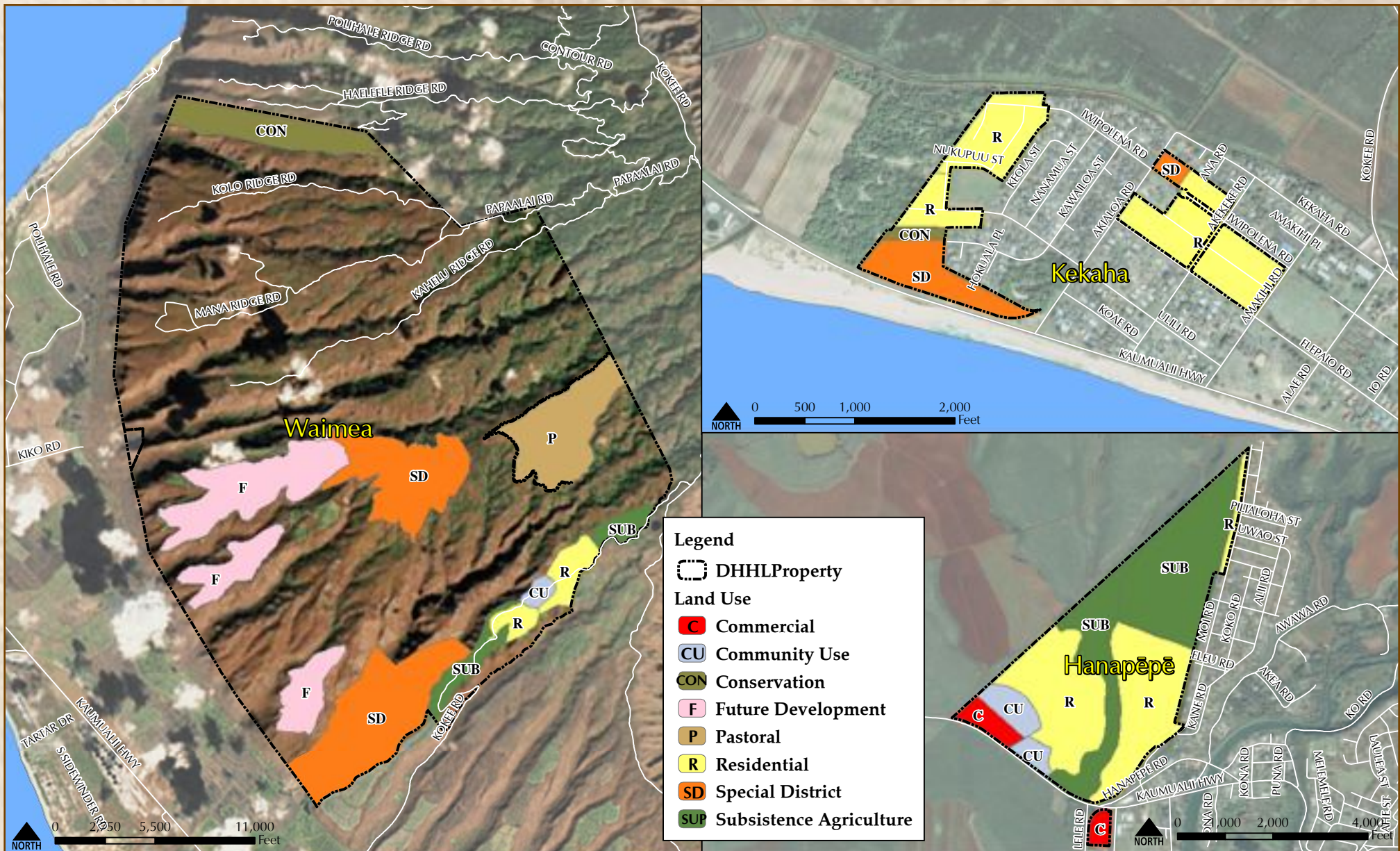
- 152 acres Residential
- 158 acres Subsistence Agriculture
- 22 acres Community Use
- 17 acres Commercial

Hanapēpē is essentially divided into two (2) areas. The first is a six (6) acre commercial parcel makai of Kaumualiʻi Highway on the intersection of the road to the airport and the salt pans. This site contains an old warehouse building currently occupied by a charitable organization selling second hand donations. This site has great potential for commercial development and revenue generation. The second area is the upland area which is separated by a shallow gully into two (2) smaller areas. The first smaller area includes the existing residential area accessed via Moi Road and containing 47 residential lots on ten (10) acres. The remainder of the site is vacant and currently leased to DLNR which has a sub-lease to Gay and Robinson. These lands have gentle slopes, water and great agricultural soils.





# DHHL Proposed Land Use Designations





# Development Projects Characteristics & Trends

## Developments in the Region

**The Pacific Missile Range Facility at Barking Sands (PMRF)** located five (5) miles west of Kekaha is the world's largest instrumented, multi-dimensional testing and training missile range. It is the only range in the world where submarines, surface ships, aircraft and space vehicles can operate and be tracked at the same time. There are 1,100 square miles of underwater ranges and over 42,000 square miles of airspace. The base is located on 2,385 acres and includes a 6,000 foot runway, maintenance facilities and approximately 70 housing units. It is the largest employer in West Kaua'i and continues to improve and expand its operations, providing jobs and services for the area.

In order to preserve its operational buffer PMRF has worked with State and local groups to develop a 6,000+ acre agriculture buffer adjacent to its lands. These lands are adjacent to the DHHL Waimea uplands. PMRF has also contracted ADC to maintain the ditches and pump system within PMRF.

**Agricultural Development Corporation (ADC)** is involved in the management of 12,500 acres of state-owned agricultural land and related infrastructure including two (2) ditch systems and an extensive drainage system fitted with two pump stations, an electrical system with two (2) hydroelectric plants and miles of roadway on the West Side. ADC is also responsible for the integrity and safe operation of three reservoir dams that are part of the irrigation system infrastructure. In 2003, under Executive Order 4007, ADC agreed to operate and maintain the infrastructure of the Kekaha Agriculture Cooperative. According to the Hawai'i Department of Agriculture (HDOA) the farm value of the agricultural products produced at Kekaha was between \$35-50 million.

The system that ADC is responsible for serves the DHHL Waimea lands. The community has suggested that some of the land under ADC management be swapped with the DLNR hunting land. Future development of agricultural uses on DHHL lands will involve coordination with ADC.

**Renewable Energy Projects in Kekaha** includes proposals by Pac West and Pacific Light and Power (PLP). The Kekaha Committee of the ADC voted on September 15, 2010 to lease the ADC mauka lands to PLP. PLP needs only the ADC lands to make its proposal feasible. PLP has a planned development for a 10 megawatt concentrated solar thermal power plant on 100 acres of farmland in Kekaha.

Pac West has been trying to lease thousands of acres of the ADC and DHHL lands to grow feedstock for its 20 megawatt power plant in Kekaha, and has acquired the 23 acres Kekaha Mill site. Pac West had the backing of the Kaua'i Island Utilities Company (KIUC) with whom it is negotiating a power purchase agreement. They are exploring biomass, solar, and hydro sustainable renewable technologies, but not wind power due to wildlife concerns. The community has expressed concern and opposition to this proposal and discussions are continuing.

**Kīkīaola Makai** is approximately 120 acres and scheduled for a total of 250 visitor units. This is inclusive of the existing Waimea Plantation Cottages. It is hoped this will provide necessary critical mass of resort units to maintain the visitor industry in the Waimea-Kekaha area.

**Waimea Expansion** is a collaboration with the County and Kīkīaola Land Company. It is projected to include 270 residential units and a golf course. The Waimea Wastewater Treatment Plant (WWTP) expansion is related to this development. Effluent from the WWTP will be used to irrigate the golf course. Affordable housing is also planned as a part of this project. The plan also calls for the designation of open lands and wetlands around Waimea Town.

**Kīkīaola Harbor:** DLNR Division of Boats and Outdoor Recreation (DOBOR) is proposing improvements to this harbor and surrounding lands (35 acres) are intended to assist local fishermen and tour boat operators. Some industrial and commercial uses are designated around the harbor along with residential uses and open space. The industrial and commercial uses are intended to help support the visitor and general recreational needs of Waimea Town and the planned tourism node centered around the town.

**Robinson Family Developments** were approved during the Kaua'i General Plan updates. Proposed long-range plans call for additional development of the 170 acres of coastal lands at Kapalawai (the old Robinson family estate) for resort and marina uses and the mauka lands for residential uses. The plan calls for the rehabilitation of the historic old Robinson family home and 250 additional resort units. The architecture will incorporate inn and residential style visitor accommodations and provide West Kaua'i with a second resort node. This project could provide alternative jobs for West side residents. Entitlements for these lands have lapsed and future development plans are uncertain at this time.

**Long Range Use of Pu'olo Point** remains viable and controversial as well. The encroachment of new development on the salt ponds and coastal tidal pools and marine environment raises concerns. Proposals to expand the Port Allen Airport (formerly Burns Field) to accommodate more helicopter tours have both supporters and opponents. Plans for developments of the lands immediately mauka of Pu'olo Point continue to pressure the need for preservation of the natural and cultural features of the site. The County has requested the long term closure of the airfield.

**Kōke'e State Park** has been the subject of a master plan contract since the late 1990s. The DLNR Division of State Parks has recognized the potential of kōke'e as a beacon of eco-cultural education tours, new recreational activities and natural resource restoration activity. These activities can support additional visitors and new support businesses. However, the costs for additional infrastructure in new trails, roadways, potable water, and wastewater facilities have slowed the further development of the park. However, this remains a potentially vital source of jobs and resources for Kaua'i.

**Port Allen** is Kaua'i's second commercial port and located in Hanapēpē Bay near the mouth of the Hanapēpē River. It is the western most commercial port in the State of Hawai'i and 106 nautical miles from Honolulu. Harbor facilities include two 600-foot long piers on opposite sides of the main pier structure. The north pier has a depth of 25 feet while the south pier has a depth of 35 feet. The north pier is designated for Navy/PMRF uses and the south pier is for various commercial and charter operations. The Navy considers Port Allen vital to the operations of PMRF. There are approximately 1.5 acres of shed and open storage space within the facility. The harbor is protected by a 1200 foot breakwater structure. To the north is a small boat harbor managed by the State DLNR DOBOR.

In the past Port Allen served the interests of the sugar industry. Military use of the Harbor is expected to continue for the foreseeable future. However, in recent years there has been an increase in tourism and recreation related use of the south pier. The demand for pier space now exceeds supply and there are plans to expand harbor facilities to relocate the military functions to a more seaward pier along the breakwater and to develop additional commercial piers on the land side of the breakwater with some fill areas and vacant land to enhance the economic viability of West Kaua'i.

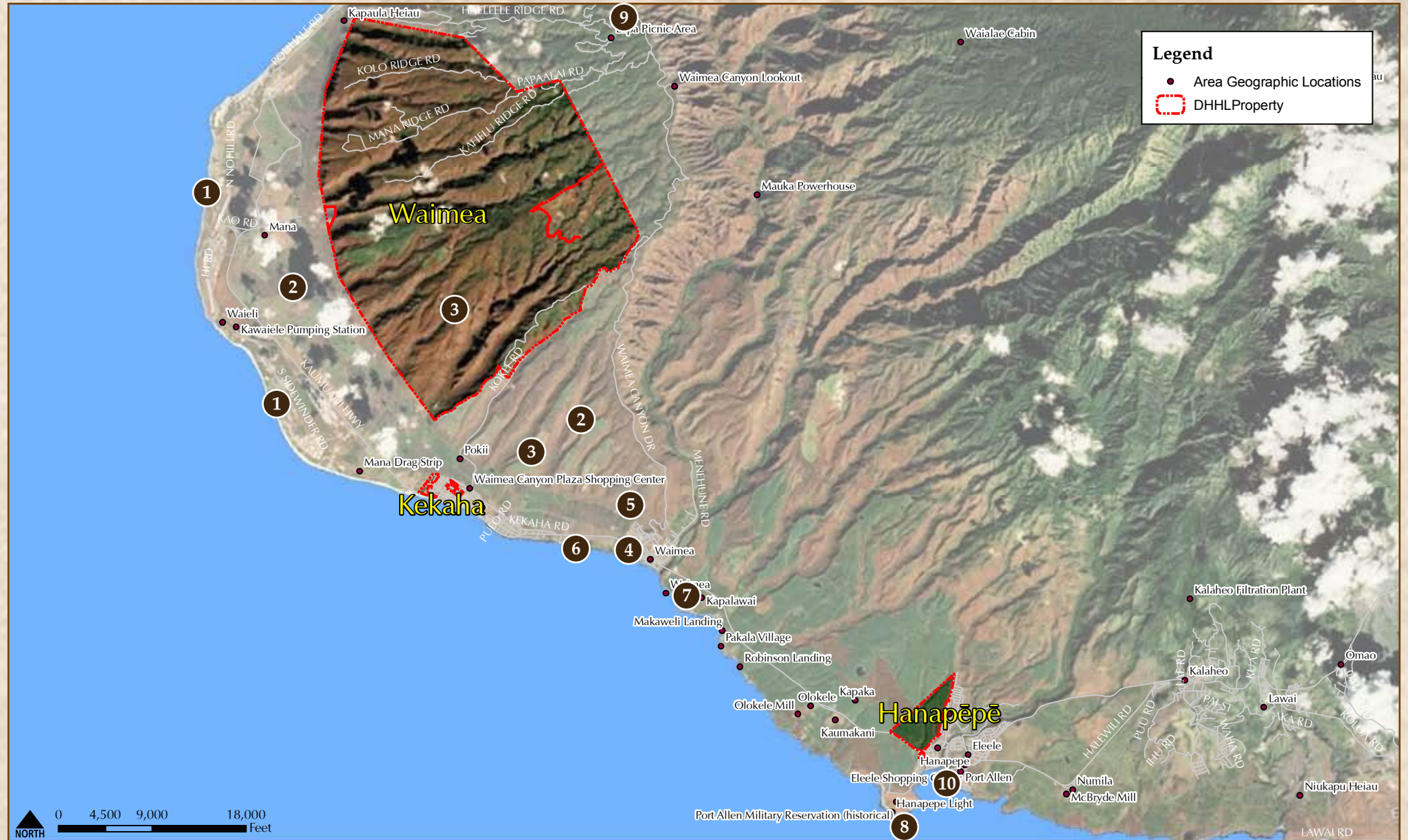




## West Kaua'i Regional Map

## Developments Key

- 1 PMRF/Barking Sands
- 2 Agricultural Development Corporation
- 3 Renewable Energy Projects in Kekaha
- 4 Kīkīāola Makai
- 5 Waimea Expansion
- 6 Kīkīāola Harbor
- 7 Robinson Family Development
- 8 Long Range Use of Pu'olo Point
- 9 Kōke'e State Park
- 10 Port Allen





## IV. Infrastructure - Water

### Existing Systems:

The County supplies water to Hanapēpē, Kekaha and Waimea towns from wells and storage tanks.

Kekaha Sugar Company also supplies water to the area - the plantation provides water services primarily to its housing on its lands at Kekaha and Mana. Although PMRF operates and maintains its own water system, the water is supplied by the County and by Kekaha Sugar Company. Water services to Polihale and Kōke'e are provided by the State.

Potable water is supplied to Waimea and Kekaha by two 0.3 MGD wells and the Waimea Shaft that supplies 0.6 MGD for a total supply of 1.2 MGD. Potable water is stored in three reservoirs with a total storage capacity of 0.85 MG. New wells and storage tanks are planned. The closest potable water source serves the DLNR lease properties and parks in Kōke'e. A 0.2 million gallon tank is located over five miles away in rough and hilly terrain. There is insufficient rainfall in Waimea for the use of water catchment system. Ditches and reservoirs, created for sugarcane cultivation, are located within DHHL's property. The ditch water could be used for irrigation and could also be treated and used as potable water if the ditches are adequately maintained.

The Hanapēpē system includes, a 500,000 gallon storage tank at an elevation of 360 feet, and the required transmission mains exists. At Makaweli, Gay and Robinson plantation supplies water to its villages at Pākalā and Ka'awanui. Water is provided through a surface water fed gravity system from mauka stream sources, unlike the other water systems in the region in which groundwater is tapped. The Hanapēpē fields are served separately by the ditch system maintained by Gay and Robinson.

Two major ditch systems serve the Waimea lands of DHHL: Kekaha Ditch and Kōke'e Ditch.

The Kekaha system begins with the Waiahulu and Koai'e intakes, deep in Waimea Canyon and travel through tunnels, ditches and flumes down through the Menehune Ditch and runs along the front of the Waimea Plateau region all the way to Mana. A series of pumps and siphons direct the water flow through the system. This system irrigates all the lower elevation lands from Waimea Town to Mana.

The Kōke'e Ditch starts with several high elevation intakes in Kōke'e and through a series of ditches and flumes directs water to Pu'u Lua Reservoir. Then, the system drops down to the Pu'u Moe Ditch Divide where it splits into two (2) separate branches. The western branch follows the ridges, serving the DHHL pastoral leases until it empties into Pu'u 'Ōpae Reservoir, where it serves the fields below it. The eastern branch runs parallel to the Canyon Rim and fills Kitano Reservoir. From there it serves the mauka lands above Kekaha and Waimea Towns. These two (2) systems are critical to agriculture on in West Kaua'i.

### Proposed Systems:

#### *Waimea Canyon School Waterline Improvements - CIP 2009-2010*

Construction for the installation of approximately 2,000 linear feet of 12-inch waterline along Kaumuali'i Highway between Huaka'i and Moana roads and approximately 1,900 linear feet of 12-inch waterline along Waimea Canyon Drive between Kaumuali'i Highway and Haina Road. \$2.5 million construction.



*A portion of the Kōke'e Ditch*







# Infrastructure - Drainage

## Existing Systems:

The ending of sugar cane operations has resulted in much of the land going fallow and alien grasses taking over the hillside. While this has been good for the reduction of erosion, it increases fire hazards on the sparsely settled unmanaged lands. Erosion of the old cane haul roads continues. The uplands of Waimea and the unused lands at Hanapēpē are subject to this kind of erosion and land use practices need to address this issue.

In several meetings the conservation value of the Waimea Uplands was mentioned. Vegetation on the slopes reduce stormwater runoff and mitigates flood hazards on the plains below. Whether reforested or used for commercial crops, the maintenance of a vegetation cover on the Uplands is important for safety and preservation of valuable topsoil.

The County of Kauaʻi has generally avoided the use of concrete lined channels to manage drainage. The Kauaʻi Vision 2020 describes a future in which “Kauaʻi streams run freely in their natural courses. Because of careful land management, Kauaʻi is free of concrete-lined drainage channels.” Even before the Vision statement the County Public Works Department had historically followed an unwritten policy of avoiding construction of concrete lined channels. As such vegetated ridges and ditches and retention basins abound within West Kauaʻi.

The DHHL Hanapēpē lands and Waimea uplands do not have a flooding problem. However, Kekaha is located in the broad Mana Plain which historically had a high water table and many wetland areas. The ditch and pumping system developed by the plantations made the area suitable for agriculture but the maintenance of the pumping is essential to maintaining ground water levels to avoid flooding.

Without the ditches and pumps, much of the lowlands from Waimea to Mana would slowly revert to wetlands and semi-wetland conditions. Groundwater levels would rise and much of the fertile lands would no longer be suitable for agricultural or residential use. Flooding would become a serious and frequent problem for the West Side. Rising groundwater tables would also jeopardize the operations at PMRF. The current ditch system is the result of over a 100 years of experience by the local sugar companies and reflect the wisdom gained over the years in resource allocation and flood control. It's maintenance remains a critical responsibility.

Site development requires elevation of the floor of buildings above the base flood elevation. Maintenance of the ditch system and the subsequent pumping is necessary not only for the continuance of agriculture but also for residential and commercial development in the Kekaha area. While there are no specific major drainage projects in West Kauaʻi, maintenance of the system left by plantation agriculture is vital to the continued viability of the region.

## Proposed Systems:

Management of Waimea upland hillside for agricultural use or reforestation.



*Irrigation ditch*



*Unmaintained irrigation ditch*



## Infrastructure - Drainage





# Infrastructure - Wastewater

## Existing Systems:

Wastewater Treatment is generally the purview of the County of Kauaʻi. Some larger developments have their own treatment facilities. Many older and private areas have their own individual wastewater systems (IWS) of cesspools or septic tanks and leach-fields. The Department of Health (DOH) regulates both the County and private wastewater treatment systems. The effluent of most county and private systems are used for irrigation. Groundwater contamination is not an issue at the current time.

The DOH has established an underground injection control (UIC) line throughout the State to regulate the injection of wastewater effluent into the ground. Below the line effluent can be disposed by injection into the ground. Above the line this is generally prohibited. Developments above this line must either transport their wastewater to authorized treatment plants or be designed to work with authorized systems like IWS where effluent is periodically pumped and disposed off-site.

The County operates four (4) wastewater systems serving Waimea, Hanapēpē-ʻEleʻele, Lihū-e-Hanamāʻulu, and the Kūhiō Corridor between Wailua and Kapaʻa. (County General Plan). On the West Side the County system serves ʻEleʻele-Hanapēpē and the Waimea Town area. Kekaha is not served by the municipal system.

The Waimea Plant is operating at full capacity and is currently undergoing plans for expansion. The use of \$7.5 million in federal stimulus funds are being used to upgrade the plant and expand its capacity from 300,000 gallons per day to 700,000 gallons per day. Total project cost is projected at \$12 million. The shortfall will be funded by State revolving funds. The design will include plans to allow further expansion to an ultimate 1.2 MGD facility in the future. The water will be treated to an R-1 level which will allow its reuse for unrestricted water reuse such as crop reuse and irrigation. This will reduce the County’s reliance on potable water for irrigation. This project will also allow the implementation of the Kīkīaola Land Company community master plan approved on the County General Plan. Kīkīaola is partnering with the County to develop the expansion of this plant.

The County’s treatment plant at Hanapēpē is operating at a little over 50% capacity. It was upgraded in 1995 and has a current capacity of 800,000 gallons per day. The collection service is needed to extend the service to Hanapēpē Heights. Further expansion of the plant may be needed to accommodate the full development of the DHHL Kauaʻi Island Plan designation for the Hanapēpē Heights area. Expansion into this area may include a partnership with DHHL. The Hanapēpē Heights Collection System is listed as a project in Hawaiʻi CWSRF Integrated Priority List of Projects and the budget is listed as \$5,000,000. Construction date is estimated at 2016.

In general the County is reluctant to expend scarce CIP dollars for wastewater treatment plants and is

moving to a system that favors dispersed local systems rather than large consolidated models. This is to reduce rising costs for expensive transmittal lines and pumping costs. Also, dispersed systems allow greater opportunities for wastewater reuse to reduce the use of potable water for irrigation.

## Proposed Systems:

Continued use of IWS for individual units and package systems for smaller projects.



Waimea wastewater treatment plant



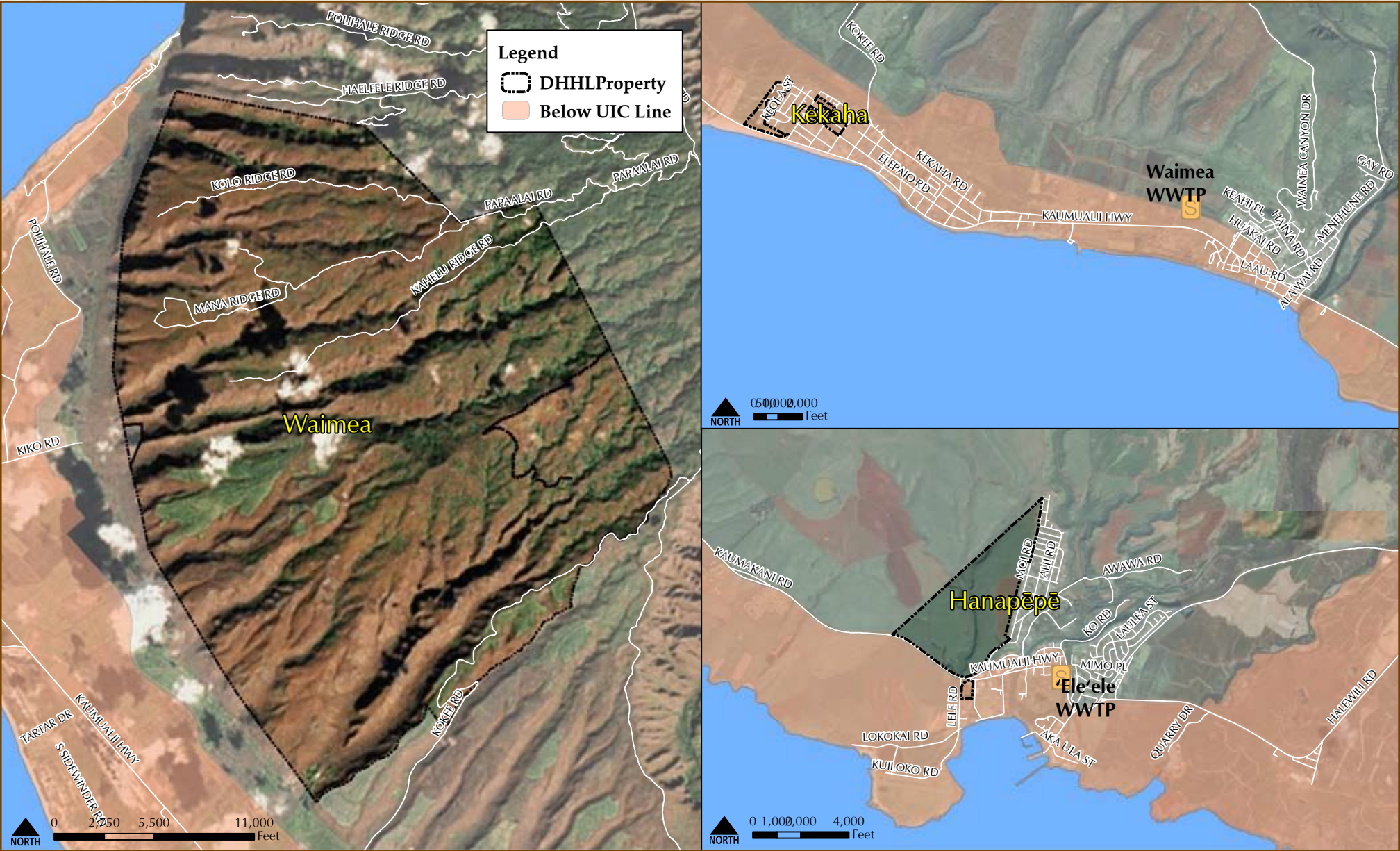
Individual wastewater system septic tank



Waimea wastewater treatment plant









# Infrastructure - Roads & Transit

## Existing Systems:

The transportation system for West Kauaʻi is described in the Kauaʻi County General Plan and the Kauaʻi Long-Range Land Transportation Plan (LRTP, May 2007) prepared by the State DOT. Funding priorities are generally tied to the Statewide Transportation Improvement Plan (TIP). Both the General Plan and the LRTP have a 2020 planning horizon. The LRTP is being updated to a 25 year time horizon.

The Main Roadway through the west side is Kaumualiʻi Highway. Coming from Kalāheo it connects the region to the rest of the island and ends in Mana at the Pacific Missile Range. It is a two lane paved roadway and extends westward from ʻEleʻele/Port Allen to Mana. Kōkeʻe Road is the main route up into Waimea Canyon and Kōkeʻe State Park.

In the State TIP there is an existing plan to widen Kaumualiʻi Highway from Waimea to ʻEleʻele into 4-lanes. There are also plans to resurface many minor roads within this segment of the Highway for \$3,000,000. There is also a signage and minor improvement plan for portions of Kōkeʻe Road to improve safety. There has been talk of a mauka by-pass road from Waimea to PMRF. However, this concept has not been formalized and is not listed in the TIP.

The LRTP and the General Plan both encourage a multi-modal solution to transportation issues that looks at public transit alternatives to increasing transportation capacity by increasing road capacity.

To this measure, Kauaʻi County operates a public (fixed route) bus service and an paratransit (door-to-door) bus service from Hanalei to Kekaha daily except Sundays and County holidays. The paratransit service is for senior citizens and some people in special needs categories and special programs. The Kekaha to Līhuʻe route is route 100.

Bikeways: Kauaʻi only has 3.8 miles of existing bikeways. The State master plan proposes another 173 miles island-wide. The existing County plan extends from Hanalei to Kōloa-Poʻipu-Lawaʻi. The plans currently do not include the West Side.

The Kekaha lands are served by Kaumualiʻi Highway and Kōkeʻe Road (State DOT facilities) and the side streets of Kekaha Town generally owned and maintained by the County of Kauaʻi. The Hanapēpē lands are located mauka of the Historic Hanapēpē town and accessed and served by County roads.

The Waimea Canyon side of the DHHL Waimea lands are accessed by Kōkeʻe Road. The pastoral lots are served by the old cane haul roads used by the sugar plantations. These roads can be reached from Kōkeʻe Road from the mauka direction or from makai by a number of the old roads. With the demise of the plantations these roads are becoming difficult to access due to erosion and lack of maintenance.



*Waimea Canyon Drive, DHHL lands on the left*



## Infrastructure - Roads & Transit





# Infrastructure - Public Facilities

## Existing Systems:

### Fire Stations

There are two (2) local fire stations, one located in Hanapēpē, and the other in Waimea Town.

### Harbors

Port Allen, in Hanapēpē, is Kauaʻi second largest commercial harbor. It is used primarily to serve commercial and agricultural shipping, as well as serve the operations at the PMRF. Adjacent to Port Allen is the Hanapēpē Small Boat Harbor, which is used by local fishermen and tour boat operators. Another small boat harbor is located in Kīkīaola, this harbor also serves the fishing and boating activities of residents and visitors.

### Health Care Facility

The region is served by the Kauaʻi Veterans Memorial Hospital and individual doctors practices in Waimea Town and Hanapēpē. The Hospital includes telemedicine service to improve patient care.

### Parks & Recreation Facilities

There are no parks on DHHL lands in West Kauaʻi at the present time. Homestead communities use existing State and County parks for recreational purposes. Several of the smaller County parks and recreational facilities are located within the community, adjacent to schools in the area. Future plans should include parks near residential areas.

Polihale State Park, Kōkeʻe State Park and Waimea Canyon State Park are major recreational areas for West Kauaʻi residents and visitors alike. They are geological and natural gems. Polihaleʻs sand dunes and beaches are famous throughout the State. Kōkeʻeʻs verdant upland forests house many endemic plants and animals, provide scenic vistas and a cool cloud forest for camping, hiking and picnicking. Waimea Canyon State Park encompasses the “Grand Canyon of the Pacific” and provides spectacular views and dramatic hikes. Russian Fort Elizabeth State Historical Park offers a glimpse of 19th century Russian activity on Kauaʻi. These sites of natural beauty and Pacific history are signature elements of Kauaʻi. The Division of State Parks goes a long way to protect and promote these beautiful areas.

### Police Stations

There is one local police station, the Waimea Police Station, it is located at 9735 Kaumualiʻi Highway. It is believed that police service in the area will be adequate in the foreseeable future.

## Schools

The following schools serve Kauaʻiʻs West Side Communities:

	GRADE	ENROLLMENT 2009/2010	PROJECTED ENROLLMENT 2015
WAIMEA COMPLEX			
ʻEleʻele Elementary	K-5	397	426
Kekaha Elementary	K-5	340	351
Niʻihau High & Elementary	K-12	8	8
Waimea Canyon Middle	6-8	424	452
Waimea High	9-12	729	740
PRIVATE			
Ke Kula Niʻihau Kekaha PCS	K-12	33	-
Kula Aupuni Niʻihau Akahelani Aloha	K-12	40	-
TOTAL		1,971	1,977

## Proposed Systems:

No new facilities proposed at the present time.



Waimea Canyon Middle School





## Infrastructure - Public Facilities





Infrastructure - Energy

Existing Systems:

DHHL has developed the Hoʻomalū Energy Policy to enable native Hawaiians and the broader community working together to lead Hawaiʻi’s effort to achieve energy self-sufficiency and sustainability.

In July 2009, the Department of Hawaiian Home Lands entered into an Energy Partnership with Kauaʻi Island Utilities Cooperative (KIUC) to enable native Hawaiians and the broader community to work together in leading Hawaiʻi’s efforts to achieve energy self-sufficiency and sustainability. The DHHL - KIUC Energy Partnership agree to the following:

- Pursuing opportunities that support economic self-sufficiency and contribute to Hawaii’s Clean Energy Initiative through leasing lands owned by DHHL for renewable energy projects;
- Incorporating renewable energy technologies into existing homesteads;
- Conducting outreach programs to educate and encourage the public to live a “green” lifestyle;
- The DHHL-KIUC Energy Partnership agrees to collaborate to achieve critical energy objectives:
- Assist homesteaders in their efforts to incorporate affordable energy efficiency into their own homes;
- Showcase the Homestead Energy Program and the retrofitting of energy saving devices in existing homesteads, including but not limited to solar water heating systems and compact fluorescent light (CFL) fixtures;
- Helping advance the commercialization of developing green energy technology by identifying appropriate opportunities for demonstration of such technology in the Department’s projects;

Potential energy opportunities in West Kauaʻi include:

Hydroelectric power

There is an existing 0.5 Megawatt hour (MW) micro hydro power plant at Waiawa which was developed by the sugar companies at the turn of the 20th century. The plant is still operational and provides energy for the pumps in the ditch system.

The potential to utilize surface water and dam capacity to generate electricity is of interest to the West Kauaʻi community. A feasibility study for the future application of hydroelectric power generation should be pursued with specific attention paid to the Kōkeʻe Ditch System and the reservoir at Puʻu ʻŌpae.

Solar

State law requires all new homes to have solar hot water heating. Additionally, there are several programs (Federal and State) to add photovoltaic panels to homes; DHHL is committed to homeowners reducing their energy cost and living sustainably.

Other Potential Projects

Many alternative energy proposals are underway in West Kauaʻi. Some include proposals to use DHHL Lands. Negotiation with these energy developers should include benefits to homestead communities where practicable. These benefits may include lower energy rates as well as jobs in the energy industry.

Proposed Systems:

Pac West development and Pacific Light and Power proposals.

<div>DEPARTMENT OF HAWAIIAN HOME LANDS</div> <div></div> <div>HO'OMALUŌ</div> <div>ENERGY POLICY</div> <div>To enable native Hawaiians and the broader community working together to lead Hawaiʻi's effort to achieve energy self-sufficiency and sustainability.</div>	<div><div>OBJECTIVE</div><div>1</div></div> <div>Mālama ʻāina: Respect and protect our native home lands.</div>	<div><div>OBJECTIVE</div><div>2</div></div> <div>Koʻo: Facilitate the use of diverse renewable energy resources.</div>
	<div>ACTIVITIES:</div> <div>Develop a comprehensive strategic plan for the protection, restoration and preservation of DHHL's forest lands. (An appropriate plan that incorporates the preservation of values, traditions, and culture of Native Hawaiians that restore balance, harmony, and sustainability of the forest lands for future generations.)</div> <div>Develop a comprehensive strategic plan for the protection, restoration and preservation of DHHL's other lands—lands other than forest lands, lands for homesteading and lands for general lease.</div> <div>Identify properties in DHHL land inventory that have potential for carbon sequestration and determine if carbon sequestration is a viable use of DHHL lands.</div> <div>Evaluate each Regional Plan to determine if energy self-sufficiency and sustainability goals and objectives should be incorporated into the regions. (The regions contained within the Regional Plans can serve as today's "ahupuaʻa" - the past Hawaiian land-management system of self-sufficiency for future generations.)</div>	<div>ACTIVITIES:</div> <div>Identify properties in DHHL's land inventory that have potential for renewable energy projects.</div> <div>Pursue the leasing of those lands that are identified as suitable for renewable energy projects. (First priority should be given to entities that would provide "firm" renewable energy power such as garbage-to-energy (mass burn), geothermal, pump-storage hydropower, solar-thermal, and second priority to "on-available" renewable energy power such as wind, solar-photovoltaic, and wave.)</div> <div>Encourage existing and future general lessees and licensees of DHHL's properties to design and build their facilities so that they are energy and resource efficient.</div> <div>Seek partnerships for the development of renewable energy resources. In this connection, build relationships that could assist DHHL on non-energy related issues.</div>
<div><div>OBJECTIVE</div><div>3</div></div> <div>Kūkulu pono: Design and build homes and communities that are energy efficient, self-sufficient and sustainable.</div>	<div><div>OBJECTIVE</div><div>4</div></div> <div>Kōkua nō i nā kahu: Provide energy efficiency, self-sufficiency, and sustainability opportunities to existing homesteaders and their communities.</div>	<div><div>OBJECTIVE</div><div>5</div></div> <div>Ho'ona'auao: Prepare and equip beneficiaries to promote a green, energy efficient lifestyle in and around communities.</div>
<div>ACTIVITIES:</div> <div>Promote, design, and build new affordable homes that minimize lifecycle and visual impacts) using the "Kauai Buildstrong" and "ENERGY STAR" programs. (These programs ensure the designing and building of new energy and resource efficient homes in Hawaii.)</div> <div>Strive to plan, design, and build new communities utilizing the "ahupuaʻa" concept and the "Green Communities" program. (The Green Communities program's criteria are designed to provide a cost-effective approach and standard for creating healthy, affordable, and environmentally responsible homes and communities.</div> <div>Assist beneficiaries to utilize energy efficiency rebates, financial assistance, tax credits and other incentives offered by utility companies and federal, state and county governments.</div> <div>Promote the benefits of hybrid electric vehicles to help reduce beneficiaries' transportation (gasoline) costs. (100% of Hawaiʻi's imported fossil fuel is used for transportation that must be use efficiently and conserved.)</div>	<div>ACTIVITIES:</div> <div>Identify effective energy efficiency and conservation retrofit applications and develop a plan to assist homesteaders with the retrofitting of their homes. (Retrofit applications may include: solar hot water heating system, insulation/radiant barriers, low-flow toilet and shower heads, photovoltaic system, CFL bulbs, ENERGY STAR appliances, energy efficient windows, clothes line, ventilation techniques, and rooftop vents.</div> <div>Assist homestead communities to achieve potential energy self-sufficiency by identifying properties near existing homesteads that could be utilized for community renewable energy projects that could also generate revenue for their respective regional plan projects.</div> <div>Seek partnerships to assist homesteaders with retrofit applications and energy self-sufficiency projects.</div>	<div>ACTIVITIES:</div> <div>Seek partnerships that provide opportunities to learn how to live a self-sufficient and sustainable, greener lifestyle.</div> <div>Develop and implement resource efficiency programs for beneficiaries to reduce, reuse, and recycle resources. These resources include construction and demolition materials, household items, yard waste, and other items which might be sent to landfills or incineration.</div> <div>Assist homesteaded communities to become more aware of their energy use and carbon footprint.</div>





## *Renewable energy projects.*

Hawai'i needs renewable energy to reduce costs and to avoid dependence on foreign energy sources in these uncertain economic and political environments. Oil counts for 89.6% of KIUC fuel mix and the utility is looking for solutions. Kaua'i residents pay \$0.34 per kilowatt hour (kWh) which, along with Moloka'i, is one of the highest rates in the Nation. Energy cost, energy security and the need for sustainable energy, call for local renewable sources. West Kaua'i has many initiatives and potential sources of renewable energy.

### **Wind Energy**

The wind resources on Kaua'i have not been adequately studied. A power purchase agreement with a potential provider was signed by KIUC but the project has stalled and alternative sites are under investigation. This project was projected to generate 10.5-15 MW.

### **Solar Thermal and Photovoltaic**

The Mana/Barking Sands area has been identified as a good site for this kind of facility in DBEDT's "A Catalogue for Potential Sites for Renewable Energy in Hawai'i." PMRF is developing a renewable energy plan as part of a Federal program for energy security. KIUC has been engaged in several power purchase agreement negotiations with potential projects in the area, like the Kikāola photovoltaic project. CNHA has a solar water heater program that will enhance the ability of homestead residences to switch to solar water heating.

### **Biomass, Biofuel and Biogas**

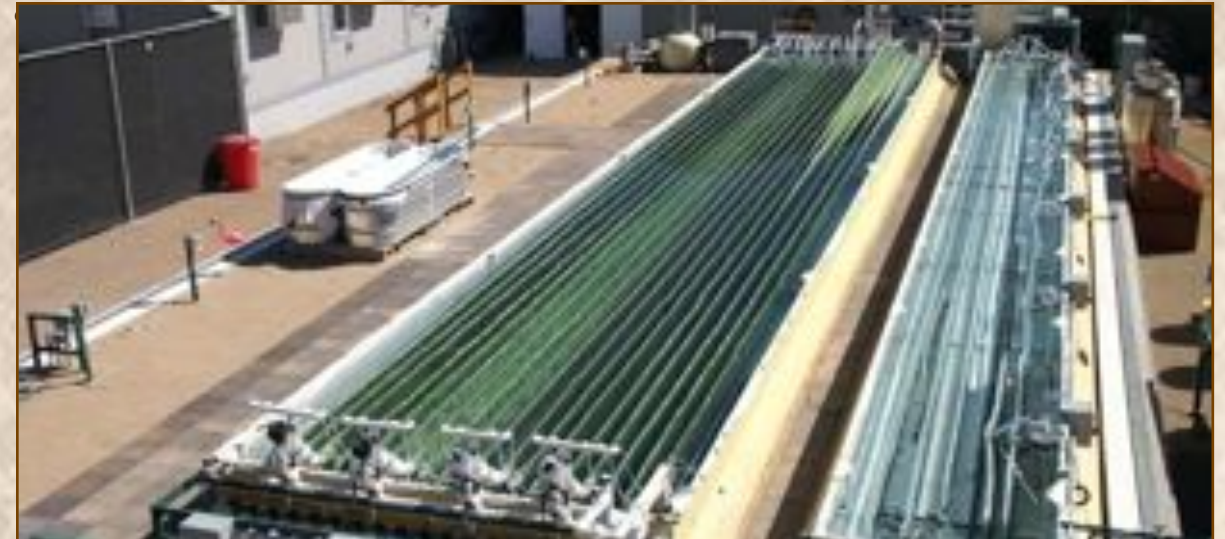
According to KIUC (2005), these sources have the potential to meet all of the islands needs while only using 20% of the agriculturally zoned lands. Waste to energy plants and methane gas capture systems at the existing Kekaha Landfill and a proposed landfill site in Lihu'e are also part of the potential mix of renewable energy on Kaua'i. The Kekaha Landfill is estimated at 0.7- 1.0 MW. KIUC has several projects it is looking at including tree and grass crops on lands utilized by Kekaha Sugar for 99,000 dry tons. Other projects are currently under development in former sugar lands of the Olokele Sugar Company and Gay and Robinson lands neat Kaumakani and 'Ele'ele.

### **Hydro-Power**

ADC owns and manages two (2) hydro-plants in West Kaua'i: a 1.0 MW run of the river facility in Waimea and a 0.5 MW facility off the ditch system in Waiawa. Potential for another facility at Pu'u Ōpae exists and its capacity and feasibility should be explored.

### **Ocean and Wave Energy**

DBEDT has identified potential wave energy sites off Port Allen. However, questions remain on the



*Biofuel production facility*



*Hydro-electric power facility*



## V. Homestead Issues & Priorities

Over the course of the Regional Plan development process, many issues were raised and presented. Members of the community responded to the issues and opportunities by presenting ideas for projects and programs. Some of these became the priority projects listed in the following pages. In addition to those projects many other worthy projects were brought up but were not deemed priorities at this time. The discussions raised substantive issues and viable potential projects that are captured below.

### Community

The use of DHHL lands by “outsiders” was raised on a number of occasions. Project opportunities and revenue from DHHL lands should benefit the Department and the homesteaders first. They should not go to an outside lessee of those lands without beneficiaries receiving the first option.

Instead of leaving lands vacant some suggested that homestead and beneficiary groups should be given an opportunity to have lands even without infrastructure. The lessons of Kahikinui were mentioned but many still wanted similar programs implemented in West Kauaʻi.

Kauaʻi is a good place to beta test new projects and ideas.

Job creation is a critical need. Need to develop more job opportunities on the West Side.

The need for more cultural education and Hawaiian Language instruction was mentioned. The need for more of these programs was suggested as important needs

Malnutrition and hunger were mentioned as problems on the West Side. The number of subsidized school lunches was noted as an indicator of this need.

Fiber optic cable service should include the existing homestead residents. This will be considered in the future when Sandwich Islands Communications completes their installations for the new DHHL developments.

### Resource Management

Public hunting on DHHL lands should stop. While there is some benefit to DLNR leasing the lands from a maintenance and management point of view, in the long run this is not a DHHL mission or function. The license to DLNR should not be renewed when it comes due in 2015. The lands should be open to other uses more suited to DHHL purposes such as agriculture and renewable energy projects.

The size of the Waimea mauka lands impressed many participants and generated many comments and project ideas. The following is a list of comments, concerns, issues and programs mentioned:

- More agriculture like kalo farming
- Bring people back to the land

- Replant native woods like koa, sandalwood (ʻiliahi) and ʻōhiʻa
- Maintain the uplands using watershed principles and a stewardship ethic
- Establish a ranching program for young people

The conservation values of the Waimea mauka lands should be recognized. Its importance should factor in to the plans and uses developed by DHHL.

Some questions were raised about the use of DHHL lands for GMO crops. DHHL has no formal policy on GMOs but could look into the issue. This remains an open question for further discussion.

Consider the use of federal brownfield funding to clean up the old mixing plant site at Waiawa. The quarry operations at Māhāʻulepū have stopped. DHHL should consider reinstating the operation.

Waiawa Valley was viewed as a spiritual place that should be treated with respect. Planning for this area should be done right. The community wants to take the necessary time and protocol. For now, the consensus was to leave it as it is.

### Agriculture & Water

The question of water use and water rights were mentioned many times during the planning process. This concern came up in reference to subsistence agricultural use of water on the Hanapēpē lands with questions about the continued lease of the land by the Robinsons under a sublease from DLNR. There was a request for research into the current use of surface water on lands associated with DHHL and ways to potentially make this water available to native Hawaiians for use in agriculture.

Avoid subdivision of large agricultural parcels. This will affect the future viability of agriculture.

### Energy

Develop projects that benefit native Hawaiians and the Department. Some suggested ideas are:

- Use existing albizia trees for biofuels production
- Micro-hydro projects should be developed on DHHL lands
- Use existing templates, like Kikāiola PV, as models to develop similar projects on DHHL lands

Alternative renewable energy is a good idea, however, some of the proposals that are “out there” are not beneficial or desired by the community. The proposals by Pac West and Pacific Light and Power highlighted this issue in the community.

When informed of the Kaupuni Project in Waiʻanae, participants were strongly supportive of similar projects on the West Side.





## Potential Projects

A small group of homesteaders met on their own in order to formulate their ideas. They created the following list of potential projects:

- Create a Pu'uhonua – a place of refuge, peace and safety
- Development of Cultural Preservation programs and workshop
- Grant writing workshops
- A map of historical places with place names and key sites
- Programs to honor our kūpuna such as Edgy Lee's documentary of Ulu Kiluano
- Create more tourist destinations on West Kaua'i like farmer's markets and craft fairs
- Identify important agriculture lands on DHHL lands
- More housing on the West Side specifically low income and kūpuna housing

During the regional plan meetings, beneficiaries suggested additional potential projects which are listed below:

### Accommodate PMRF

PMRF is a major employer in the region and this situation seems likely to continue into the foreseeable future. Many contractors come to work for the base. There seems to be a need for longer term visitor accommodations for contractors and visitors to PMRF.

### Agricultural Cooperative

A co-op should be developed to assist people with information, technology and business skills to help them succeed in farming. Additionally the co-op should help these people with obtaining insurance and small business loans which are often difficult for individual farmers to obtain.

### Development of Hydro-electric Power Plant on DHHL Lands

Research the actual ownership of the existing micro-hydro facility at Waiawa on the Kekaha Ditch System. Evaluate other possibilities within the Kōke'e Ditch and Waimea upland area. Consider a new hydro-electric facility at Pu'u 'Ōpae Reservoir.

### Expand Poi Production

Work with the Makaweli Poi Mill, LLC, which is owned and operated by the OHA. Participate in their training programs aimed to teach Hawaiians how to cultivate taro to expand poi production.

### Homestead Organization

Create a joint homestead organization that covers all the West Side communities from Hanapēpē to Kekaha to the Waimea uplands.

### In Dis Life

In Dis Life is an ex-convict rehabilitation program focused on skills and 'ohana. Returning to the 'āina for practical, cultural and spiritual reasons is a core concept in its philosophy.

### Malama Waiawa

There was recognition that this valley was special with many sacred sites, natural and cultural resources and associations. The feeling was that planning for this area should be done deliberately and not with haste. It was also felt that the proper cultural protocols should be followed including consultations with the appropriate kūpuna and 'ohana.

### Native Hawaiian Water Rights

Research the question of native Hawaiian water rights and reclaim what belongs to DHHL and the homestead community. Check into the work that is being done by ADC for either partnership opportunities or return of some facilities and water to DHHL for resource management functions and homesteader use.

### Revitalize the Māhā'ulepū Quarry

The site and some equipment are already there including the weigh station. Work stopped when the operations reached DHHL land.



*Pu'u 'Ōpae and reservoir*



# Priority Project: Develop an Agricultural & Water Plan

**Description:** This is a three-part project that calls for the restoration and use of Pu’u ‘Ōpae, a mutually beneficial land swap with the DLNR, and a plan to improve and continue use of the West Kaua’i Water System.

**DLNR Land Swap:** This is the first priority for this project. Community participants felt the DHHL should consider swapping the lands north of Pu’u ‘Ōpae with DLNR lands located between Waimea and Kekaha. This allows DLNR to continue to use the more rugged and inaccessible portions of the current DHHL lands they are currently using under a license for public hunting purposes. DLNR would like to retain hunting activity in the West Kaua’i Region as this is one of their mandated purposes. These lands are also adjacent to the public hunting areas that DLNR already owns and reserves for public hunting. It would allow DLNR to consolidate a large public hunting area in Kaua’i under their ownership.

Finally, DHHL would then own property that includes both of the roadway approaches that lead up to Kōke’e and Waimea Canyon. Cultural and agricultural tourism could be developed along these corridors that could supplement the enterprises that homesteaders would engage in; giving them a more diversified revenue source and possibly greater chances for success. Some additional revenue sources may also be available for the Department.

Hunting is not a DHHL mission purpose and the Department will then receive better agricultural lands closer to population areas. These lands have developed water and roadway infrastructure that make residential and agricultural uses easier to maintain, develop and expand.

Ultimately, this land swap will enable both agencies to better serve their constituent base with lands that are more compatible with accomplishing their mission, purpose, and objectives.

**Pu’u ‘Ōpae:** Pu’u ‘Ōpae is a special place and should be planned to benefit the whole community. Many possibilities exist. The reservoir should be maintained and the irrigation system rehabilitated for use by agricultural users and possible future agricultural lessees. An agricultural lease master plan should be developed to create a rational framework for decision making and project selection by the Department and the beneficiary community. This plan should look at leases ranging from 2-5 acres and 5-20 acres on lands around and below Pu’u ‘Ōpae that can be irrigated from the reservoir. Increased water diversion from the split in the ditch system from Pu’u Moe need to be evaluated. The size of the lots should be based on the conditions of the site and the types of agricultural plans that are being considered. The following projects have been suggested for consideration:

- Taro Growing
- Micro-hydroelectric plant at spillway
- Other diversified crops
- Retreat/wellness/rehabilitation center

Access road maintenance will need to be improved along with the development of the agricultural subdivision. DHHL is aware of the dam safety issues that are associated with the Pu’u ‘Ōpae Reservoir. This project would advocate the use of reservoir funds already allocated by the State of Hawai’i to repair Pu’u ‘Ōpae to address the safety concerns.

**Water System Development:** Along with the concept of the land swap the maintenance or improvement and continued use of the existing West Kaua’i Water System is important. DHHL should work with the Agricultural Development Corporation to maintain and develop the existing system to benefit the entire West Kaua’i region with agricultural uses and jobs.

**Location:** DHHL Waimea uplands.

**Status:** Not started.

**Potential Partners:** Partner with DLNR, Department of Agriculture and the ADC.

**Cost:** Indeterminate at present time.

## Next Steps & Timetable

**Year One:** Start Negotiations with DLNR for land swap. Develop Ag Plan for Pu’u ‘Ōpae: set up committee, obtain planning and design funds and conduct technical studies (e.g. topographic surveys & water system assessment, reservoir safety etc.) and zone a special district area around it. Commit reservoir repair funds. Start partnership with ADC for use, maintenance and development of the water system for West Kaua’i. Start reservoir repair. Start joint projects maintenance and repair work with ADC. Some tasks can be done in parallel and short-term projects can be implemented while the overall plan is being developed.

**Year Two:** Develop Ag & infrastructure plan. Conduct EIS and other entitlement work.

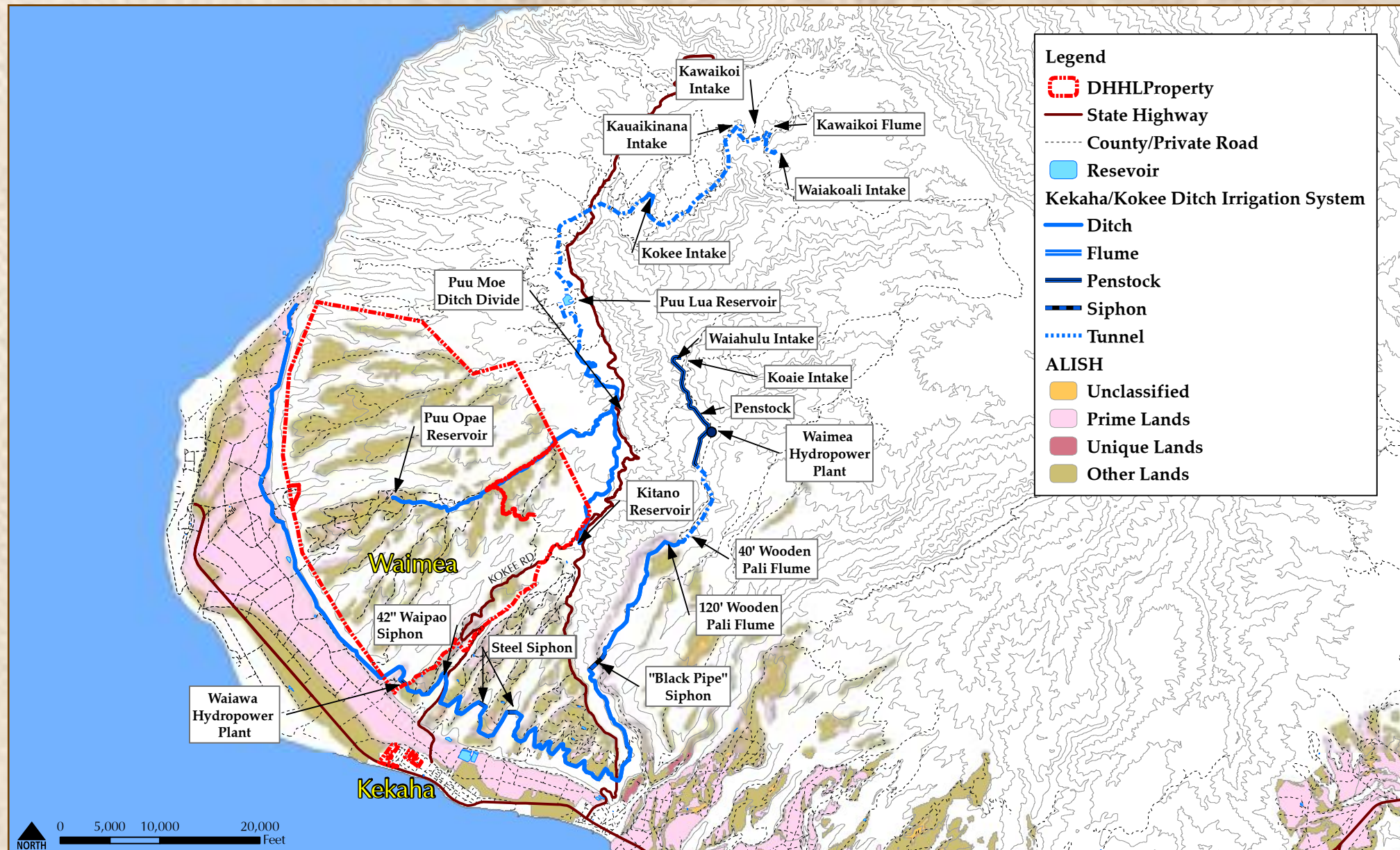
**Year Three:** Obtain permits and approvals. Award agricultural leases for Pu’u ‘Ōpae lots. Start new projects for improvement of infrastructure: roads, water and power.

Year One	Year Two	Year Three
<ul style="list-style-type: none"><li>• Organize stakeholders.</li><li>• DLNR land swap.</li><li>• Obtain funding to develop Agriculture &amp; Water Plan.</li></ul>	<ul style="list-style-type: none"><li>• Complete Agriculture &amp; Water Plan.</li><li>• Start entitlements.</li><li>• Obtain funding for implementation.</li></ul>	<ul style="list-style-type: none"><li>• Award leases for Phase 1.</li><li>• Start site development.</li></ul>





# Priority Project: Develop an Agricultural & Water Plan





# Priority Project: Develop a Multi-purpose, Evacuation, & Education Center/Shelter

Many community members felt the region needs a safe evacuation facility. Conversations with Kauaʻi Civil Defense verified that in the recent tsunami alert designated public shelters were not opened because time was too short and the need was to go to high ground. A review of “holding” areas with facilities is currently underway. The County has predesignated shelters but they are located at lower elevations and their opening is by administrative decision. The community felt that a shelter on high ground more readily open to the public was needed.

**Description:** This multi-purpose facility would serve as a cultural center for the community and an emergency/evacuation center for the entire West Kauaʻi community. It should be developed on the plateau area on the Road to Kōkeʻe and Waimea Canyon. The Kitano Reservoir should be considered in developing a water source for this site. A mauka village committee should be formed to champion and spearhead this project.

The facility could also be designed primarily as a culture and education center since this would be its normal use as disasters are sporadic, unexpected and generally infrequent events. It should be a node for activities and programs that are geared to the young.

The facility should allow for commercial purposes to tap into the potential tourism market of visitors going up to Waimea Canyon and Kōkeʻe. It should be designed so that it feels like a small village. The Kauaʻi Island plan considered a mauka village or kauhale in this location in keeping with traditional ahupuaʻa patterns linking mauka and makai settlements. Should infrastructure and economic activity develop to a sufficient extent, permanent residential lots and possibly a charter school could be developed around this site.

As an emergency shelter, the main facilities should be designed to be hurricane and earthquake resistant. Design and logistics planning should include the State and County Civil Defense agencies. In recent events, the people of the west side drove up to these plateau areas to avoid potential tsunamis but there were no facilities to service them.

A second option for consideration as an emergency shelter are some abandoned tunnels in this area. A study should be conducted to consider the feasibility of these tunnels for use as evacuation shelters. Capacity and the structural condition of the tunnels need to be evaluated.

**Location:** DHHL Waimea uplands, Mauka Village.

**Status:** Not started.

**Potential Partners:** Partner with State and County Civil Defense.

**Cost:** Indeterminate at present time.

## Next Steps & Time Line

**Year One:** Start West Kauaʻi Homestead Safety and Education Committee. Begin discussions with State and County Civil Defense. Decide on desirable option and site. Obtain Planning funds.

**Year Two:** Evaluate feasibility of alternative sites & concepts. Get license to start activities in the mauka area to generate interest and show that the commitments are real. Develop conceptual Plan and conduct entitlement studies. Develop phasing plan. Obtain design and construction funding for the project after developing cost estimates from the concept plan.

**Year Three:** Conduct first of planned annual community events on the plateau area. Complete EA/EIS for facility. Complete entitlements and building permits. Programmed activities can occur even before buildings are constructed.

Year One	Year Two	Year Three
<ul style="list-style-type: none"><li>Organize stakeholders.</li><li>Obtain Planning funds.</li></ul>	<ul style="list-style-type: none"><li>Develop Master Plan.</li><li>Obtain development financing.</li></ul>	<ul style="list-style-type: none"><li>Complete EA/EIS.</li><li>Start Phase 1 development - Kauhale.</li><li>Begin architectural design.</li></ul>

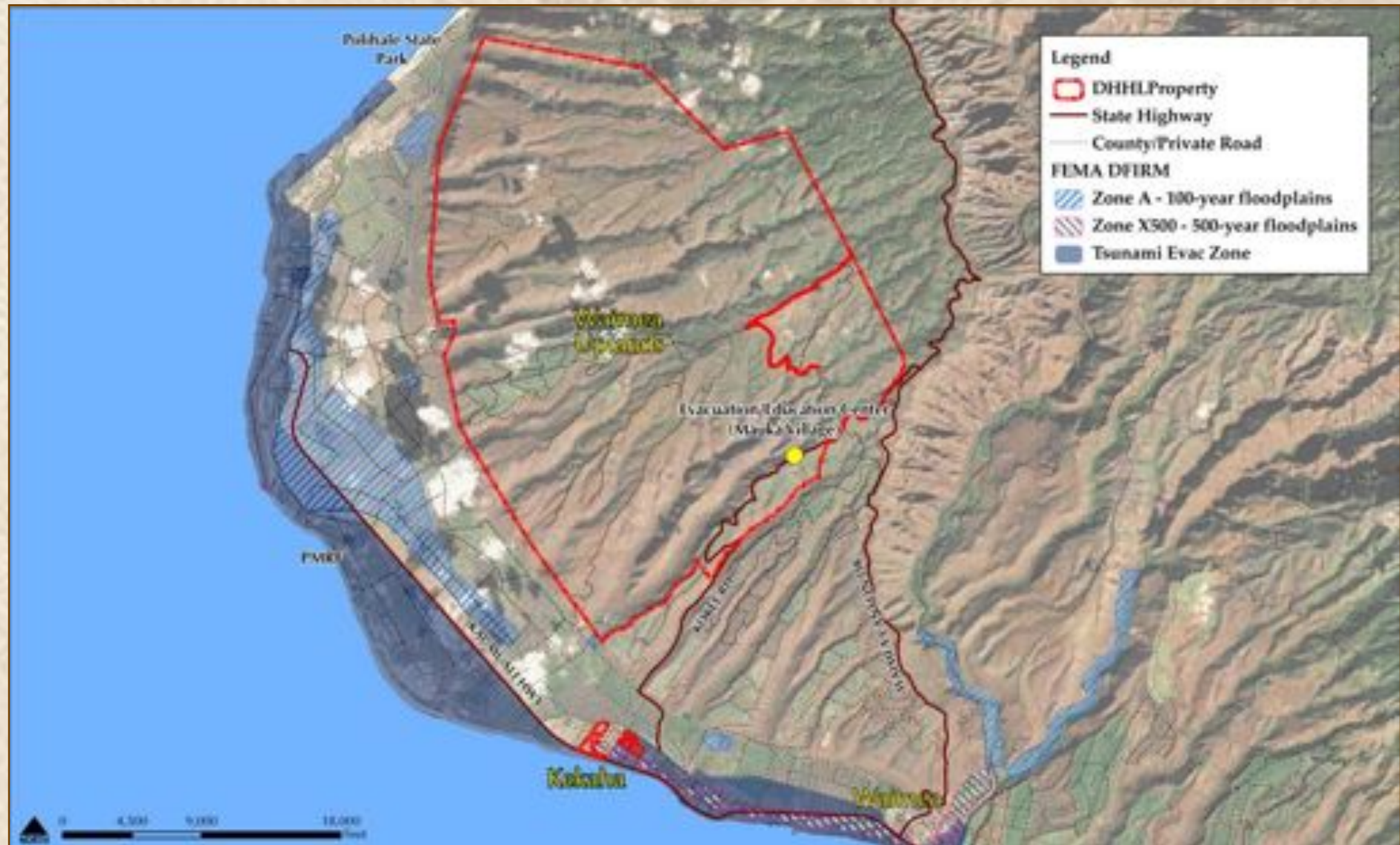


Aftermath of a tsunami in Hilo





## *Priority Project: Develop a Multi-purpose, Evacuation, & Education Center/Shelter*





# Priority Project: Support the Development of the Kekaha Enterprise Center

**Description:** Kekaha Community Homestead Association in partnership with Kauaʻi Community College received an Alaskan Native/Native Hawaiian Institutions Assisting Communities (AN/NHIAC) grant of \$794,728 to develop a Kekaha Community Enterprise Center. The center will provide: after-school tutoring, a agribusiness/technical assistance, computer training, health education and screening, life skills training, vocational training, financial literacy counseling, foreclosure prevention, a youth center, and a computer lab. The Center needs a secure and viable location on DHHL lands and will trigger development of a wastewater treatment facility. Potential sites are currently being looked at (3-4 acres needed per grant guidelines).

The primary proposal is to build on Lot 51. The feasibility of this site should be evaluated with the understanding that there are potential issues with iwi kūpuna located on the site and potential tsunami hazards. An oral report at the last community meeting stated that iwi were not in the area. However, a prior inventory level survey found two sets of iwi within the dune portion of the site so further study is needed to be certain about the presence or absence of iwi. Planning can proceed while these issues are being investigated. This parcel’s location on Kaumualiʻi Highway is an asset for this purpose.

An alternative location was the County Park next to the DHHL subdivisions. Conversations with the County Parks department staff indicated a willingness to consider this possibility but there needs to be a champion from the DHHL or the homestead association to represent the enterprise center. The County needs a consensus message from the community, a clearer purpose rationale (since there is a community pavilion nearby in the County Park) and provide functional and programmatic information (e.g. square footage, parking requirements, plumbing and electrical capacity information etc.) for the County to evaluate and consider. Since this site has been given to the County of Kauaʻi from the State of Hawaiʻi via Executive Order from the Governor jurisdiction and use issues must be addressed along with responsibility for construction and operational costs.

Another location suggested was the possibility of it being located in the Hanapēpē area designated for commercial or community use. The Hanapēpē site is a prime commercial use that is viewed for future revenue generation by the Department so the center would have to be integrated with potential future commercial establishments. This possibility will be evaluated if this site is selected. Other sites in Hanapēpē for consideration are the community use areas in the DHHL Kauaʻi Plan.

**Location:** Four (4) possible locations at this time.

**Status:** Initial funding acquired.

**Potential Partners:** Partner with State and County Civil Defense.

**Cost:** Indeterminate at present time.

## Next Steps & Timetable

**Year One:** Finalize site and start planning and conceptual design. Finalize development program and project partners.

**Year Two:** Obtain additional funding for design and construction. Complete architecture and engineering plans.

**Year Three:** Obtain permits and start construction.

Year One	Year Two	Year Three
<ul style="list-style-type: none"><li>Finalize site and start planning and conceptual design.</li></ul>	<ul style="list-style-type: none"><li>Obtain additional funding for design and construction.</li></ul>	<ul style="list-style-type: none"><li>Obtain permits and start construction.</li></ul>

## Possible Site Locations





# Priority Project: Develop Renewable Energy Projects Compatible with Agriculture

**Description:** The concept for this project evolved from discussions in the regional plan process based on proposals from renewable energy developers to DHHL for exclusive use of 14,000 acres of land in the Waimea uplands. Through the regional plan discussions, the community agreed on the following development guidelines for the Waimea parcel:

1. Renewable energy is generally a good idea.
2. Large amounts of homestead land should not be given exclusively to any one entity.
3. Any license or general lease agreement for renewable energy development should be structured to preserve or support agricultural and cultural activities along with the development of renewable energy systems.
4. Land Use Designations in the Kaua'i Island Plan should be maintained, and not foreclosed by any general lease agreement; and
5. Any agreement for the use of lands should negotiate direct benefits, beyond simple rent income, to DHHL and the beneficiary community.

The community indicated a willingness to support projects that meet these goals. There was no predetermined preference on specific type of renewable energy development the community would support. The community is willing to consider and discuss many alternative ideas that address their development guidelines. The main point is that they should be engaged and apprised of any discussions; that affect this significant land base.

The general process outlined below is the process that DHHL undertakes to consider renewable energy development proposals.

1. DHHL receives a letter of interest and a proposal from potential Renewable Energy Developers.
2. DHHL, National Renewable Energy Laboratory (NREL), the DBEDT, the State Energy Office reviews the proposals and conducts due diligence on proposal.
3. DHHL, NREL, and the DBEDT, State Energy Office recommends a Renewable Energy Developer for the parcel and seeks Chairman approval to move negotiations forward.
4. DHHL Planning Office conducts Beneficiary Consultation in the region.
5. DHHL Planning Office develops a Beneficiary Consultation report and recommendations.
6. Using the Beneficiary Consultation report and recommendations, DHHL conducts lease negotiations, inclusive of community benefits as identified through beneficiary consultation.
7. DHHL conducts two (2) Act 19 hearings on island.
8. Final Approval of the negotiated lease agreement by the HHC on island.

**Location:** DHHL Waimea uplands.

**Status:** DHHL has completed Steps 1-3 with the Renewable Energy Developer Pac West. DHHL is currently on Step 4: Beneficiary Consultation.

**Other Regional Stakeholders:** KIUC, NREL, Pac West, PLP PMRF, West Kaua'i beneficiaries, DLNR, ADC, Gay & Robinson.

**Cost:** Indeterminate at present time.

## Next Steps

Conduct Beneficiary Consultation process (meetings, report and recommendation) with West Kaua'i beneficiaries on proposed Pac West project. Once completed, lease negotiations can commence and final HHC approval on the lease will occur on Kaua'i.

## Other Potential Next Steps:

1. Bring the water down through our lands; repair the existing ditch system.
2. Develop the existing dirt road along the ditch system to serve as the primary access to the Pu'u 'Opae area.
3. Identify prime agricultural lots for homestead purposes along the ditch system in order to ensure easy access to free water.
4. Award agricultural lots.
5. Provide opportunities to partner with Pac West as a commercial farmer. Pac West would provide seed, supplies, training, and all inputs used in developing the specified crop(s). Pac West would purchase the entire crop for renewable energy development.
6. Provide opportunities for agricultural homesteaders to participate in other agricultural training programs provided by OHA, KCC, USDA, etc.



Photovoltaic array



Wind farm



# Priority Project: Develop Agricultural Uses for Hanapēpē Farm Lots/Lease Areas

**Description:** The Hanapēpē Residence Lots located in a single row of homes above Hanapēpē Town and accessed by Moi Road. Other private, single-family, residential homes are located in subdivisions across the project site. The site is moderately sloped. Forty seven (47) lots have been created in two (2) phases. Thirty six (36) homes have been built. The lot sizes range from 6,001 to 12,632 square feet in size. House sizes range from 752-1152 square feet in single-family detached 2-3 bedroom units. All units are one-storey units with one/two carports. This subdivision is part of the Hanapēpē 359 acres of mauka land owned by DHHL. The land behind the residences remains vacant and is designated for subsistence agriculture in the Kauaʻi Island Plan. It is currently leased to DLNR which has sublet it to Gay and Robinson. The existing lots in Hanapēpē are too narrow and feel crowded. Residents have expressed a desire to use the area behind their lots for agricultural uses, recreational uses or simply as open space to mitigate the “crowded feeling” of the existing lots. The current lease with DLNR and the sub lease with the Robinson Trust should not be extended or at least the area adjacent to the residences should be taken out to allow homesteaders to use it for their purposes according to this plan. The actual acreage to be used and the kinds of uses that should be allowed should be discussed between the DHHL and the residents.

Residents have complained that a plan should be developed to allow individual and common uses of the agricultural land behind the residences. Planning for the expansion of the use area to include the immediate back yard areas should consider depth, circulation and access and potential conflicts with neighbors. These could be permanent additions to the existing lots or a perpetual agricultural easement available for the exclusive use of the tenant.

An adjacent area should be set aside as a community garden. Like urban community gardens, 2-3 acres should be set aside to allow people to conduct subsistence farming. These plots would be for personal use outside of individual private lots. A tot lot could be developed next to this community garden to make it a community, multi-generational activity area allowing stay at home parents a good place to bring their children.

Additionally the plan could consider the creation of a small agricultural subdivision for subsistence agriculture. The Island Plan calls for subsistence agriculture on these lands. Normally individual 2-5 acre lots are sufficient for a single family operation and are capable of generating 2-3 full time jobs. Having several dozen such lots designated and available to people who have a passion for actually engaging in farming adjacent to the residential lots is a variation of the concept of the agricultural cluster development and may provide a new model of community sustainability. These agriculture lots can be awarded as mid-term licenses rather than long term leases for DHHL to manage and retain flexibility to accommodate people who actually want to farm. Irrigation water sources for the concepts need to be explored.

**Location:** Hanapēpē.

**Status:** Not started.

**Potential Partners:** State, County, ADC, DOA

**Cost:** Indeterminate at present time.

## Next Steps & Timetable:

**Year One:** Engage in a planning charette for lot expansions and subsistence agriculture of the Hanapēpē lots. Obtain project funding. Engage a planning and design consultant to develop the new modified master plan for the Hanapēpē Heights community.

**Year Two:** Conduct EA/EIS for new master plan. Start subdivision, consolidation and re-subdivision of Hanapēpē lots.

**Year Three:** Complete subdivision action (includes any infrastructure development). Develop common area elements, e.g. community garden and tot lots. Complete land tenure transaction. Award the agricultural lots.

Year One	Year Two	Year Three
<ul style="list-style-type: none"><li>Develop a new modified master plan for Hanapēpē Heights.</li></ul>	<ul style="list-style-type: none"><li>Complete entitlements and subdivision action.</li></ul>	<ul style="list-style-type: none"><li>Complete site improvements and property transactions.</li></ul>



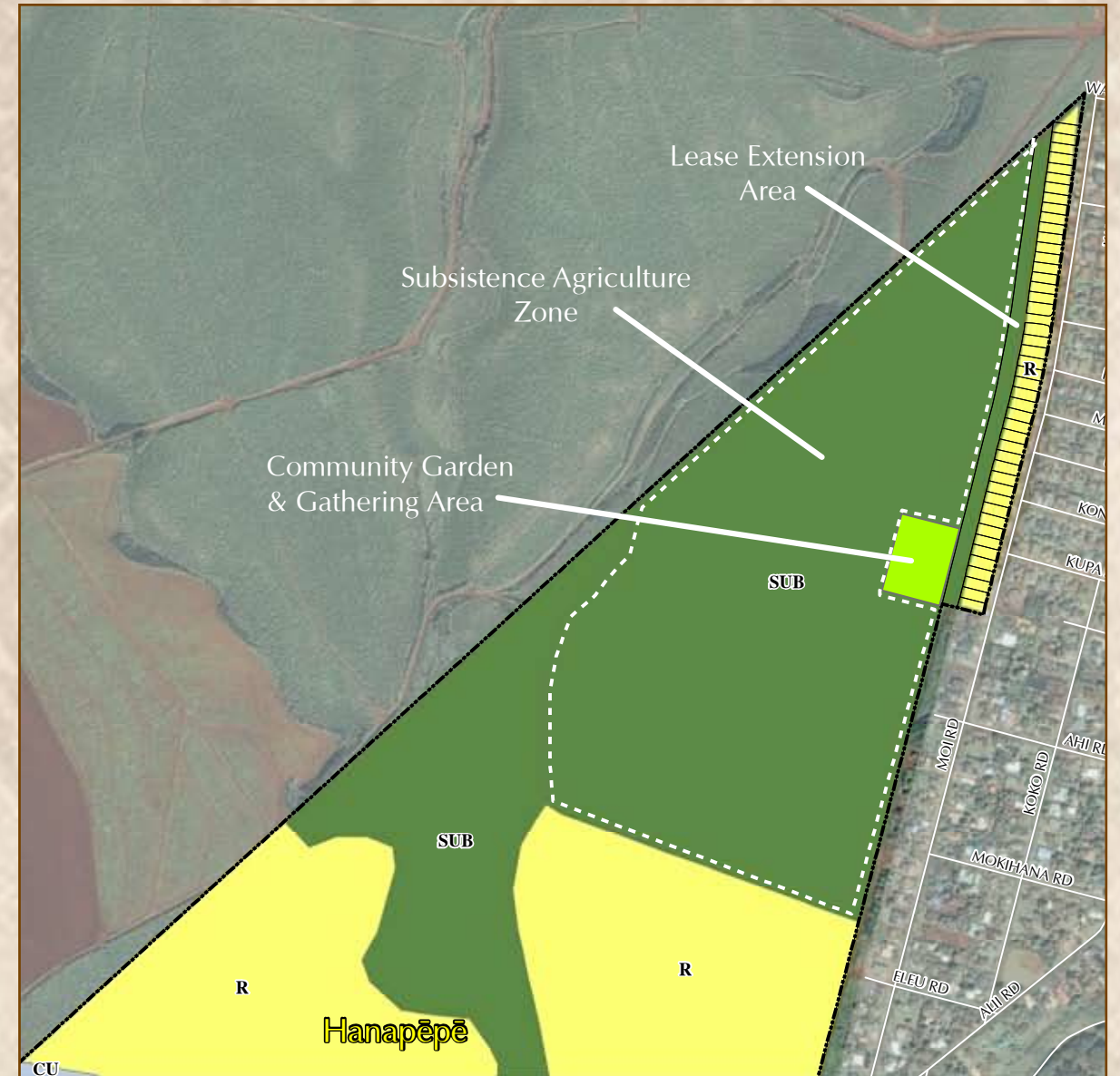




*Hanapēpē lots*



*Vacant agricultural lands west of residential lots*









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**DEPARTMENT OF HAWAIIAN HOME LANDS**

Hale Kalaniana'ole  
91-5420 Kapolei Parkway  
Kapolei, Hawai'i 96707

Telephone: (808) 620-9500  
Facsimile: (808) 620-9559

[www.hawaii.gov/dhhl](http://www.hawaii.gov/dhhl)

Prepared by:







DEPARTMENT OF  
HAWAIIAN HOME LANDS