

KAUA'I ISLAND PLAN

Kaua'i

May 2004

The Department of
Hawaiian Home Lands

State of Hawai'i



GROUP 70
INTERNATIONAL
925 Bethel Street, 5th Floor • Honolulu, HI 96813

UPDATED: June 4, 2004



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ACRONYMS & HAWAIIAN TERMS



Kaua‘i Island Plan
DEPARTMENT OF HAWAIIAN HOME LANDS

• *Acronyms & Hawaiian Terms* •

ACRONYMS

ALISH	Agricultural Lands of Importance, State of Hawai‘i	KS	Kamehameha Schools
ATV	All Terrain Vehicle	LUD	Land Use Designation
EPA	Environmental Protection Agency	mg	Million gallons
Ft	feet	mgd	Million gallons per day
CBED	Community Based Economic Development	OHA	Office of Hawaiian Affairs
DHHL	Department of Hawaiian Home Lands	QLCC	Queen Lili‘uokalani Children’s Center
DLNR	Department of Land & Natural Resources	PMRF	Pacific Missile Range Facility
GIS	Geographic Information System	sf	Square Feet
gpd	Gallons per day	SHPD	State Historic Preservation Division
HHC	Hawaiian Homes Commission	STP	Sewage Treatment Plant
IWS	Individual Wastewater System	TBD	To Be Determined
KIP	Kaua‘i Island Plan	USDA	United States Department of Agriculture

HAWAIIAN TERMS

Ahupua‘a	Land division usually extending from the top of the mountain to the coral reef	Kūpuna	Grandparent, ancestor
Auwai	Ditch, canal	Lo‘i	Irrigated terrace , especially for taro but also for rice
Halau	Long house, for canoes or hula instruction; meeting house	Mauka	Toward the mountains
Heiau	Hawaiian pre-Christian place of worship	Makai	Toward the sea
Hui	Club, association; to form a society or organization	Menehune	Legendary race of small people who worked at night, building fish ponds, roads, temples
Iwi	Bone; skeletal remains	Pu‘uhonua	Place of refuge, sanctuary, asylum, place of peace and safety
Kauhale	Group of houses comprising a Hawaiian home; hamlet or settlement		



Executive Summary

The Kaua'i Island Plan (KIP) provides recommendations for the future use of the Department of Hawaiian Home Lands (DHHL) 20,565 acres on Kaua'i (*Figure ES.1*). The plan is intended to guide overall land use patterns and development on Kaua'i for the next 20 years.

GENERAL PLAN GOALS

The KIP is consistent with the DHHL General Plan goals. In particular,

- The proposed land uses exceed the General Plan's goal of delivering 840 Residential homesteads in the next 20 years or an average of 42 per year; and
- Income generating uses constitute less than 1% of the Department's total land holdings on Kaua'i.



Anahola Bay

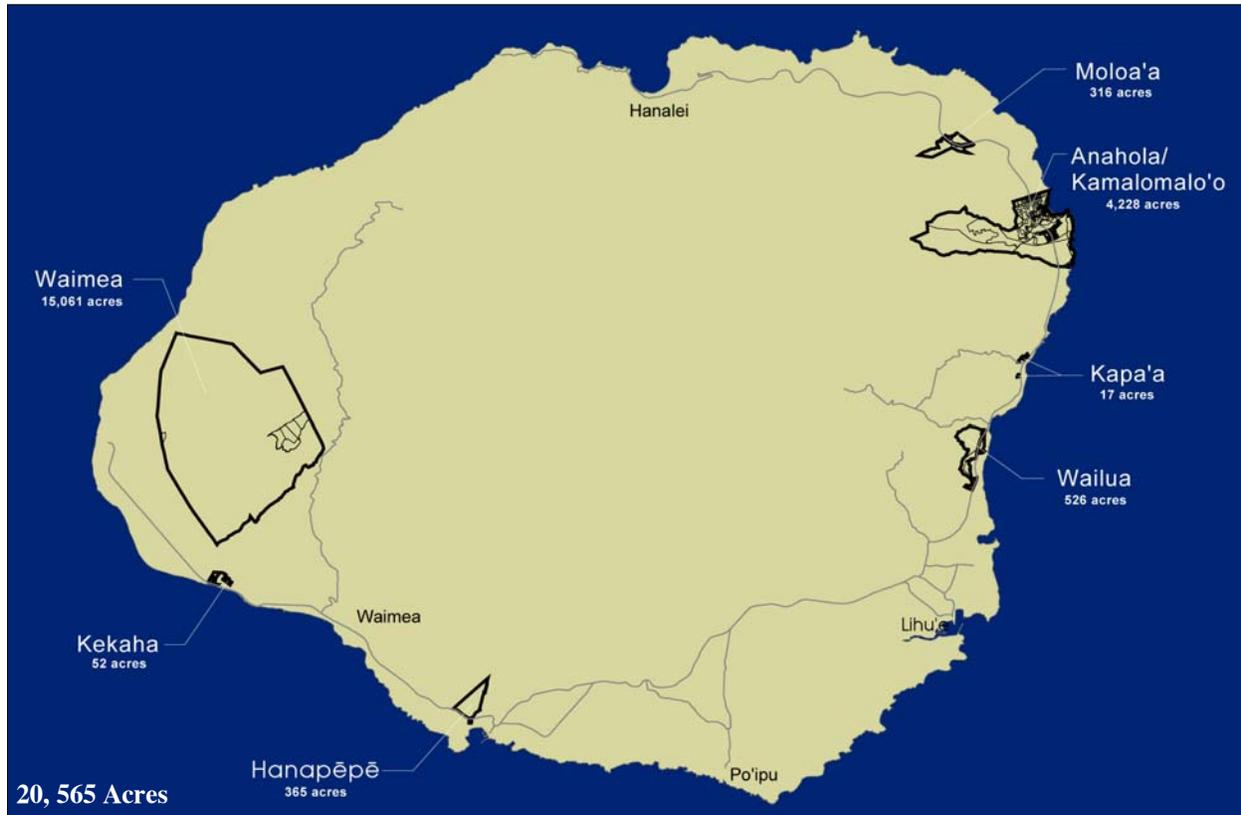


Figure ES.1

DHHL's Kaua'i Lands



LAND USE PLAN

The KIP designates land uses for all of DHHL’s land holdings on Kaua‘i. A synopsis of the major land use designations is provided to the right and discussed below:

Residential Homesteads - The plan proposes 2,541 new residential homesteads at a total cost of \$ 212 million. To create healthy communities, community use areas are planned within each major new residential community. Residential uses will be focused in Waimea, Kekaha, Hanapēpē, Wailua, and Anahola/ Kamalomalo‘o.

Agriculture Homesteads - 284 new agriculture homesteads are proposed in this plan for a total cost of \$ 39 million. In general, these agriculture areas surround proposed higher density residential areas. Proposed agriculture homestead areas are: Waimea, Hanapēpē, Wailua, Anahola/ Kamalomalo‘o, and Moloa‘a.

Pastoral Homesteads – Existing pastoral lots in Waimea will be maintained. The only proposed pastoral homesteads are in Anahola/ Kamalomalo‘o at a cost of \$ 4.2 million.

General Agriculture – Over 13,000 acres of land island-wide are designated General Agriculture. This designation preserves the land for a possible future use and makes it available for groups or individuals to lease it for farming and ranching. Beneficiaries interested in large scale agriculture or ranching are encouraged to lease general agriculture areas. General agriculture areas are located in Waimea, Wailua, Kapa‘a, and Anahola/ Kamalomalo‘o.

Special District – The 2,812 acres designated Special District includes environmentally or culturally sensitive land in Waimea, Kekaha, Wailua, Anahola/ Kamalomalo‘o, and Moloa‘a. Lands in this category should be protected but also made available for certain community and commercial uses.

Community Use – A total of 211 acres is designated Community Use. This includes areas in residential communities such as school and parks sites as well

LAND USE PLAN

Residential Homesteads

- 2,541 lots
- \$ 212 million

Agriculture Homesteads

- 284 lots
- \$ 39 million

Pastoral Homesteads

- 14 lots
- \$ 4.2 million

General Agriculture

- 13,684 acres

Special District

- 2,812 acres

Community Use

- 211 acres

Conservation

- 693 acres

Commercial

- 132 acres

Industrial

- 16 acres



as community use areas with regional significance. Activities related to Community Based Economic Development (CBED) are also included in this category. Community use areas are found in all tracts except Kekaha, Kapa‘a and Moloa‘a.

Conservation – 693 acres of environmentally sensitive areas in Waimea and Anahola are designated Conservation. These areas are also designated Conservation by the State Land Use Commission.

Commercial – Land designated as Commercial for income generation purposes for DHHL include 132 acres of land in Hanapēpē, Wailua, and Anahola.

Industrial – Sixteen acres in Kapa‘a are designated Industrial which will generate income for the Department.

RESIDENTIAL PRIORITY AREAS

The KIP designates three priority tracts for development. These are the residential areas of Wailua, Hanapēpē, and Anahola/ Kamalomalo‘o. These priority areas reflect the Department’s emphasis on developing large master-planned communities to provide as many houses as possible to beneficiaries, in the shortest amount of time and at the least cost. The plan also assumes that existing infill projects currently underway will continue as planned.

DEVELOPMENT COSTS

Order of magnitude costs are provided for homestead developments. These estimates are conservative figures and there may be opportunities to reduce costs. For example, the Department may work with the County or private developers to share the expense of costly off-site infrastructure improvements such as sewage treatment plants. In addition, agriculture and pastoral costs could be reduced by reducing the infrastructure to only gravel roads and potable water. By reducing overall costs, however, beneficiaries may not be able to build homes on agricultural and pastoral homesteads and the Department will be responsible for the maintenance of gravel roads.

RESIDENTIAL PRIORITY AREAS

1. Wailua

- (651) 10,000 SF lots
- 216 acres
- \$ 56 million total
- \$ 86,000/lot
- Includes 15 acres of Community Use

2. Hanapēpē

- (482) 10,000 sf lots
- 168 acres
- \$34 million total
- \$ 71,000/ lot
- Includes 15 acres of Community Use

3. Anahola/ Kalomalo‘o

- (1,218) 10,000 sf lots
- 565 acres
- \$101 million total
- \$ 83,000/ lot
- Includes 54 acres of Community Use



Section 1.0
Introduction

The Kaua'i Island Plan (KIP) provides recommendations for the future use of the 20,565 acres on Kaua'i under the jurisdiction of the Department of Hawaiian Home Lands (DHHL) (Figure 1.1). The plan is intended to guide overall land use patterns and development on Kaua'i for the next 20 years.

This plan assigns Land Use Designations (LUDs) for all of DHHL's lands on Kaua'i and indicates specific areas for priority homestead development.

This introductory chapter provides an overview of DHHL and summarizes the KIP planning process.

Chapter Two of the plan provides an overview of the island and the beneficiary population and their preferences. This chapter also introduces DHHL's 10 land use designations and summarizes the land uses under each LUD in the Plan. A brief overview of infrastructure costs is also provided in this section.

PLAN OVERVIEW

1. Introduction

- Overview of DHHL
- Planning process

2. Island-Wide Analysis

- Island profile
- Beneficiary preferences
- Land use designations
- Infrastructure Cost Estimates

3 – 9. Land Use Plans

- Existing conditions
- Land use plan

10. Priorities & Phasing

11. Conclusion



Figure 1.1



Chapters Three through Nine detail the land use plan for each of the seven DHHL planning areas on Kaua‘i. Each chapter begins with a general discussion of the existing conditions, opportunities and constraints related to that area. The chapters propose land use designations and development themes and include a discussion of infrastructure improvements and rough cost estimates.

Chapter 11 recommends Wailua, Hanapēpē, and Anahola as the three priority development areas. Preliminary lotting schemes are included for Wailua and Hanapēpē. This section also includes a discussion of the phasing for the non-priority areas.

The concluding chapter summarizes the major findings of the KIP and proposes points for future planning studies.

1.1 OVERVIEW & BACKGROUND OF DHHL

DHHL’s mission is to manage the Hawaiian Home Lands trust effectively and to develop and deliver lands to native Hawaiians.

The Hawaiian Homelands Program was started in 1921 with the passage of the Hawaiian Homes Commission Act thanks to the efforts of Prince Jonah Kūhiō Kalaniana‘ole. Unfortunately, the Act was flawed from the beginning due to lack of financial resources and very little useable land. The program struggled for the first 50 years. Recent Legislation from the 1990’s has improved the situation of today’s DHHL. Better lands have been conveyed to the Department and a Hawaiian Home Land Trust Fund for \$ 600 million has been developed. As a result, DHHL is better positioned to serve its native Hawaiian beneficiaries.

The main method by which DHHL serves native Hawaiian beneficiaries is through the 99-year homestead lease. The leases are provided for residential, pastoral, and agricultural uses for an annual fee of one dollar.

At present over 7,000 native Hawaiians throughout the State hold homestead lease awards; while approximately 33,000 applications remain un-awarded. However, the 33,000 number reflects approximately 20,000 individual applicants since a

*DHHL Mission:
To manage the Hawaiian
Home Lands Trust
effectively, and to develop
and deliver land to Native
Hawaiians.*



Prince Kūhiō, Father of Hawaiian Homes Commission Act

DHHL STATEWIDE PROFILE

- 7,000 homestead leases
- 33,000 applications unawarded
- Or, 20,000 individual applicants
- 200,000 plus acres



qualified applicant may apply for two types of awards.

Award recipients make arrangements to finance home construction and renovations as well as agricultural/ranching activity on their awarded land. The Department works with lessees to offer direct loans or loan guarantees for home purchase or construction/renovation as well as development of farms and ranches. The Department has also explored new approaches to home building by partnering with Habitat for Humanity, developing “self-help” housing projects, and offering rent-to-own financing.

The Department’s Land Management Division manages land not currently used for homesteading and negotiates leases that generate income and license agreements for public uses such as utilities or for homestead organizations. Approximately 40 % of the 200,000 plus acres of Hawaiian homelands statewide are managed for long and short term uses. Leases keep lands productive while minimizing the common occurrence of vegetative overgrowth, squatting and unauthorized dumping of refuse and derelict vehicles. The leases also generate revenues for the administration of the homesteading program. Statewide revenues from general leases, revocable permits, and licenses were \$ 6.68 million in fiscal year 2001-02.

1.2 DHHL PLANNING SYSTEM

The KIP is part of the DHHL Planning System (*Figure 1.2*).

The General Plan provides guiding principles for the development of DHHL lands statewide in six areas outlined in the table to the right. With respect to the island of Kaua‘i, DHHL’s planning objectives for the next 20 years include the following:

- Designate all Hawaiian home lands with one of the land use categories under the General Plan;
- Deliver at least 840 Residential homesteads, or an average of 42 per year;



Hanapēpē Land leased to Gay & Robinson for Sugarcane Cultivation

DHHL GENERAL PLAN GOALS

- Land use planning
- Uses for residential, agriculture, & pastoral land
- Water resources
- Land & resource management
- Economic development
- Building healthy communities



• Introduction •

- Provide space for and designate a mixture of appropriate land uses, economic opportunities and community services in a native Hawaiian-friendly environment;
- Direct urban growth to priority development areas based on infrastructure availability, feasible site conditions, beneficiary preference and job opportunities;
- Provide agriculture and pastoral homestead lots for subsistence and supplemental purposes;
- Provide general lease agriculture and pastoral lots of adequate size for commercial farming or ranching business purposes by native Hawaiians.



Pu‘u ‘Ōpae Pastoral Homesteads

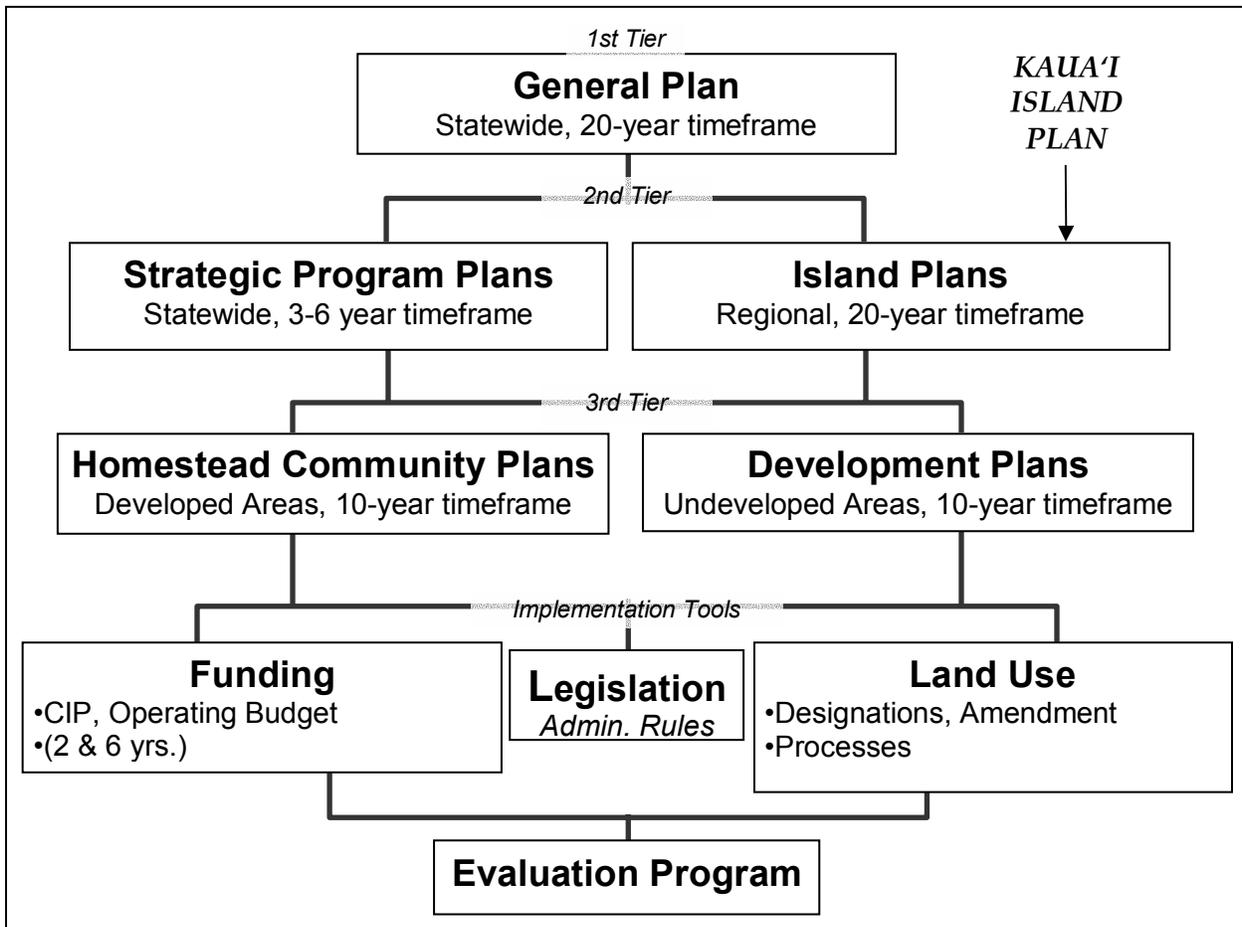


Figure 1.2
DHHL Planning System



• Introduction •

- Identify and establish a clear understanding of existing water resources available to the Hawaiian Home Trust;
- Preserve and protect significant natural, historic and community resources on Trust lands;
- Manage interim land dispositions in a manner that is environmentally sound and does not jeopardize their future uses;
- Allow native Hawaiian use of natural resources on Trust lands for traditional and cultural purposes;
- Use no more than 1% (or 206 acres on Kaua‘i) of Hawaiian home lands for Commercial and Industrial uses by 2014; and
- Establish and implement a planning system that increases beneficiary participation in the development and use of Hawaiian home lands and improves communications between DHHL and the beneficiary community.

1.3 KAUA‘I ISLAND PLAN PLANNING PROCESS

The KIP has been developed over 10-months. Adoption of the plan is scheduled for May 25, 2004.

1.3.1 Background Information

The planning process began by looking at general economic trends on Kaua‘i and collecting data on DHHL’s Kaua‘i lands. A Geographic Information System (GIS) was developed to analyze the environmental and cultural features of the property. The types of features studied are summarized in the box to the right.

This background research also included a beneficiary survey conducted by SMS Research which gathered information on beneficiary lease preference, location preference, and desired community facilities.

This information is summarized in fact sheets included in *Appendix F* and in a Baseline Information Report. The information was also presented to a working group composed of



Anahola Stream & Bay

BACKGROUND INFORMATION

- Topography & elevation
- Streams & waterways
- Soil types & productivity
- Threatened & endangered species
- Wetlands & flood zones
- Rainfall
- Natural hazards
- Public facilities
- Cultural sites
- State Land Use Designations
- County zoning & General Plan



• Introduction •

representatives from homestead associations and beneficiary groups, State and local government agencies, and private land owners. This group provided guidance throughout the planning process on existing conditions and other planning considerations.

1.3.2 Examination of Non-DHHL Parcels

Background information gathering and analysis was not only limited to DHHL owned tracts. Planning assessments were conducted for two parcels not owned by DHHL in order to determine their suitability for residential development. The assessment evaluated existing conditions, identified constraints and opportunities, and lastly recommended that the two parcels are suitable for homesteads. Further analysis of the subject parcels is detailed in *Appendix D*.

1.3.3 Alternative Development Scenarios

Several development alternatives were developed for each DHHL area based on the background information and input from the Working Group.

Generally, the alternatives provided a range of low, medium, and high intensity development options.

These alternatives were presented to the Working Group, DHHL staff, the Hawaiian Homes Commission (HHC), and to the community at two meetings on Kaua‘i. Beneficiaries were also given the opportunity to tour the DHHL properties and were encouraged to make suggestions and critique the alternatives.



Working Group Meeting



Community Input During January 2004 Site Visit to Wailua

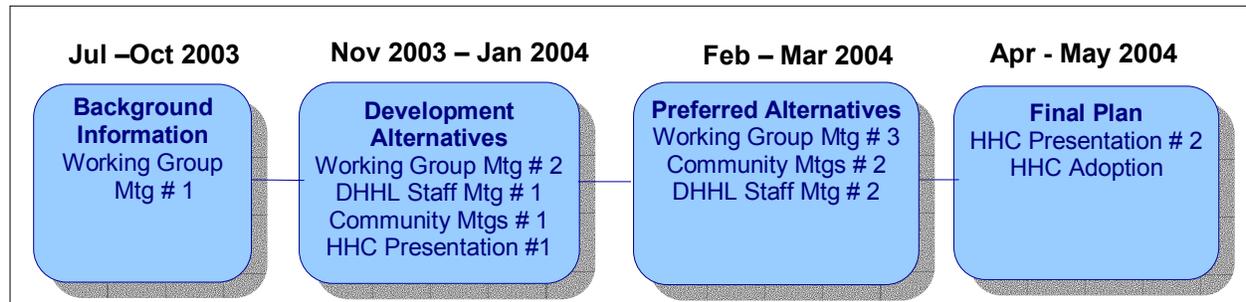


Figure 1.3

Study Methodology



1.3.4 Preferred Development Scenarios

Preferred Development Alternatives were chosen based on community input and DHHL policies. The planning factors used to assess these alternatives are summarized on the right.

The alternatives were presented to the Working Group, DHHL Staff, and the community at two meetings in Kaua‘i and one in Honolulu. Comments were taken at each presentation.

1.3.5 Final Plan

A pre-final plan was presented to the Hawaiian Homes Commission in April, and the written report was submitted for adoption at the May 25, 2004 Hawaiian Homes Commission meeting on Kaua‘i.

1.4 PLANNING TEAM

The DHHL Planning Office oversaw the development of the KIP.

The consultant team was led by Group 70, International who gathered the background information, coordinated the public meetings, and developed the Island Plan. SMS Research conducted the beneficiary survey and Kodani and Associates researched infrastructure considerations and costs.

A working group composed of representatives from the homestead associations, Hui Kako‘o ‘Āina Ho‘opulapula, local and state government agencies, and private landowners convened three times to provide input into the planning process. In addition, beneficiaries commented on the proposed alternatives at five community meetings in January and March 2004.

PLANNING FACTORS

- Beneficiary preferences (survey)
- Community input
- Returns (number of lots)
- Infrastructure costs (roads, sewage, water, etc.)
- Land conditions
- Protection of cultural Sites
- Time frame (20 + years)
- Views
- Community based economic development (CBED)
- DHHL revenue generation
- State and County Land use Designations
- Adjacent land uses
- DHHL General Plan goals
- DHHL policies



Section 2.0

Island-Wide Analysis

This island-wide analysis sets the context for the Island Plan and provides an overview of the Department’s Kaua‘i lands, beneficiary preferences, and proposed land uses.

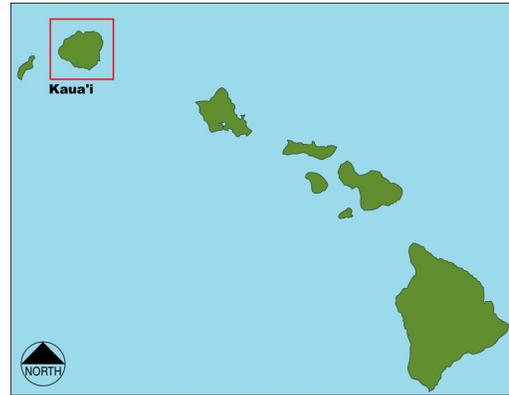
2.1 ISLAND PROFILE

Kaua‘i is the fourth largest island in the Hawaiian chain, comprised of a land area of 352,000 acres. DHHL’s 20,565 acres make up 6 % of the total land area of Kaua‘i.

Līhu‘e, with a population of 5,700 is the center of government and commerce on Kaua‘i, while the largest population center is Kapa‘a with 9,500 residents. The total population of Kaua‘i County is almost 60,000 people making it the least populated County in Hawai‘i. Census results show Kaua‘i’s people in 2000 to be much like the population of the state as a whole. The median household income is slightly lower than the state level – \$ 45,020 compared to \$ 49,820. The percentage of persons below the poverty level is 10.5% compared to the state percentage of 10.7 % and the ethnic mix is diverse, although Caucasian constitutes a higher group on Kaua‘i than statewide. The overall job growth in the Kaua‘i economy was projected at 3.6 % for 2003 compared to 3 % for the State as a whole. The real personal income is also growing and is expected to expand more than 3.3 % in 2004. The unemployment rate for the whole island is 3.8 %.

The 2002 Native Hawaiian Data Book reveals that native Hawaiians on Kaua‘i:

- Are more likely to be below the federal poverty level than non-Hawaiians on Kaua‘i and statewide;
- Make-up the largest group (36.8 %) of people in public housing on Kaua‘i;
- Compose 44.86 % of people receiving welfare benefits on Kaua‘i; and
- Have the highest unemployment rate (12.7 %) compared to native Hawaiians on all other islands and the total population statewide.



Map of the Hawaiian Islands

KAUA‘I OVERVIEW

- Total land area – *352,000 acres*
- Total population – *59,000*
- Largest city – *Kapa‘a*
- Median household income - *\$ 45,020*
- Poverty level - *10.7 %*
- 2003 job growth – *3.6 %*
- Unemployment rate – *3.8 %*



2.1.1 Tourism

Tourism is the largest sector of the economy on Kaua'i, generating 1/3 of the County's real income in a typical year. There were 1,007,000 visitors in 2002 and visitor arrivals are expected to expand more than 6 % in 2004. Mainland tourists, rather than foreign, constitute the majority of the visitors to the island. Also, there are 1,599 timeshare units on Kaua'i which accounts for 37 % of the state's total.

2.1.2 Agriculture

Agriculture is a smaller but still visible part of Kaua'i's economy. While it seems as though many acres of green sugarcane cover the foothills and plateaus of the island, the industry accounts for less than 1 % of the jobs on Kaua'i. However, for much of the 20th Century, the economy of the island rested upon sugar cultivation. The 1996 shutdown of McBryde Sugar and the closure of the Lihu'e Plantation in 2000 left only one sugar producer remaining, Gay and Robinson (G&R), based in West Kaua'i. The closures made a significant amount of agricultural and commercial land available for leasing and caused a significant loss of agricultural jobs. G&R sugar operations remain productive as only one of two sugar plantations in the State. G&R's lands are concentrated on the southwest shore of the island on very high-yield acreage.

Diversified agriculture efforts are struggling largely because the margins have been squeezed due to rising costs. One of Kaua'i's problems is that other countries with similar products have larger programs to support exports. In comparison to other places, Kaua'i also has transportation and other infrastructure impediments such as power and water availability.

However, there are some positive diversified agriculture initiatives. At the local level, farmers' markets around the island are doing well. In addition, range-fed beef may become a near-term use of former sugar land. A&B Kaua'i coffee is experimenting along with a consortium of other Hawaiian coffee growers to produce a uniquely Hawaiian variety of coffee.



Tour Busses at Waimea Canyon State Park

MAJOR ECONOMIC ACTIVITIES

Tourism

- Largest industry & growing

Agriculture

- Smaller but still visible
- Growth of diversified agriculture

High Tech

- Growth at PMRF but limited impact to date



2.1.3 High Tech

There has been progress in creating desirable high tech jobs related to activities at the Pacific Missile Range Facility (PMRF) at Barking Sands in West Kaua‘i, but the impact on official job statistics has been limited to date.

2.1.4 Housing

Kaua‘i is in an affordable housing crisis or a real estate boom depending on how one looks at the situation. There has been a significant increase in home prices on Kaua‘i which have risen 29 % over the past year, while condo prices have risen 85 %. As of February 2004, the median single-family home price for the entire island was \$ 410,000-way out of reach for the local, island resident. The market is particularly strong for high-end properties but all segments of the market are strong including condominiums and raw lands sales.

The most significant barrier to the construction of new affordable housing is the island’s failing infrastructure. The government no longer pays for infrastructure improvements and requires new development to cover the costs making it difficult for affordable housing projects to break even.

2.2 OVERVIEW OF BENEFICIARIES

Beneficiaries must be 18 years of age and must have a blood quantum of at least 50 % Hawaiian in order to be eligible for a Hawaiian homestead. Beneficiaries may apply for one of three lease types: Residential, Agriculture, Pastoral; or a combination of Residential with either Agriculture or Pastoral. Beneficiaries may not apply for all three types of leases.

The Homestead Area and Island-Wide Applications Waiting List Monthly report for July 2003 indicated that 513 leases had been awarded on Kaua‘i. Residential leases, which compose the majority of the awards, are concentrated in Anahola but there are also approximately 105 on the westside in Kekaha and Hanapēpē. All 47 agriculture leases are located in Anahola and the 2 pastoral leases are located in Waimea. The location and types of awards are summarized in the table to the right.



West Kaua‘i Technology & Visitor Center

KAUA‘I’S RISING HOUSING COSTS

Single Family Homes

- February 2004
Median price -
\$ 410,000
- Rose 29 % from 2003

Condominiums

- February 2004
Median price -
\$ 420,000
- Rose 85 % from 2003



As of July 2003, there were 1,479 applications for a residential award, 1,774 applications for an agriculture award, and 220 applications for a pastoral award on Kaua‘i.

Since beneficiaries can apply for more than one type of award, it is important to realize that when existing leaseholders are removed from the applicant list, the total applications are reduced to 3,159. The breakdown is shown in the second table to the right.

However, even when existing leaseholders are deducted from the waiting list, the count is still inflated since applicants can submit multiple applications. The total number of individuals waiting for their first lease is 2,236. This number, which excludes existing homesteaders and removes duplicates, is only 65 % of the total number of Kaua‘i applications.

2.2.1 Beneficiary Preferences

In September 2003, a beneficiary survey was conducted to gather information about beneficiary preferences. Some of the findings are summarized below.

Residential is the preferred award type – Since beneficiaries may apply for more than one type of award, applicants were asked in a survey about their preferred award type. *Figure 2.1* illustrates that while agriculture applications make up the largest type of applications, residential awards are preferred.

Agriculture & pastoral applicants want to live on their homesteads – Agriculture and pastoral applicants overwhelmingly reported that they wanted to live on their homesteads. This preference would require infrastructure improvements which significantly increases the cost of development. However, attendees at community meetings added that cheaper, practical alternative utility systems are being used to supply water and power in rural areas.

Residential lot size preference – Just over half of residential applicants indicated that they would accept a lot smaller than 10,000 square feet (sf) or had no preference.

EXISTING HOMESTEADS

Residential Homesteads

- Anahola - 359
- Kekaha – 69
- Hanapēpē - 36

Agriculture Homesteads

- Anahola - 47

Pastoral Homesteads

- Waimea - 2

SUMMARY OF APPLICATIONS

3,473 Applications

- Residential – 1,479
- Agriculture – 1,774
- Pastoral - 220

3,159 Applications

Excluding Leaseholders

- Residential – 1,445
- Agriculture – 1,528
- Pastoral - 186

2,236 individuals waiting for first lease



There is almost an equal preference for relatively large half-acre to one-acre residential lots and the more typical 10,000 sf lot size.

Preference is for small agriculture lots – 71 % of agriculture applicants prefer a lot that is 5 acres or less. Most applicants are interested in having land for small-scale agriculture operations or a home garden.

Preference is for small pastoral lots – Over three quarters of pastoral applicants prefer lots less than 50 acres in size or have no preference.

Residential location preference - The survey revealed that most residential applicants want to live on the eastside (*Figure 2.2*). Over 20 % of beneficiaries ranked Wailua, Anahola, and Kapa‘a as one of their top two choices. In comparison, the highest ranking area on the westside was Waimea, where just over 10 % of beneficiaries ranked Waimea as one of their top two choices.

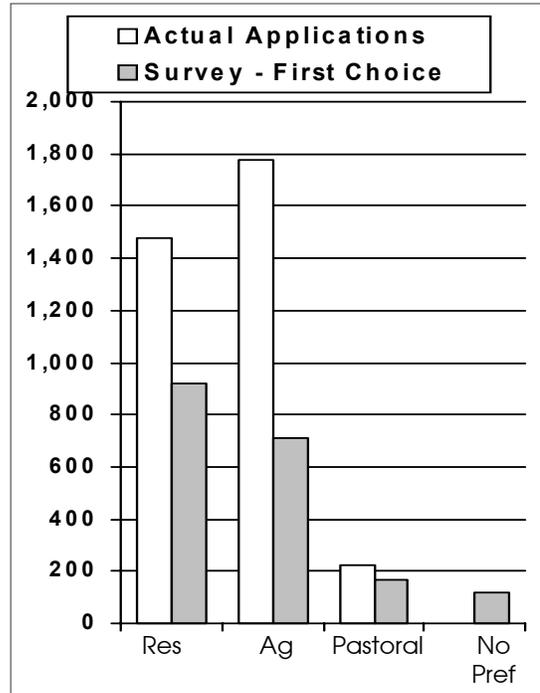
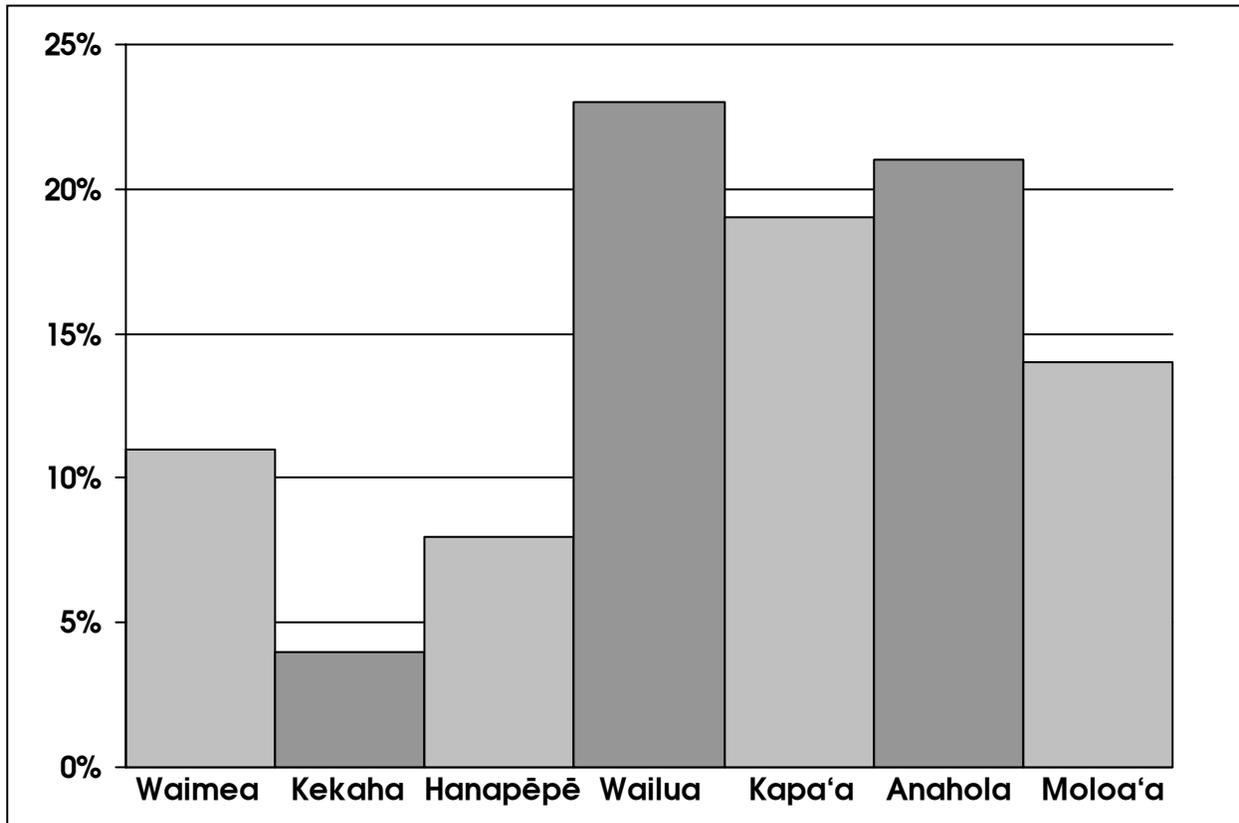


Figure 2.1
Award Type Preferences



Information reflects applicants' top two preferences in a 2003 survey

Figure 2.2
Residential Homestead Preferences



It is possible, however, that misperceptions among beneficiaries may have contributed to the low popularity of the westside properties. First, many beneficiaries may have assumed that future development would occur in Anahola and were unaware that 350 acres at Hanapēpē is available for development. Secondly, beneficiaries may have assumed that future development in Hanapēpē would mimic the existing house lots, which are unpopular among some because of their narrow, small lot size. As a result of the misperceptions, beneficiaries may have chosen eastside properties as their first choice even though their preference was for the westside.



Hanapēpē Homesteads

2.3 LAND USE DESIGNATIONS

The DHHL General Plan provides 10 possible land use designations for Hawaiian Home Lands.

Table 2.1 on the following page describes the intent of these land use designations, the lot sizes, and minimum infrastructure requirements while *Table 2.2* summarizes where these land uses are planned on Kaua‘i.

Certain key planning concepts or themes have directed when and where to designate each of the ten DHHL land uses. They are as follows:

- Focus on development of large, master-planned communities;
- Create full-service communities;
- Use the ahupua‘a concept where feasible;
- Identify income generating opportunities;
- Designate General Agriculture areas for hui and individual entrepreneurs to lease and develop;
- Designate Special Districts for special areas to create a Hawaiian sense of place; and
- Preserve and enhance the use and management of water rights and resources.

These themes are discussed throughout the KIP as they relate to specific land use designations and planning issues.

HOMESTEAD LAND USES SUMMARY		
Type of Use	# of Lots	Acres
Residential	3,012	1,190
Agricultural	331	1,204
Pastoral	16	623
Community Use	--	211
TOTAL	3,359	3,228



	Setting / Intent / Purpose	Lot Size	Minimum Infrastructure
Residential (Homestead)	Residential subdivisions built to County standards in areas close to existing infrastructure.	≤ 1 acre	County standards
Subsistence Agriculture (Homestead)	Small lot agriculture. Lifestyle areas intended to allow for home consumption of agricultural products. Occupancy optional.	≤ 5 acres	Water (catchment or potable or surface) Road access
Supplemental Agriculture (Homestead)	Large lot agriculture. Intended to provide opportunities for agricultural production for supplemental income & home use. Occupancy optional. Farm plan & 2/3 cultivation required.	≤ 40 acres	Water (catchment or surface) & Road access
Pastoral (Homestead)	Large lot agriculture specifically for pastoral uses. Occupancy optional. Ranch plan & fencing required.	≤ 1,000 acres	Road access & livestock drinking water
General Agriculture	Intensive or extensive farming or ranching allowed. Uses subject to HRS Chapter 205. May serve as an interim use until opportunities for higher & better uses become available.	To be determined	N/A
Special District	Areas requiring special attention because of unusual opportunities & / or constraints. E.g. natural hazard areas, open spaces, raw lands far from infrastructure (difficult to improve), mixed use areas, green-ways	To be determined	To be determined
Community Use	Common areas for community uses. Includes space for parks & recreation, cultural activities, CBED, & other public amenities.	To be determined (see standards)	County standards
Conservation	e.g. water sheds, endangered species, sensitive historic & cultural sites	To be determined	N/A
Commercial	e.g. Retail, business & commercial activities	To be determined (see standards)	County Standards
Industrial	e.g. processing, construction, manufacturing, transportation, whole sale & warehousing	To be determined	County Standards

Table 2.1

DHHL Land Use Designations



Kaua'i Island Plan
DEPARTMENT OF HAWAIIAN HOME LANDS
• *Island-Wide Analysis* •

Land Use Designation	WAIMEA (Acres)	KEKAHA (Acres)	HANAPEPE (Acres)	WAILUA (Acres)	KAPA'A (Acres)	ANAHOLA (Acres)	MOLOA'A (Acres)	TOTAL (Acres)	%
Residential	202	39	168	216	0	565	0	1,190	5.79%
Subsistence Agriculture	214	0	158	99	0	533	200	1,204	5.85%
Supplemental Agriculture	0	0	0	0	0	0	0	0	0.00%
Pastoral	475	0	0	0	0	148	0	623	3.03%
General Agriculture	12,527	0	0	52	1	1,018	86	13,684	66.54%
Special District	1,258	13	0	92	0	1,419	30	2,812	13.67%
Community Use	42	0	22	20	0	127	0	211	1.03%
Conservation	343	0	0	0	0	350	0	693	3.37%
Commercial	0	0	17	47	0	68	0	132	0.64%
Industrial	0	0	0	0	16	0	0	16	0.08%
TOTALS	15,061	52	365	526	17	4,228	316	20,565	100.00%

Table 2.2
Summary of Existing and Proposed Land Use Designations



2.3.1 Residential Homesteads

Residential homesteads are the priority land use designation in the KIP. Residential is the only land use that requires occupancy and that infrastructure be built to County standards.

A total of 1,190 acres are designated Residential in the Plan. The 2,541 proposed residential homesteads are located in Waimea, Kekaha, Hanapēpē, Wailua, and Anahola/Kamalomalō‘o. This will bring the total number of residential homesteads on Kaua‘i to 3,012.

The emphasis is on large master-planned communities. Community use areas are planned in conjunction with each residential area to create healthy communities, not just houses and subdivisions.

2.3.2 Agriculture Homesteads

There are two agriculture homestead land use designations: Subsistence or small lot agriculture; and Supplemental or large lot/commercial agriculture.

Agriculture homesteads are a low priority in the Plan because development costs are high and the relative benefits are less. The proposed small lot sizes reflect beneficiary preferences for lots for residential purposes more than agriculture uses.

Subsistence agriculture homestead areas are proposed on 1,204 acres in Waimea, Hanapēpē, Wailua, Anahola/Kamalomalō‘o, and Moloa‘a. The 284 proposed homesteads will bring the total number of agriculture homesteads in Kaua‘i to 331. No Supplemental Agriculture homesteads are proposed.

2.3.3 Pastoral Homesteads

Pastoral homesteads are also not a high priority in the Plan. Only 148 acres in Anahola/Kamalomalō‘o consisting of 14 new Pastoral homesteads are designated. The two pastoral homesteads in Waimea (covering five lots and 475 acres) will be retained.

Development costs per lot for Pastoral homesteads are the most expensive.



Residential & Future Agriculture Homestead Area in Hanapēpē



Future Residential Homestead Area in Kekaha



Pu‘u Ōpa‘e Pastoral Homesteads



2.3.4 General Agriculture

Land designated General Agriculture can be leased for farming to generate income for the Department. This designation is also used as an interim designation until higher and better uses become available.

Most of DHHL’s Kaua‘i land (13,684 acres or 66.5 %) is designated General Agriculture. Only the Hanapēpē and Kekaha tracts do not have land in this category.

Much of the land in this category is unsuitable for homestead development because of the steep topography or because of difficult access and the high cost of development. Beneficiaries and others are encouraged to prepare land use plans and apply to use these areas for agriculture and pastoral uses under permits, licenses, or general leases.

2.3.5 Special District

The Special District designation is for land with special opportunities and / or constraints. This category is applied to environmentally or culturally sensitive land that requires some conservation principles but can also be used for compatible activities if managed correctly. Ideally, native Hawaiian beneficiaries will oversee these lands and use them to create a Hawaiian sense of place for all beneficiaries living on Kaua‘i.

Lands totaling 2,812 acres are designated Special District in Waimea, Kekaha, Wailua, Anahola, and Moloa‘a. This designation protects special areas while making them available for certain justified uses.

The Special District areas are significant for the entire island, not just the parcel in which they are located. For example, in Waimea, the Pu‘u ‘Ōpae reservoir area can serve as a retreat and refuge area.

Special Districts play a role, as well, for the ahupua‘a. Often special district areas will provide the corridor for pathways or linkages between the mountain and ocean resources. In some cases the Special District designation protects the irrigation ditches and other special features.



Waimea General Agriculture Area



Waimea Pu‘u ‘Ōpae Special District Area



Special District around Malae Heiau Area in Wailua



2.3.6 Community Use

The Community Use land use designation includes a variety of community uses such as parks and open spaces, cultural centers, CBED projects, schools, camping areas, meeting pavilions, social service centers, cemeteries, and other amenities. Commercial activities not intended as income generation tools for DHHL are generally designated Community Use.

Community Use areas totaling 211 acres are designated in Waimea, Hanapēpē, Wailua, and Anahola/Kamalomalo‘o. A distinction is made throughout the plan between community uses related to a residential area such as a school or park and more regional community uses such as the social service centers proposed in Wailua and Hanapēpē.

2.3.7 Conservation

Conservation areas are designated in Waimea and Anahola/ Kamalomalo‘o to be consistent with State Land Use Designations. The Conservation area totals 693 acres. Conservation areas protect the resources of the ahupua‘a including water resources.

2.3.8 Commercial and Industrial

Commercial and Industrial designations are both income generating uses for the Department. The lease revenues can be used to fund homestead development. Commercial and industrial uses are designated in Hanapēpē, Wailua, Kapa‘a, and Anahola/Kamalomalo‘o. The 148 acres of land in these categories represent 0.72 % of DHHL’s total land acreage on Kaua‘i.

The DHHL General Plan stipulates that not more than 1 % of the Department’s land statewide should be used for these purposes.

2.4 INFRASTRUCTURE COST ESTIMATES

The KIP provides rough order of magnitude costs for each land use designation.

Infrastructure costs include a breakdown between on-site and off-site costs. All costs are considered on-site improvements except for sewage treatment



Picnic Tables in Anahola



Hanapēpē makai Industrial/Commercial Area



Kapa‘a existing Warehousing Use



plants, wells, water storage facilities, drainage improvements, and intersection improvements.

All residential homestead cost estimates are based on County standards and provide infrastructure for beneficiaries to live on lots.

The estimates for agricultural and pastoral costs also are based on County rural standards. Costs include potable water, waste water treatment, roads, site preparation, and electricity. Irrigation costs are not included because this cost is difficult to determine since it depends on the future of sugarcane cultivation on Kaua‘i and the plans for neighboring land owners to maintain the existing ditch system.

Throughout the Plan some Community Use and Commercial costs are reflected in the cost estimates, however these cost are more challenging to develop because the exact future use is unknown. Cost estimates for Community Use include only the estimated cost for water storage. Commercial cost estimates include both water storage costs and sewage treatment plant costs where applicable.

No estimates are provided for General Agriculture, Special District, or Conservation.

The cost estimates are conservative figures and there may be opportunities to reduce infrastructure costs. The Department could work with the County or private developers to share the expense of building costly off-site improvements such as sewage treatment plants. Furthermore, Agriculture and Pastoral costs could be minimized by reducing the infrastructure provided to only gravel roads and potable water.

Land Use	Infra-structure
Residential (Homestead)	Water, wastewater, roads, site prep, drainage, electricity
Agriculture & Pastoral (Homestead)	Water, waste-water, rural roads, site prep, electricity (No irrigation)
General Agriculture	None
Special District	None (Water, IWS, roads, electricity for Kekaha)
Community Use	Water Storage
Conservation	None
Commercial	Water Storage, Sewage Treatment
Industrial	Water, wastewater, roads, electricity

Infrastructure Improvements included in Cost Estimates



Section 3.0

Waimea

3.1 EXISTING CONDITIONS

The Department owns 15,061 acres in Waimea, located on the dry leeward side of the island.

The land is upland, beginning where the fertile Mānā Plain abuts the rugged dramatic terrain spreading mauka to Waimea Canyon State Park and Pu‘u Ka Pele Forest Reserve (*Figure 3.1*).

The nearest population centers are the towns of Kekaha and Waimea. The community of Mānā and PMRF are located in the coastal plain below the DHHL property. Neighboring land uses are shown in the map below.

Two thirds of the area can be described as steep, mountainous terrain and isolated valleys. The elevation ranges from 200 feet to 2,800 feet above sea level. The lower elevations receive 25 inches of rain per year while the upper elevations receive 40 inches per year.

Only five pastoral lots under two homesteads have been awarded in Waimea. The other land uses are summarized in the table on the right.

EXISTING USES

- 2 pastoral homesteads (5 lots totaling 475 acres or 3% of total area)
- Sugarcane (923 acres) & diversified agriculture (20 acres)
- Military (26 acres)
- DLNR game mgmt. (13,600 acres)



Waimea – Mānā Plain & DHHL Parcels

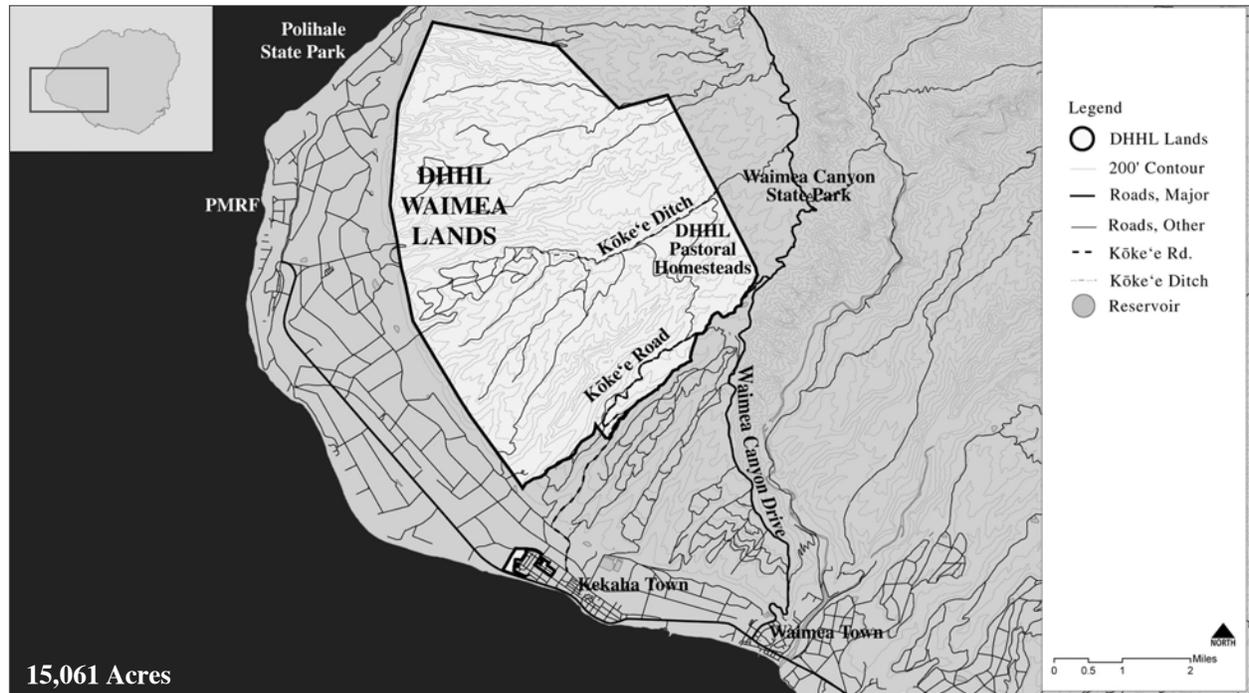


Figure 3.1
Waimea



• Waimea •

All of the Waimea lands are located within the Agricultural State Land Use designation except for a small strip along the northeastern border which is designated Conservation.

3.2 OPPORTUNITIES AND CONSTRAINTS

The table to the right summarizes and discussion below summarizes the major factors influencing possible land uses in Waimea.

Topography – Impressive views are available from the high, cool elevations. However, the steep isolated plateaus and valleys that predominate in Waimea make development challenging and increase costs.

Large Land Area - Since the Department owns over 15,000 acres in Waimea, several different types of uses can be accommodated on the property. However, the large land area can also be an impediment to development because costs increase over vast acreages. This is especially true of road costs and pipes for water and sewage treatment.

Limited Road Access – Access to the eastern border of the property is provided along Kōke‘e Road, a heavily traveled paved road connecting Kekaha with Waimea Canyon State Park. There are no other paved roads in Waimea but there are several cane haul and 4-wheel drive roads within the property.

Water – The closest potable water serves the DLNR lease properties and parks in Kōke‘e. A .2 million gallon (mg) 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.

Wastewater – It is not feasible to connect to the closest wastewater system in Waimea Town.

Cultural Resources – Cultural sites such as the Makahoa and Hauola heiau and iwi in Wai‘awa‘awa Valley should be protected. Buffer zones should be established around these sites.

PLANNING CONSIDERATIONS

Opportunities

- Great views & cool temperatures at high elevations
- Ample land
- Kōke‘e road
- Ditch system, & reservoir
- Important cultural sites

Constraints

- Mostly steep, mountainous terrain & isolated valleys
- Large area can increase development costs
- Lack of potable water & sewage treatment
- Environmental contamination



Kōke‘e Ditch in Waimea



• Waimea •

Environmental Contamination – A one-acre area in Wai‘awa‘awa Valley, known as “poison valley” is contaminated by Amfac’s former pesticide storage warehouse which was used to mix chemicals.

3.3 LAND USE PLAN

Figure 3.2 illustrates the proposed uses for this expansive property. The land uses are also summarized in the table to the right.

Development in Waimea will be centered around the Mauka Village which concentrates residential and agriculture homesteads and community uses along Kōke‘e Road to take advantage of existing road access to the area. The Mauka Village is based on the ahupua‘a concept. Waimea will be the mountain resource link to DHHL’s makai lands in Kekaha.

The existing Pu‘u ‘Ōpae pastoral homesteads will be retained but no additional homesteads are designated because of the high cost of development.

The Pu‘u ‘Ōpae reservoir area and Wai‘awa‘awa Valley are designated Special District. The scenic Pu‘u ‘Ōpae will be a Pu‘uhonua or retreat and refuge area. The Special District designation in Wai‘awa‘awa Valley will preserve important cultural resources as well as create opportunities for groups to cultivate taro on the valley floor traversed by irrigation ditches and where the rainwater collects.

Links between the Special Districts and the Mauka Village will be provided physically by 4-wheel drive roads and hiking trails. The pastoral lots will also be linked to the Pu‘u ‘Ōpae Special District.

Most of Waimea will remain in General Agriculture to preserve it for future uses. Possible interim uses include agriculture and tropical forestry.

A strip of land on the northwest corner is designated Conservation to be consistent with the State Land Use designation.

The overall cost to develop Waimea is estimated to be \$ 22.4 million. The off-site and on-site costs are summarized in the table to the right and discussed further in the following sections. Major infrastructure improvements include a new well and

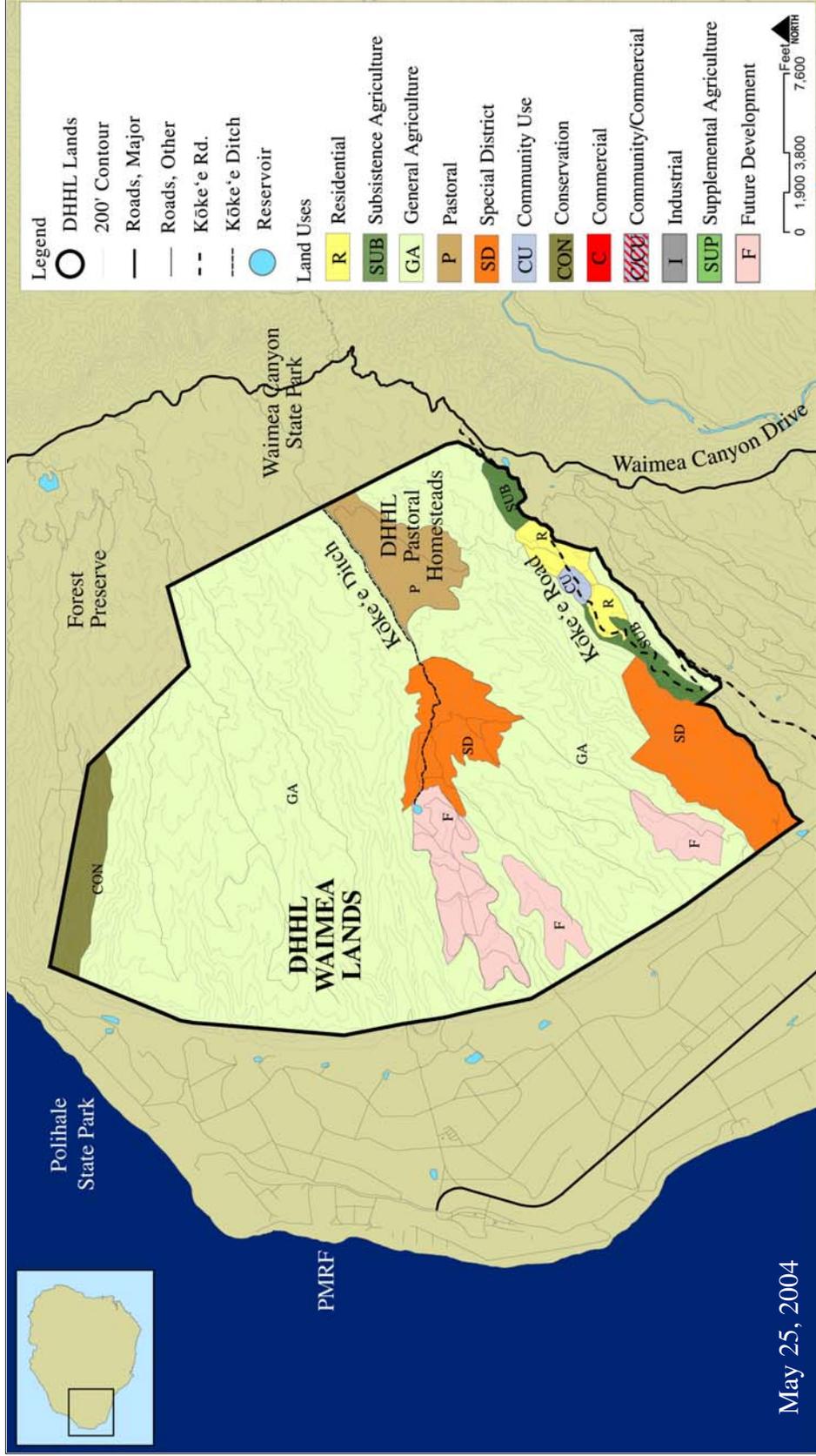
LAND USE PLAN
<i>Mauka Village</i>
<ul style="list-style-type: none"> • (141) 1-acre residential lots on 202 acres • (50) 3-acre subsistence agriculture lots on 214 acres • 42 acres of Community Use
<i>Pu‘u ‘Ōpae Pastoral Lots</i>
<ul style="list-style-type: none"> • 5 existing pastoral lots
<i>Special District Areas</i>
<ul style="list-style-type: none"> • Pu‘u ‘Ōpae / Pu‘uhonua retreat (523 acres) • Wai‘awa‘awa Valley (735 acres)
<i>General Agriculture</i>
<ul style="list-style-type: none"> • 12,527 acres • 895 acres suitable for future development
<i>Conservation</i>
<ul style="list-style-type: none"> • 343 acres

WAIMEA TOTAL INFRASTRUCTURE COSTS	
	Total Cost
On-site	\$ 18.8 M
Off-site	\$ 3.6 M
TOTAL	\$ 22.4 M



Kaua'i Island Plan
DEPARTMENT OF HAWAIIAN HOME LANDS

• Waimea •



R = 202 acres; 141 lots @ 1 acre	SD = 1,258 acres; 523 acres @ Pu'u 'Ōpae & 735 acres @ Wai'awa'awa Valley
SUB = 214 acres; 50 lots @ 3 acres	CU = 42 acres
GA = 12,527 acres; 895 acres suitable for future development	CON = 343 acres; North edge, native species habitat
P = 475 acres; 5 existing lots (2 leases)	

Figure 3.2
Waimea Land Use Plan

• Waimea •

water storage facilities, individual wastewater systems, and road improvements.

Waimea is not identified as a high priority development area. Priorities are discussed further in Chapter 10.

3.3.1 Mauka Village

The Mauka Village concept takes advantage of the access provided by Kōke‘e Road, easy to develop flatter areas, traffic generated by tourists visiting Waimea Canyon State Park, cool mountain temperatures, and scenic vistas.

Based on the ahupua‘a concept, the Mauka Village is envisioned as the mountain resource and Kekaha as the ocean habitat. The physical link is Kōke‘e Road, which is indicated on the land use plan.

The Mauka Village will be a self-sufficient community where residents live, grow agricultural products for themselves and for sale, make native Hawaiian crafts, and operate shops and restaurants. The commercial activities will cater to residents and tourists traveling through the area. Tourists will be attracted to the authentic Hawaiian community and residents will be able to earn money.

Since the Mauka Village is relatively isolated from other developments, the success of the project will depend on its residents working together to create a vibrant community. Although not a requirement, leases could be awarded to a hui or similar social network of small groups of related people since people with familial ties may be more likely to work together.

A summary of the proposed number of lots and costs is provided in the table on the right. The KIP proposes 141 one-acre residential lots around the community use area. The large lot sizes will preserve the rural character of the area and protect the views of Waimea from the Mānā Plain. The residential lots will also be large enough for homesteaders to locate stores or restaurants along the street frontages of the village area as well as having homes on their property.

“Based on the ahupua‘a concept, the Mauka Village is envisioned as the mountain resource & Kekaha as the ocean habitat.”



Waimea – Proposed Mauka Village Area

MAUKA VILLAGE

Residential

- (141) 1-acre residential lots
- 202 acres total
- \$121,000 per lot

Subsistence Agriculture

- (50) 3-acre subsistence agriculture lots
- 214 acres total
- \$ 87,000 per lot

Community Use

- 42 acres total



• Waimea •

Three-acre subsistence agriculture lots are proposed along each end of Kōke‘e Road bordering the residential homestead areas. It is anticipated that most homesteaders will construct residences with their leases as well as participate in agricultural activities. The location of agriculture lots on the fringe of the Mauka Village will decrease densities as one moves away from the Community Use core area.

The center of the Mauka Village will be a community use area. A generous amount of land (42 acres) has been designated Community Use although only a small amount may be developed initially. Community uses include everything a self-sufficient community needs such as a cemetery, churches, parks, and schools. This community use area should encourage a mix of uses with commercial activities to create an economically viable village.

Table 3.1 below summarizes the development costs. Large initial investments in off-site water infrastructure will be required. Individual Waste Water Systems (IWS) will provide wastewater treatment. Road development costs are reduced by providing some access to the residential homesteads along the existing Kōke‘e Road. Access to all agriculture lots is provided by Kōke‘e Road which explains why the agriculture infrastructure lots are lower than residential costs. Agriculture lot costs could be further reduced by only providing potable water and gravel roads.



Valley between Mauka Village and Pu‘u ‘Ōpae Pastoral Leases



Agricultural lands in Waimea

	Water	Sewage	Roads	Site Prep	Electricity	TOTAL
Major Factors	New tank, well, & transmission lines	IWS	Use Kōke‘e Rd. & construct additional	4,000 sf pad	Transmission lines	
On-site	\$ 4.2 M	\$ 1.9 M	\$ 6.5 M	\$ 1.9 M	\$ 4.2 M	\$18.8 M
Off-site	\$ 3.6 M	--	--	--	--	\$ 3.6 M
TOTAL	\$ 7.8 M	\$ 1.9 M	\$ 6.5 M	\$ 1.9 M	\$ 4.2 M	\$ 22.4 M

Table 3.1

Waimea Mauka Village Infrastructure Costs



3.3.2 General Agriculture

The majority of Waimea (83%) is designated General Agriculture. This will preserve the land for future uses while making it available to individuals and groups for short-term leases.

Much of this land is very rugged and unsuitable for most types of activities and development. Care must be taken to ensure that permitted uses are compatible and do not lead to further erosion of the land.

Some flatter areas accessible by cane haul and 4-wheel drive roads are shown on the land use plan as possible areas for future development. These 895 acres could be the sites of future homesteads beyond the 20-year planning framework identified in this plan.

Present uses such as sugarcane cultivation, diversified agriculture, and Department of Land and Natural Resources (DLNR) Game Management could continue within the General Agriculture designation. Other possible activities include tropical forestry or tour operations such as All Terrain Vehicles (ATV) or hiking tours focusing on eco-education or adventuring touring.

No infrastructure improvements are proposed for this area. The ditch system and roads should be maintained in their current condition.

3.3.3 Special District Areas

The area around Pu‘u ‘Ōpae and Wai‘awa‘awa Valley has been designated as Special District.

The Pu‘u ‘Ōpae and surrounding reservoir area will be a Pu‘uhonua; or a retreat and place of refuge for beneficiaries island-wide. This 523 acre area will be a passive recreation area where individuals and community groups can hike to take advantage of the serenity and scenic views. Visitors can swim in the reservoir while experiencing the breath-taking views of Ni‘ihau.

Beneficiaries can also operate tour groups, youth or adult camps or other retreat activities as community economic development projects in the Pu‘u ‘Ōpae Pu‘uhonua. For example, a pier could be built onto the reservoir and the reservoir could be stocked with fish. The area could also be developed as a place of



Rugged lands in Waimea

“The Pu‘u ‘Ōpae and surrounding reservoir area will be a Pu‘uhonua; or retreat or place of refuge for beneficiaries island-wide.”



View of Ni‘ihau from Pu‘u ‘Ōpae



• *Waimea* •

traditional healing which could include a research and training academy on traditional healing methods or a care home where actual traditional therapies are practiced. Pu‘u ‘Ōpae could be replanted with native vegetation for learning and use in traditional therapies.

Also designated as Special District, are 735 acres in Wai‘awa‘awa Valley to preserve important cultural resources and to provide opportunities for taro cultivation and other native Hawaiian cultural practices.

A former pesticide/herbicide storage site in Wai‘awa‘awa Valley has been tested for hazardous contamination by the Department of Health. Any needed cleanup of the 1-acre site will be a priority. The federal Environmental Protection Agency (EPA) will determine if Amfac, the sugar company who contaminated the site, should be responsible for the cleanup and EPA Brownfield funds could be used to restore the area.

After the cleanup is complete, the valley will make an ideal location for native Hawaiian cultural activities. The rich resources in the valley can become a model for water use and resource management. The ditch system, which provides water in the valley, is both a symbol of the ancient menehune and modern technology.

Cooperative agricultural ventures could cultivate lo‘i or other crops in the valley. Other activities could take advantage of the hot dry conditions of the valley to dry fish or fruit. The duration of leases should be based on the types of activities and their economic, cultural, and social value.

No infrastructure improvements are proposed for the special district areas. However, the ditch system and existing 4 wheel drive access should be maintained. If specific groups wish to develop programs and facilities in the Special Districts, additional infrastructure will need to be developed.

3.3.4 Conservation

A strip of land in the northwest corner of the parcel is designated Conservation to be consistent with the State Land Use designation.



Pu‘u ‘Ōpae Reservoir



Wai‘awa‘awa Valley



Section 4.0

Kekaha

4.1 EXISTING CONDITIONS

DHHL owns two non-adjacent tracts of land near Kekaha Town on the dry westside of the island. Kekaha Town is a residential community flanked by agricultural lands on either side and within two miles of DHHL's Waimea lands (*Figure 4.1*).

The existing uses of the Kekaha lands are summarized in the table to the right. The established DHHL community of 69 homesteads is located on 19 acres surrounded by other residential uses. Planning has begun to develop 49 homesteads on 20 acres of a 32-acre parcel recently acquired by DHHL. There are no development plans for 12 acres fronting the highway and beach because there is evidence of burials in the dune areas. These western parcels are bounded by uncultivated agricultural land to the north and west, Kekaha Gardens subdivision to the east, and Kaumuali'i Highway and the beach to the south.

The property is designated Urban on the State Land Use map.

EXISTING USES

- 69 Residential homesteads (19 acres)
- 49 Residential homesteads under development (20 acres)
- 12 acres undeveloped along highway
- 1 acre undeveloped near existing homesteads

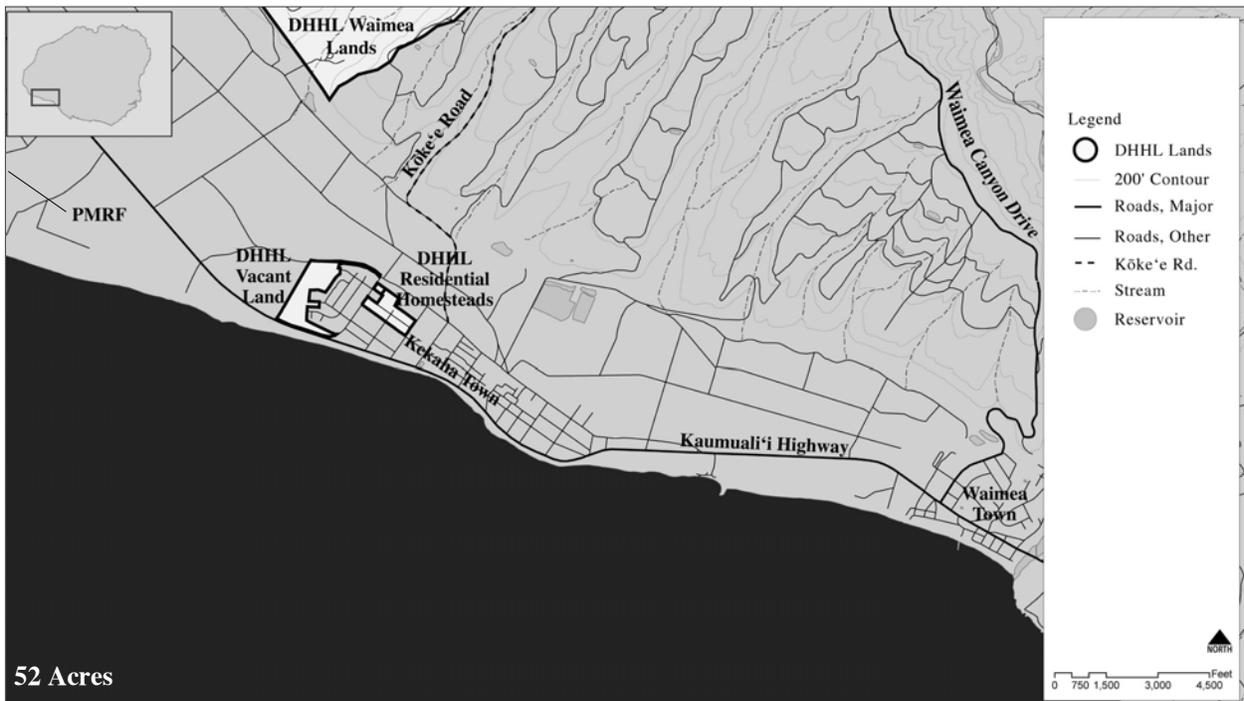


Figure 4.1
Kekaha



4.2 OPPORTUNITIES AND CONSTRAINTS

Location – The parcels are located near Kekaha town and PMRF and adjacent to existing neighborhoods. The land situated along the beach and highway is optimal for community recreational facilities.

Topography – The land is flat, easy to develop, and suitable for buildings.

Sewage Treatment System – There is no sewage treatment plant in the area.

Community Resources - There is a cemetery, school, playground, community center, and ocean recreation activities in the area.

Burials – An archeological study completed in 1993 revealed that there are iwi located on the 12-acre undeveloped parcel near the ocean. Community input suggests that there are additional burials in the sand dune area. Any development should be low intensity and sensitive to the burials on this property.

Flooding – Most of the Mānā Plain and Kekaha is prone to flooding and the DHHL parcels are no exception. The land is located in the lowland coastal plain close to the beach. While some of the land floods and is near the tsunami inundation zone, all features of the land are considered favorable for building. Pumps maintained by the State of Hawai‘i are critical to the prevention of flooding in the region.

4.3 LAND USE PLAN

While the mauka village in Waimea is envisioned as the mountain resource link, Kekaha is envisioned as the ocean resource link for the ahupua‘a.

The DHHL Kekaha parcels will continue to be primarily a residential community (*Figure 4.2*). No changes are proposed for the developed western parcels and the eastern parcels will be developed as a residential neighborhood as already planned.

New special district uses are recommended for the 12-acre parcel near the highway. These uses will be very low impact and will not affect burials in the

PLANNING CONSIDERATIONS

Opportunities

- Location in a developed community
- Flat, easy to develop topography
- Community resources

Constraints

- No sewage system
- Burials
- Flooding



Existing Residential

“Kekaha is envisioned as the ocean resource link for the ahupua‘a.”



Kaua'i Island Plan
 DEPARTMENT OF HAWAIIAN HOME LANDS
 • Kekaha •

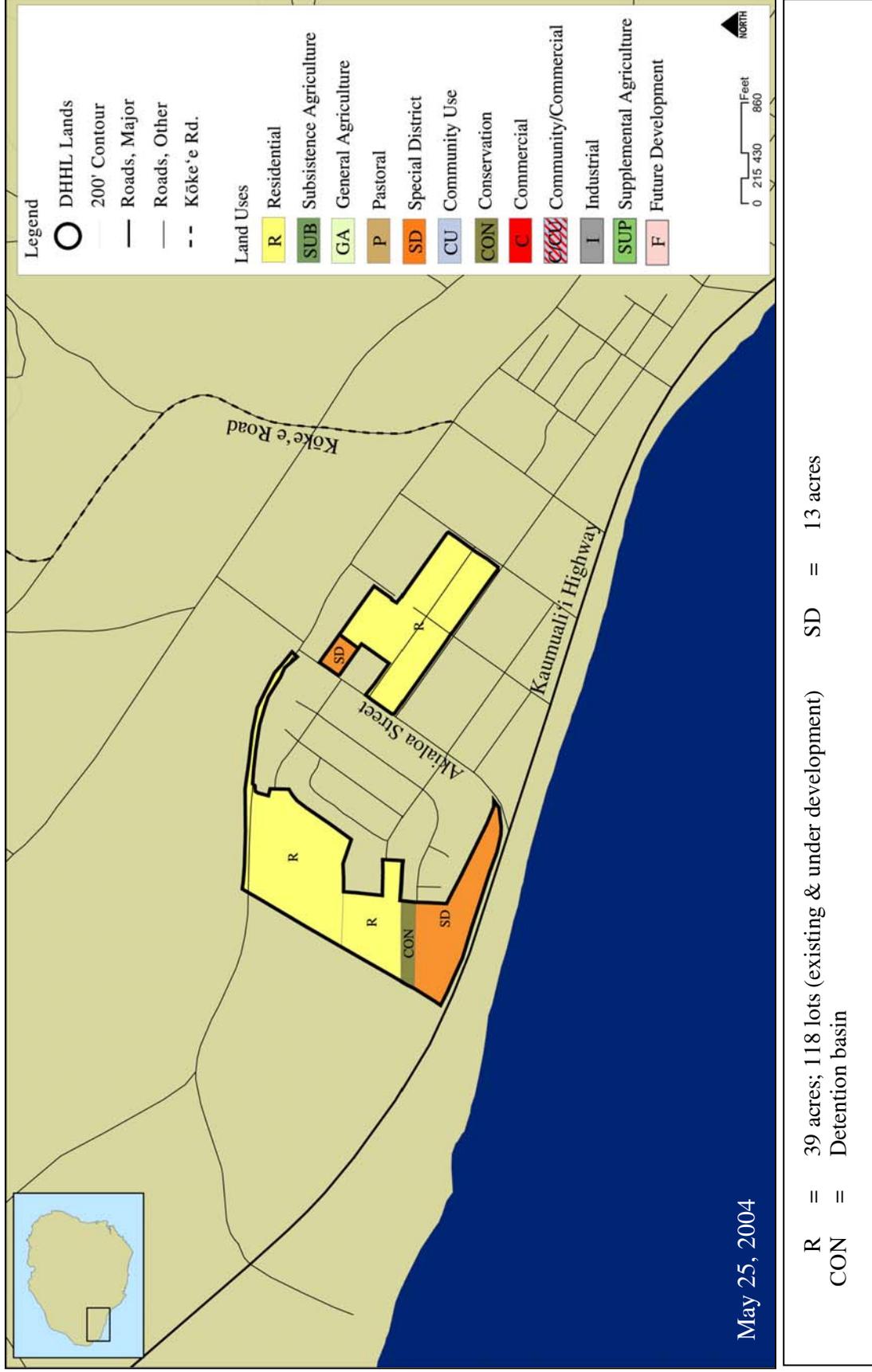


Figure 4.2
 Kekaha Land Use Plan

area. Proposed uses include a pavilion, picnic tables, camping area, and small scale commercial such as a lunch wagon or water sports equipment rental shop.

4.3.1 Residential

The primary land use of DHHL’s Kekaha lands is Residential. No changes are recommended to the existing eastern most parcels and the homesteads proposed for the western area should be built as planned. Once the western residential lots are complete, there will be 118 residential homesteads in Kekaha.

4.3.2 Special District Area

A 12-acre site adjacent to the highway and beach and 1 acre near the existing homesteads are designated Special District.

A 1993 archeological study revealed the presence of burials in the 12-acre beach area. These burials should be protected and future development should be compatible with this culturally sensitive area. Proposed uses include a pavilion area, picnic tables, campsites, and restroom facilities. The area would benefit DHHL beneficiaries island-wide who would be able to come to the property for camping and ocean recreation. This area could also be used for small-scale commercial development such as a lunch wagon or water equipment rental shop in order to capitalize on the location near to the beach park and highway.

Iwi are also present on the site near the existing homesteads and no development is proposed.

The estimated cost of developing restroom facilities on the 12-acre beach parcel is approximately a half a million dollars.

LAND USE PLAN

Residential

- (69) 10,000 -12,500 sf existing homesteads on 19 acres
- (49) 10,000 – 12,500 sf lots under development on 20 acres

Special District

- 13 acres
- Community pavilion, small scale commercial
- Total cost \$ 554,000



Kekaha Burial Area Near Beach



Section 5.0

Hanapēpē

5.1 EXISTING CONDITIONS

DHHL has 365 acres of good agricultural land, just west of historic Hanapēpē town and the Hanapēpē River (Figure 5.1).

The parcels span both mauka and makai of Kaumuali‘i Highway with the majority of land on the mauka side.

The 6-acre makai parcel is bounded by the Kaumuali‘i Highway on the North, Lele Road on the west and a drainage channel on the east. The only adjacent use is the Hanapēpē transfer station which is located to the south of the property.

A dilapidated warehouse and parking lot are currently located on the makai parcel designated Urban by the State Land Use system.

The 359-acre mauka area is located across Kaumuali‘i Highway. The eastern border of the land is Moi Road and Hanapēpē Heights, a single family residential neighborhood. Agricultural lands are located to the west of the property.

The mauka parcels are a green, gently rolling landscape at a low elevation ranging from 20 to 200



Hanapēpē – Mauka Sugarcane Fields & Homesteads

EXISTING USES

- 36 Residential homesteads (10 acres)
- Sugarcane
- Industrial in makai area

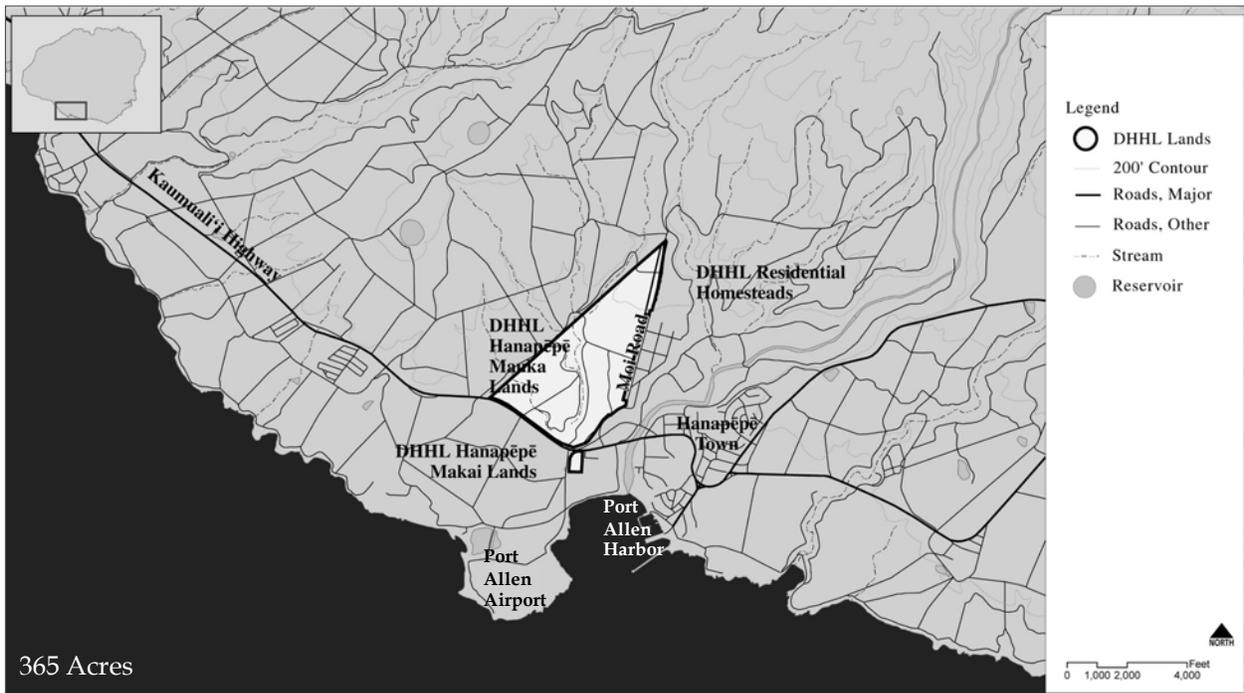


Figure 5.1
Hanapēpē



ft. The land is bisected by Kulamanu Gulch. It receives less than 30 inches of rainfall each year.

The mauka parcels are located within the State Land Use Agricultural District.

5.2 OPPORTUNITIES & CONSTRAINTS

Good Agricultural Land – Portions of the mauka lands are rated high by both the Land Study Bureau and the Agricultural Lands of Importance to the State of Hawai‘i (ALISH) classifications. Hanapēpē is the only area where DHHL parcels receive this classification on Kaua‘i.

Good Residential Land – The terrain and soil is well suited for buildings. The relatively flat conditions and scenic views make Hanapēpē a good site for residential development.

Location – The Hanapēpē parcels are within easy commuting distance of high tech jobs at the PMRF and resort related jobs at Po‘ipū. Furthermore, the mauka land fronting Kaumuali‘i Highway and the makai land at the crossroads of the highway, Hanapēpē Road, and the road to Port Allen airport and Salt Pond Park, provide opportunities for commercial development.

Roads – Access to the existing homestead lots is provided via Moi Road. Future residential development will require the development of a secondary access from Kaumuali‘i Highway. The existing cane haul roads could be upgraded to provide access to the mauka lands.

Irrigation – A ditch system provides irrigation water to the mauka lands in sugar production. The ditch system could provide irrigation water to agriculture homesteads if adequately maintained.

Potable Water – Since there is only capacity for 40 more units, any major development in the Hanapēpē area will require a new water source. Any development west of Kulamanu Gulch would also require a new water service system.

Wastewater – New development could hook into the existing system serviced by the wastewater treatment plant in ‘Ele‘ele. This plant has capacity for 200,000 million gallons per day (mgd) or

PLANNING CONSIDERATIONS

Opportunities

- Fertile agricultural land
- Relatively flat topography
- Good views
- Existing cane haul roads
- Irrigation ditch system
- Wastewater treatment available
- Highway frontage
- Good location
- Existing residential community

Constraints

- Drainage issues near highway
- Water upgrades necessary
- Traffic congestion on Moi Road



Fertile & Flat Hanapēpē Mauka Lands



• Hanapēpē •

approximately 500 new households. Other sewage treatment alternatives may have to be developed if the Hanapēpē commercial and community use areas are developed and non DHHL area are developed.

Drainage - Run-off from the mauka lands flows under the Kaumuali‘i Highway to a channel, and then to the ocean. The culvert crossing the highway has been blocked by debris during storm events, creating flooding problems. Development would likely require drainage improvements to mediate this situation.

Existing Residential Community – The existing 36 Hawaiian homesteads in Hanapēpē are built adjacent to a single-family residential neighborhood. Any future development should be compatible with the surrounding residential neighborhood.

5.3 LAND USE PLAN

Hanapēpē is envisioned to be DHHL’s largest residential and agricultural community on the westside with commercial and community use amenities (*Figure 5.2*).

The makai lands will be a commercial area to generate income for the Department. Future development should capitalize on the property’s location on a major intersection near the waterfront.

The three areas proposed for the mauka lands are: a regional center; a residential community; and an agricultural homestead area.

The Mauka Regional Center will provide commercial uses and social services for the entire Westside.

The residential community is proposed close to the highway near the regional center and includes a community use area for a school, parks, and neighborhood commercial services.

The agriculture homesteads are concentrated upland and along Kulamanu Gulch. Beneficiaries will be able to engage in agricultural activities on some of the islands most fertile land away from pollution from the highway.



Drainage Channel under Kaumuali‘i Hwy.

LAND USE PLAN

Makai Commercial

- 6 acres
- Linkages to highway & Port Allen Airport
- DHHL income generation

Mauka Regional Center

- 11 acres Commercial
- 7 acres Community Use

Residential Community

- (482) 10,000 sf new residential lots on 158 acres
- 15 acres Community Use

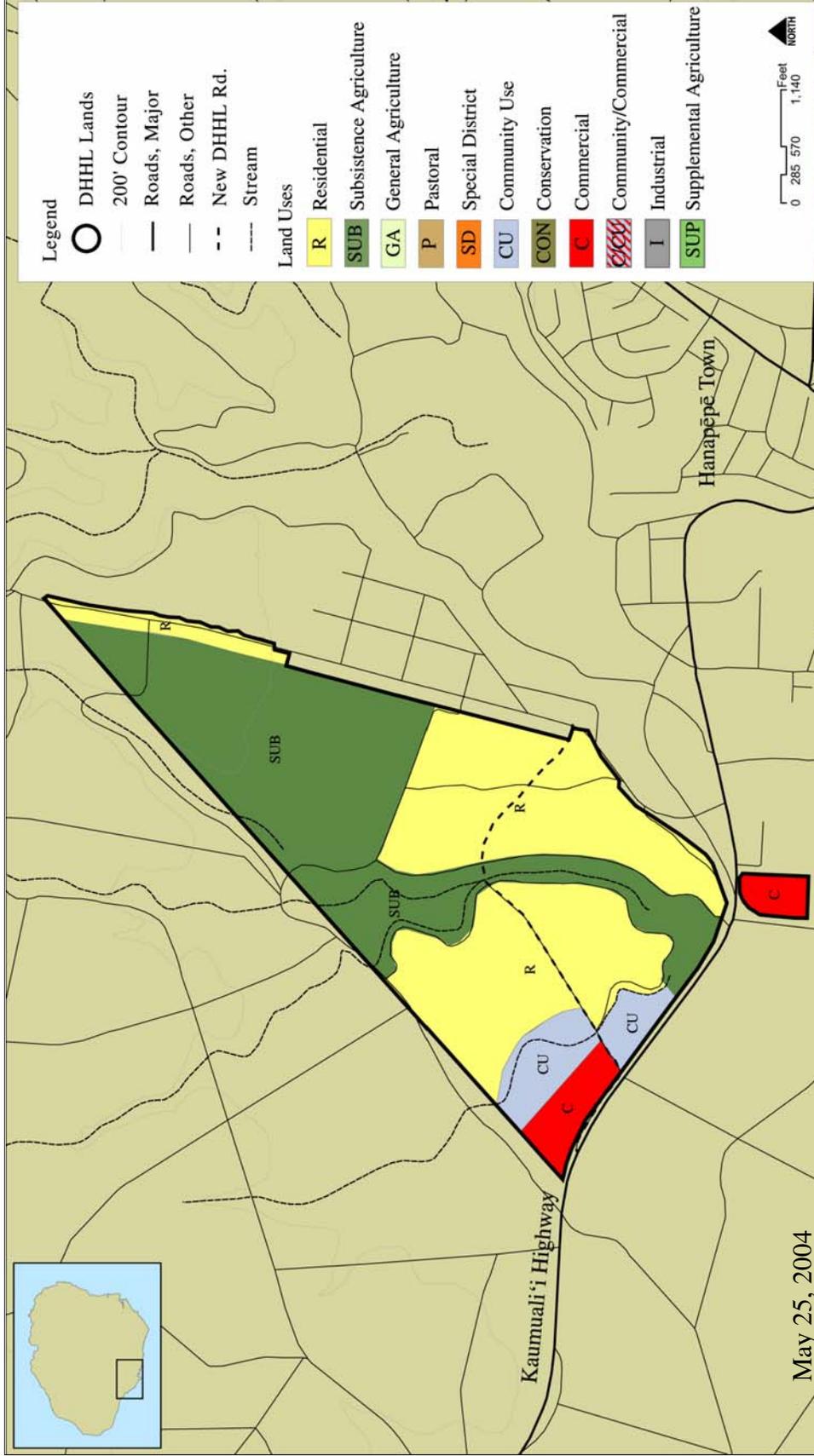
Subsistence Agriculture

- (13) 3-acre lots along gulch
- (36) 2-acre lots mauka
- 158 acres total



Kaua'i Island Plan
DEPARTMENT OF HAWAIIAN HOME LANDS

- Hanapēpē •



R = 168 acres; 482 lots @ 10,000 sf
SUB = 158 acres; 13 lots @ 3 acres & 36 @ 2 acres

CU = 22 acres; 7 acres along Hwy & 15 acres behind Commercial
C = 17 acres; 6 acres makai & 11 acres mauka

Figure 5.2
Hanapēpē Land Use Plan

• Hanapēpē •

Hanapēpē is the only DHHL property on Kaua‘i where no property is set-aside in the General Agriculture designation or recommended for preservation by placement in the Conservation or Special District. This is because the existing condition of the land provides few obstacles to development so homesteads can be awarded on most of the land.

5.3.1 Makai Commercial

The 6-acre property makai of the highway is DHHL’s best located income generation property on the westside. The future use of the property should take advantage of its location on a major intersection near the waterfront, Port Allen Airport (Burns Field), and Salt Pond Park.

This area could be developed as a small scale festival market similar to Pike’s Place in Seattle. Merchants, including beneficiaries, could sell their crafts, produce, local products like salt and other items in booths, creating a lively environment for visitors. A stage surrounded by café style tables in the center of the development would further contribute to the retail environment. Workspaces and kitchens for the artists and merchants could be provided on the interior of the property. Boating and nearby ocean activities could provide the themes of the commercial development

If there is not a market demand for commercial space, an industrial use would also be compatible with the surrounding land uses. Warehousing or other support services could cater to the Port Allen Airport area.

Both the industrial or commercial uses could be developed by an outside developer or a group of beneficiaries living in the newly created DHHL community mauka of the highway.

It is difficult to estimate the on-site development costs without a definite development plan. Future development would require intersection improvements plus a new well and water storage facilities.

HANAPĒPĒ TOTAL INFRASTRUCTURE COSTS	
	Total Cost
On-site	\$ 37 M
Off-site	\$ 10 M
TOTAL	\$ 47 M



Existing Warehouse – Hanapēpē Makai

“The 6-acre property makai of the highway is DHHL’s best located income generation property on the westside.”



5.3.2 Mauka Regional Center

The Mauka Regional Center will provide commercial and social services to the westside. This 11-acre commercial area, located along the highway will cater to nearby residents and highway travelers and generate income for DHHL. A strip mall could be developed on the site composed of small shops and restaurants with a more major grocery store as anchor tenant. A gas station with convenience store would also be an appropriate tenant.

The 7-acre regional social service center site proposed east of and adjacent to the commercial area would house Native Hawaiian service agencies such as Kamehameha Schools, native Hawaiian Health Program, Queen Lili‘uokalani Children’s Center (QLCC), Alu Like, and Office of Hawaiian Affairs (OHA). Beneficiaries expressed a need for these types of social services on the westside.

Access to the regional center will be provided from the highway and from the proposed road along the existing cane haul road. This road will also be a major feeder road for the proposed residential community. Pedestrian access should also be provided from the residential areas to the Regional Mauka Center so residents can walk to shops and services.

It is difficult to estimate the cost of infrastructure improvements without a better understanding of the proposed future developments. However, off-site costs will include intersection improvements and a new well and water storage facility. The estimated cost of the commercial area which includes water storage, water transmission line, wastewater transmission lines, and electricity is one million dollars. The proposed social service center cost is a half a million dollars which includes the same improvements as the commercial.

5.3.3 Residential Community

The Hanapēpē residential community is the second of three priority developments outlined in Section 10. It will be the largest homestead community on the westside and the third largest on the island. The Hanapēpē lands are relatively easy to develop and



Future Mauka commercial

“The Mauka Regional Center will provide commercial and social services to the westside.”



Hanapēpē – Future Home sites



are located within easy commuting distances to jobs at PMRF and Po‘ipū.

Residences will be buffered from the Highway by the Mauka Regional Center, and Agriculture lots in the Kulamanu Gulch. Pedestrian links should be provided between the residential areas separated by Kulamanu Gulch.

To reduce dependence on the congested Moi Road, the existing cane haul road should be upgraded and extended across the gulch into a major feeder for the neighborhood.

A large community of (482) 10,000 sf residential lots is proposed. The lot size will be larger than the 7,500 sf lots already awarded in the Hanapēpē Heights neighborhood. The 10,000 sf lot size was chosen to provide beneficiaries with space and privacy while also providing densities to reduce overall infrastructure costs and provide more awards.

The Hanapēpē development will be a complete community with commercial and community use amenities nearby such as parks, meeting halls, and neighborhood type commercial activities. The community uses, located away from the highway because of safety concerns, are accessible to the surrounding community via roadways and pedestrian pathways.

The estimated infrastructure costs for the residential community is \$ 34 million and is summarized in *Table 5.1*. The full-build out of the Hanapēpē

“The Hanapēpē lands are relatively easy to develop and are located within easy commuting distance to jobs at PMRF and Po‘ipū.”

RESIDENTIAL COMMUNITY

Residential

- (482) 10,000 sf lots
- 158 acres total
- \$ 71,000 per lot

Community Use

- 15 acres total
- Space for parks, school, and commercial, etc.

	Water	Sewage	Roads	Site Prep	Electricity	TOTAL
Major Factors	Serve 40 lots, then new well required	Existing STP& transmission lines	Use highway, Moi Rd. & upgrade cane haul	4,000 sf pad & drainage improve.	Transmission lines	
On-site	\$ 3.6 M	\$ 3.6 M	\$12.3 M	\$ 4.8 M	\$ 3.6 M	\$ 28 M
Off-site	\$ 5.4 M	--	\$ 250,000	\$ 500,000	--	\$ 6 M
TOTAL	\$ 9 M	\$ 3.6 M	\$ 13 M	\$ 5.3 M	\$ 3.6 M	\$ 34 M

Costs are estimates for complete residential community. Community Use costs are included but will likely change depending on future use.

Table 5.1
Hanapēpē Residential Infrastructure Costs



residential development will require water, road, and eventually wastewater improvements. There are presently 40 more water units available so some lots could be developed without any major infrastructure improvements provided no capacity is used for DHHL commercial or community uses or non-DHHL development.

5.3.4 Subsistence Agriculture

DHHL’s most fertile agriculture lands are located in Hanapēpē. An agricultural community composed of 49 lots between two and three acres is proposed. This size lot, favored by most beneficiaries, is considered large enough for small scale agriculture and keeps beneficiaries eligible for certain types of Department of Agriculture (USDA) loans.

Two distinct agricultural areas are proposed: the mauka area and the Kulamanu Gulch area. Two – acre lots in the mauka area are located away from the highway and can be used for organic farming. This proposed agricultural community will have less impact on Moi Road than a higher residential community would. The Kulamanu Gulch area while not in the floodplain is wet and could be used for lo‘i. Three acre lots are recommended in this area. A siltation or detention basin may be required in the agricultural area along the highway to address drainage issues.

The total cost of the agricultural community is estimated to be \$ 9.4 million (*Table 5.2*). This includes a new well, storage facility, water transmission lines, roads, IWS, site preparation, and electricity. Costs could be reduced by only providing potable water and gravel roads.

“DHHL’s most fertile agricultural lands are located in Hanapēpē.”

SUBSISTENCE AGRICULTURE

- (36) 2-acre lots & (13) 3-acre lots
- 158 acres total
- \$190,000 per lot

	Water	Sewage	Roads	Site Prep	Electricity	TOTAL
Major Factors	New tank, well, & transmission lines	IWS	Use Moi Rd. & fix cane haul	4,000 sf pad	Transmission lines	
On-site	\$ 1.7 M	\$ 490,000	\$ 4.4 M	\$ 490,000	\$ 1.7 M	\$8.8 M
Off-site	\$ 560,000	--	--	--	--	\$560,000
TOTAL	\$ 2.3 M	\$490,000	\$ 4.4 M	\$ 490,000	\$ 1.7 M	\$9.4 M

Table 5.2
Hanapēpē Subsistence Agriculture Infrastructure costs



Section 6.0

Wailua

6.1 EXISTING CONDITIONS

The Wailua lands are located south of the mouth of the Wailua River near the more densely populated areas of Wailua and Kapa'a and are essentially the halfway point of the Island for residents from the north shore and the westside (*Figure 6.1*).

DHHL owns a total of 526 acres in the Wailua area. This includes 52 acres makai of Kūhiō Highway and 474 acres on the mauka side of the highway.

Lydgate Park, the Wailua Golf Course, the 46 room Kaha Lanai Resort, the 216-room Aloha Beach Resort, and the Wailua Sewage Treatment Plant border the makai lands. The mauka lands are bordered by Kālepa Ridge, Wailua River channels, the County Correctional Facility, and Grove Farm agricultural lands.

The properties on both sides of the highway are fertile agricultural lands that were used for sugarcane. However, only 67 acres are now being used for pasture and diversified agriculture and the rest remains fallow.

EXISTING USES

- Permits for grazing & diversified agriculture (66.5 acres total)
- Fallow sugarcane fields in remainder of area



41-acre Wailua Makai parcel

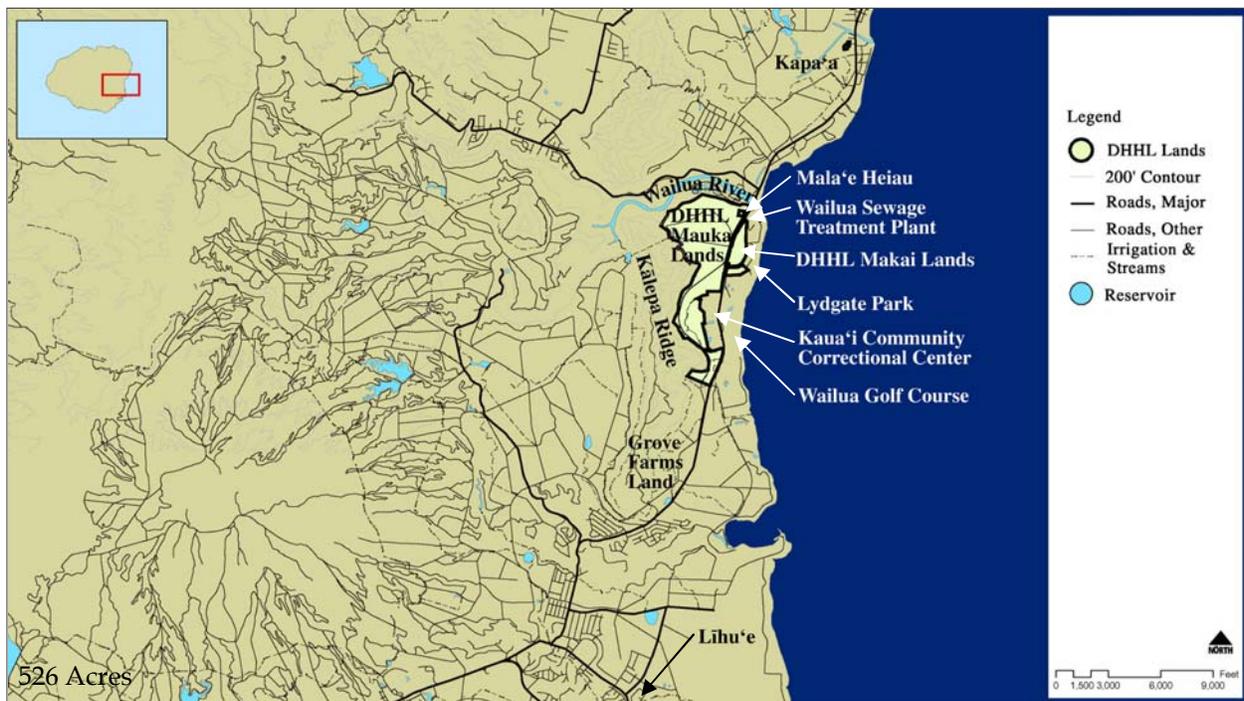


Figure 6.1

Wailua



Most of the property is designated Agriculture on the State Land Use map. Eleven acres bordering the Wailua Golf Course are designated Urban.

No homestead leases have been awarded on the Wailua property.

6.2 OPPORTUNITIES AND CONSTRAINTS

Topography – The flat and rolling hills make the Wailua area relatively easy to develop and create breathtaking views from this property.

Location – The Wailua property is ideally located for a new residential community because homesteaders would be able to work in Wailua, Kapa‘a, and Līhu‘e without a long commute. Services and recreational amenities are also nearby.

Agricultural land – Some of the Department’s best agricultural land is located in Wailua.

Water – There is a shortage of water in the Wailua area. Large-scale development could require two new wells and new water storage facilities. There is an existing ditch system on the property which could be used for irrigation water or for a surface water treatment plant for potable water.

Sewage Treatment Plant – There is enough capacity at the Wailua Sewage Treatment plant for a major residential development in the area. Odors from this plant can be smelled on the makai parcels and may need to be mitigated prior to development of the area.

Cultural Resources – There are no known cultural sites on DHHL property. However, the entire Wailua area is culturally significant. The area around the mouth of the Wailua River was the seat of Kaua‘i’s royalty for centuries. Mala‘e Heiau is located across Kūhiō highway from the Kaua‘i Resort and bordering the DHHL mauka lands. Two other important heiau, Hikina‘akala and Poliahu Heiau are also located in the area.

Roads and Traffic – Access to the property is provided by the heavily congested Kūhiō Highway. Several unimproved cane-haul roads are located within the property. Plans are underway to construct a bypass road that could bisect the Wailua

PLANNING CONSIDERATIONS

Opportunities

- Good agricultural land
- Large, easy to develop property
- DHHL District Office planned in makai area
- Ditch system
- Cultural sites
- Wastewater treatment available
- Makai lands well sited for regional services
- Near major population centers & jobs
- Near recreational amenities

Constraints

- Kapa‘a Bypass route
- Water upgrades needed
- Wetlands near County jail
- Wailua Sewage Treatment Plant odors



Wailua Golf Course



lands and make the area less desirable for residential development.

Flooding – The land around the Kaua‘i Community Correctional Center is, known as one of the island’s worst flood prone areas and is not suitable for development.

6.3 LAND USE PLAN

The land use plan for Wailua (*Figure 6.2*) provides separate but synergistic visions for the makai and mauka lands. The makai area will be a regional commercial and social service center while the mauka area will be a major new residential area.

The Commercial and Community Uses at the regional center on the makai side of the highway will cater to residents and visitors to Kaua‘i’s eastside and north shore and generate income for DHHL as well as jobs for beneficiaries. The DHHL Kaua‘i District Office is already planned for this area.

The mauka residential community will have a school, parks, kūpuna housing and other community uses.

The narrower southern portion of the property will be designated Subsistence Agriculture to take advantage of the ditch and productive agricultural conditions.

Three mauka areas have been designated Special District. Residences will be buffered from the highway by a Special District corridor. The important cultural resources near the Wailua River and Mala‘e Heiau will be protected by another Special District strip. The third Special District area borders the ditch along the western border of the property in order to preserve and protect the water.

Flood prone areas near the County correctional facility have been designated General Agriculture due to the difficulty of development.

Residential homesteads in Wailua and the complementary commercial and community use areas are the top priority project recommended for development on Kaua‘i.

LAND USE PLAN

Makai Regional Center

- 47 acres Commercial
- 5 acres Community Use

Residential

- (651) 10,000 sf residential lots on 216 acres
- 50 unit Kūpuna Housing
- 15 acres for schools, parks, etc.

Subsistence Agriculture

- (35) 2-acre lots on 99 acres

Special District

- 92 acres bordering Highway, Wailua River, and ditch

General Agriculture

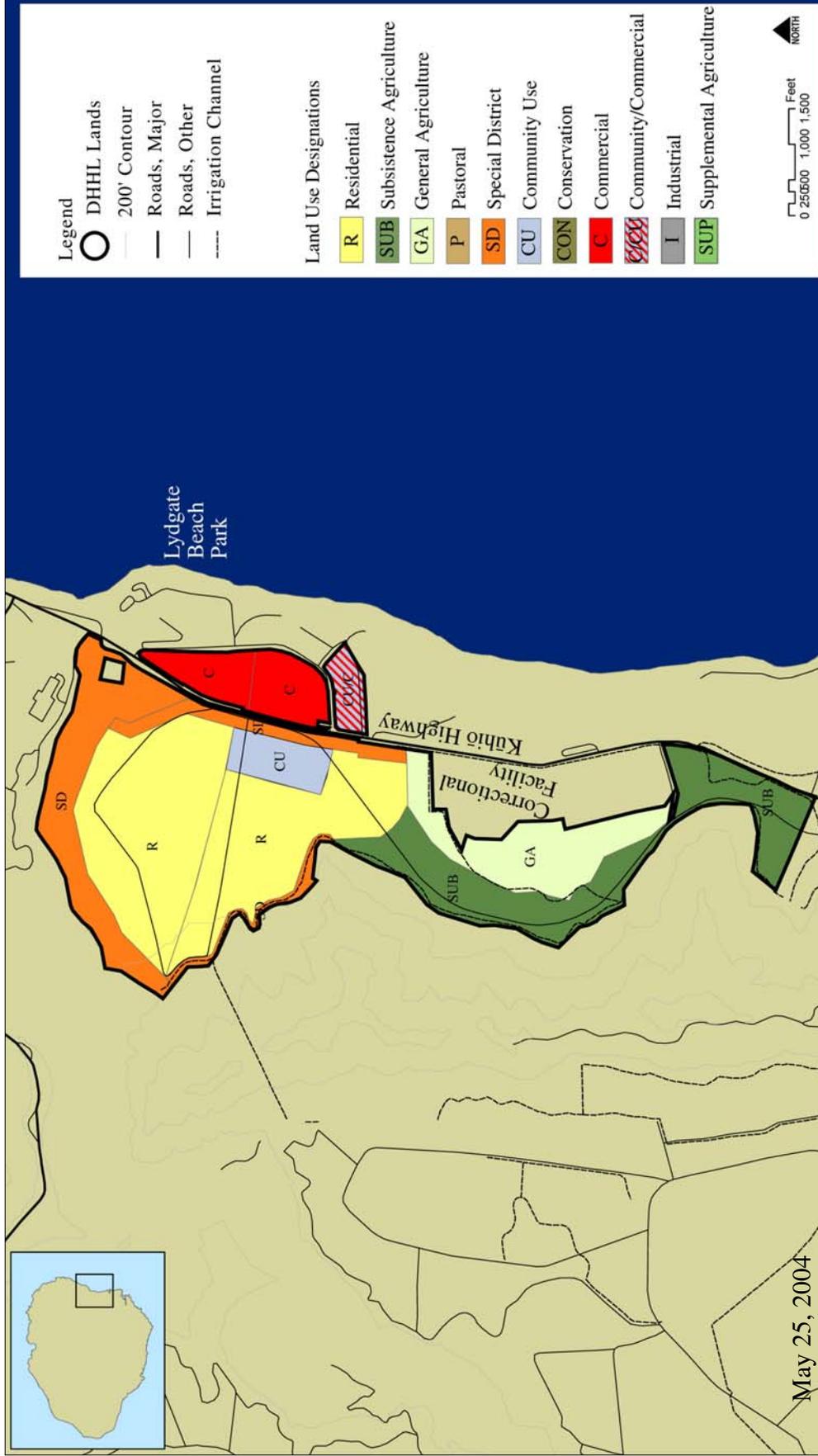
- 52 acres prone to flooding near jail

WAILUA TOTAL INFRASTRUCTURE COSTS	
	Total Cost
On-site	\$ 55 M
Off-site	\$ 9.6 M
TOTAL	\$ 65 M



Kaua'i Island Plan
DEPARTMENT OF HAWAIIAN HOME LANDS

• Wailua •



R = 216 acres; 651 lots @ 10,000 sf
SUB = 99 acres; 35 lots @ 2 acres
GA = 52 acres

SD = 92 acres
CU = 20 acres; 5 acres makai & 15 acres mauka
C = 47 acres

Figure 6.2
Wailua Land Use Plan

6.3.1 Makai Regional Center

The makai lands will be developed as a regional commercial and social service center. These uses are compatible with the surrounding regional recreational uses of Lydgate Park, the County golf course, and two hotels.

Commercial uses are proposed for the larger 45-acre parcel and part of the smaller 11-acre parcel bordering the golf course. The retail uses will provide income for DHHL to fund the construction of future homesteads and will cater to the entire region. Possible uses could include a traditional shopping mall, a theme park, or Big-box retail such as Costco.

A native Hawaiian community service center catering to eastside residents is planned on the makai portion of the 11-acre parcel. DHHL’s District Office is planned for this area and other tenants could include Kamehameha Schools, the Kaua‘i Children’s Museum, the Native Hawaiian Health Program, QLCC, Alu Like, and OHA.

6.3.2 Residential Community

Wailua is a priority development area and will be the second largest DHHL community on the island. Wailua was chosen as the site of this new Hawaiian community over the other DHHL properties for several reasons:

- Wailua ranked high in the 2003 beneficiary preference survey and at community meetings.
- Wailua is located near other population centers, jobs, and amenities.
- There is a critical mass of easy to develop undeveloped land with good site access.
- There is capacity at Wailua Sewage Treatment Plant which reduces overall infrastructure costs.

The proposed development of Wailua will be a full native Hawaiian community versus a bedroom community for Kapa‘a or Lihu‘e. Residential design themes, parks, schools, neighborhood commercial services will create this distinct community feeling.

“The makai lands will be developed as a regional commercial & social service center.”



Wailua Makai Lands



Wailua – Future Mauka Residential Area



• Wailua •

The residences will be buffered from Kūhiō Highway, the Wailua River area, and the Ditch on the mauka portion of the property by Special District designations.

The proposed 651 residential lot sizes will be 10,000 sf which will be spacious but provide the densities required to create a sense of community and reduce infrastructure costs.

The Community Use area will include 12 acres for a school/park site and one-acre for neighborhood commercial uses such as convenient stores and restaurants. A new school will be required to serve the children of this new community.

Subject to verification of demand and economic viability, two acres of Kūpuna Housing providing 50 apartments will be located in the community use area. A day respite center should also be developed in conjunction with the elderly housing.

Overall per lot development costs in Wailua are approximately \$ 86,000 (*Table 6.1*). This cost includes the development of new wells and water storage tanks but not a new sewage treatment plant since there is existing capacity at the Wailua plant. Water costs could be further reduced if more water becomes available through the use of surface water treatment plants off-site or if the Department developed its own surface water treatment plant.

Road and intersection improvements constitute the other major development cost. Site preparation costs in Wailua are high because approximately \$9.75 million is required for fill to level a topographic depression.

“Wailua will be the second largest DHHL community on the island.”

RESIDENTIAL COMMUNITY

Residential

- (651) 10,000 sf lots
- 216 acres total
- \$ 86,000 per lot

Kūpuna Housing

- 50 unit Kūpuna Housing
- 2 acres total

Community Use

- 15 acres total
- Space for parks, school, and commercial, etc.

	Water	Sewage	Roads	Site Prep	Electricity	TOTAL
Major Factors	New tanks, wells, & transmission lines	Existing STP, transmission lines	Roads & intersect. upgrade	4,000 sf pad & fill	Transmission lines	
On-site	\$ 5.2 M	\$ 5.2	\$ 17.2 M	\$16.3 M	\$ 5.2 M	\$ 49 M
Off-site	\$ 7 M	--	\$ 250,000	--	--	\$ 7M
TOTAL	\$12.2 M	\$5.2 M	\$17.5 M	\$16.3 M	\$5.2 M	\$ 56 M

Costs are estimates for complete residential community. CU costs are included but will likely change depending on future use.

Table 6.1

Wailua Residential Infrastructure Costs



6.3.3 Subsistence Agriculture

A small lot agricultural community is planned south of the residential development (*Figure 6.2*). This designation takes advantage of the fertile soil in Wailua and locates lower density development on the narrower portion of the Wailua lands.

Most of the agricultural lands are located away from Kūhiō Highway reflecting the community’s desires to create opportunities for organic farming away from highway pollution.

Two-acre lots are planned to meet beneficiary desires for small scale agriculture lots. Also, smaller lot sizes means 35 agriculture awards can be made on 99 acres.

Each two-acre award will cost approximately \$ 180,000 for infrastructure (*Table 6.2*). This includes water storage for potable water, IWS for each lot, and road improvements for agricultural standards. Development costs can be reduced by eliminating some infrastructure improvements. This analysis is provided in *Appendix E*.

The ditch system should be maintained for the irrigation of the agriculture lots.

**SUBSISTENCE
AGRICULTURE**

- (35) 2-acre lots
- 99 acres total
- \$180,000 per lot



Wailua Agriculture Lands

	Water	Sewage	Roads	Site Prep	Electricity	TOTAL
Major Factors	New tank, well, & transmission lines	IWS	Road upgrade required	4,000 sf pad	Transmission lines	
On-site	\$ 1.1 M	\$ 360,000	\$ 3 M	\$ 350,000	\$ 1.1 M	\$ 5.9 M
Off-site	\$ 360,000	--	--	--	--	\$ 360,000
TOTAL	\$ 1.5 M	\$ 360,000	\$ 3 M	\$ 350,000	\$ 1.1 M	\$ 6.3 M

Table 6.2
Wailua Subsistence Agriculture Infrastructure Costs



6.3.4 Special District

There are three separate Special District areas in Wailua: the Mala‘e Heiau/Wailua River District, the Kūhiō Highway Buffer, and the Kālepa Ridge District (*Figure 6.2*).

The Special District designation will protect significant resources and buffer residential development from Kūhiō Highway.

Although each district has slightly different purposes, the first two are partially related to an alternative of the proposed Kapa‘a Bypass Road. As mentioned at the beginning of this chapter, there is a study underway to create a Kapa‘a bypass route that will impact the DHHL Wailua lands. The only alternative, presented by the Department of Transportation that will not completely bisect the mauka lands is the option to widen the existing Kūhiō Highway along most of the property frontage veering inland mauka of Mala‘e Heiau in order to create a second bridge across the Wailua River further upstream. The Special District designations along the highway and around the heiau include allotments for this proposed highway improvement. The impact on DHHL could be reduced by depressing the road and constructing pedestrian bridges over the highway at key intersections. The other alignments that completely bisect the Wailua lands are not supported by the KIP.

The Special District around the Mala‘e Heiau and Wailua River is intended to protect this culturally sensitive area. No parking lots or roads should be located within 150 feet of the heiau. Development and activity should be strictly monitored in the entire corridor but not prohibited. Appropriate uses could include an information and education center, native Hawaiian cultural center or a low-intensity Polynesian Cultural Center type development catering to tourists. Trails can be provided from the heiau and Wailua River to Kālepa Ridge. All development and activities should have limited impact on the view planes in the area.

This section of the Special District mauka of the heiau along the rim of the valley is intended to serve as a preservation buffer to protect views from the Wailua River corridor. Visual site lines from Poliahu heiau to Mala‘e are important and this

“The Special District designation will protect significant resources and buffer residential development from Kūhiō Highway.”

SPECIAL DISTRICTS

Wailua River / Mala‘e Heiau

- 62 acres total
- 1 mile long and 330-1200 feet wide
- Space for Kapa‘a Bypass

Kūhiō Highway Buffer

- 20 acres total
- 260-310 feet wide

Kālepa Ridge Ditch

- 10 acres total
- 100-225 feet wide



Mala‘e Heiau



• Wailua •

designation will protect them. Views along the rim are spectacular and the Special District will both protect this resource and make it available to the community.

Residences will be buffered from the highway by a 260-310 foot Special District corridor. If the proposed widening of Kūhiō Highway occurs, a 120-170 foot buffer will be retained. Further study may be required to ensure that noise and pollution mitigation measures are employed. No development is planned in this buffer but the area could be used for passive recreation.

The third Special District borders the ditch along the western border of the property. This existing ditch is a remnant from the sugar plantation era and provides irrigation water through a tunnel in Kālepa Ridge. Water flow is controlled by a weir next to a reservoir on the mauka side of the ridge. This district, ranging from 100-225 feet wide and 0.6 mile long, maintains the ditch as public resource. Community groups could be responsible for maintaining the ditch and could use it for lo‘i or other activities. Appropriate fencing and signage should be erected along this district to prevent accidental injuries since it abuts a densely populated residential neighborhood.

6.3.5 General Agriculture

Fifty-two acres abutting the Kaua‘i Community Correctional center have been designated General Agriculture.

No homesteads will be awarded in this area which is prone to flooding. Leases and permits in the General Agriculture area should be available for uses that are compatible with flood conditions such as lo‘i.

No infrastructure improvements are proposed.



Wailua Floodplain Area near County Jail

“Leases & permits in the General Agriculture area should be available for uses that are compatible with flood conditions such as lo‘i.”



Section 7.0

Kapa'a

7.1 EXISTING CONDITIONS

The DHHL properties in Kapa'a are located within the developed urban area of Kapa'a (*Figure 7.1*). Kapa'a is Kaua'i's largest urban area and the northern most densely populated area before Anahola and the North Shore.

DHHL owns two separate, non-contiguous areas in Kapa'a: a southern 1.87-acre parcel and a northern 15-acre parcel.

The southern area is under lease for school bus parking. Access to the property from Kūhiō Highway is provided by Akoa Road.

The northern area is near where Lehua Street forks from the Kūhiō Highway. It is currently used for mini-storage and parking. The Mō'ikeha Canal borders the northeast edge of the property. A mixed commercial and residential community is located to the south and east. The western edge of the parcel is bordered by a large park area that is used as a farmers market.

The State Land Use designation for the property is Urban.



Existing Uses at Kapa'a

EXISTING USES

- School bus parking (1.87 acres on southern parcel)
- Mini-storage & parking (6.5 acres on northern parcel)



Figure 7.1
Kapa'a



7.2 OPPORTUNITIES AND CONSTRAINTS

Location – The location of DHHL's properties near industrial and commercial activities make industrial or commercial uses more appropriate than residential uses. Neither property, however, has street frontage on Kūhiō Highway which is desirable for commercial development.

Flooding – Small portions of Kapa'a are prone to flooding. The Mō'ikeha Canal flows into a wetland area on the makai side of the highway just east of the DHHL northern parcel. Proximity to the wetlands and lack of rapid drainage make these parcels unsuitable for home sites unless fill is used. The area may not be appropriate for lo'i cultivation because of surrounding urban uses and inadequate water flow.

Potable Water – Like Wailua, the water system around Kapa'a is highly interconnected yet it lacks storage capacity to meet projected demand. Future development may require additional water storage facilities.

Sewage Treatment System – The Wailua Sewage Treatment Plant has additional capacity and provides wastewater treatment to Kapa'a. Due to the low elevations at the DHHL Kapa'a lands a pump may be required in order to connect into the existing sewer system. Low elevation makes IWS unfeasible.

7.3 LAND USE PLAN

The plan proposes to use the Kapa'a parcels for income generation by designating the developable areas as Industrial and the flood plain areas as General Agriculture (*Figure 7.2*).

Commercial uses would also generate income for the department but the Industrial designation is favored because there is a higher demand for industrial property. In addition, the Kapa'a properties do not front Kūhiō Highway or another main thoroughfare which is almost essential for a successful commercial development.

PLANNING CONSIDERATIONS

Opportunities

- Wastewater treatment available
- Near other industrial & commercial activities

Constraints

- Flooding & low elevations
- No frontage on Kūhiō Highway
- Neighboring industrial & commercial uses
- Water upgrades needed



Kapa'a

LAND USE PLAN

Industrial

- 16 acres

General Agriculture

- 1 acre in floodplain



• Kapa'a •

Residential uses are not proposed because even though it is a popular area among beneficiaries based on the survey, the surrounding land uses are not compatible with residential or agriculture awards. Also, only a relatively small number of homesteads can fit on the parcels.

Kūpuna housing was also considered for the Kapa'a parcels. This land use was not chosen for the same reason single family residences are not an optimal use. Furthermore, it makes sense to locate Kūpuna housing within a larger DHHL community to provide greater integration and support for elderly residents.

The Kapa'a industrial area is not a priority development area. Development of this area will depend largely on the market demand for the property.



Kapa'a Self Storage Area



I = 16 acres	GA = 1 acres
--------------	--------------

Figure 7.2
Kapa'a Land Use Plan



7.3.1 Industrial

The plan proposes to essentially continue using the Kapa‘a parcels as they are being used now; for rents and other forms of income generation.

However, the Industrial designation (versus General Agriculture) will allow the department to maximize the income generation potential of the property by instituting longer term leases. The current warehousing and parking uses on the property are for short-term leases. Tenants would be willing to pay higher rents for these properties because they could construct permanent buildings and invest in the property.

Infrastructure costs are difficult to estimate because the exact type of industrial uses has not been identified. Major costs would most likely include off-site and on-site water improvements, interior roadways, electrical improvements, and sewage lines. The cost of these improvements has been estimated at \$ 4.3 million but the cost will ultimately depend on the future industrial use. For example, fill may be required due to low elevations at the site.

7.3.2 General Agriculture

Just over 1 acre in the floodplain has been designated General Agriculture. This includes 0.3 acres of the smaller southern parcel and 1 acre of the larger northern parcel.

The General Agriculture designation should protect the floodplain areas, prohibit structures in the floodplain, and make the areas available for individuals or groups to lease for agricultural purposes.

However, the urban, industrial nature of the parcels may make the property inappropriate for lo‘i cultivation and other agricultural uses. Other DHHL tracts provide better opportunities for lo‘i.

“The Industrial designation will allow the department to maximize the income generation potential of the property by instituting longer term leases.”



Kapa‘a



Section 8.0

Anahola / Kamalomalo‘o

8.1 EXISTING CONDITIONS

The DHHL owns 4,228 acres in Anahola and Kamalomalo'o extending from the shoreline mauka to the Kealia Forest Reserve. The parcels are situated midway between Hanalei and Lihu'e and just north of Kapa'a (Figure 8.1). The area is predominantly rural but land immediately to the south of Kamalomalo'o is being developed into large luxury estates.

The land is made up of both flat and gently rolling regions with some rugged cliffs rising above the coastal plain. Its location on the wet side of the island brings 50 inches of rain per year to lowland areas while the upper valley receives 100 inches per year.

The majority of the land is designated Agricultural by the State Land Use system, except for small portions in Urban and Conservation.

Anahola is the largest Hawaiian homestead community on Kaua'i. However, most of the land remains undeveloped. A summary of existing leases is provided to the right.

EXISTING USES

- 359 residential leases (165 acres or 3 % of total area)
- 47 agricultural leases (241 acres or 5 % of total area)
- 20 acres to Project Faith
- 154 acres in short term leases for pasture & commercial uses
- Remainder undeveloped



Figure 8.1
Anahola/Kalomalo'o



8.2 OPPORTUNITIES & CONSTRAINTS

Established Community – There is a Hawaiian Community with a strong sense of identity.

Ahupua‘a – Anahola is the only DHHL property on Kaua‘i spanning from the mountains to the ocean.

Land & Topography – There is ample land on which buildings and home sites can be constructed.

Agriculture – The mauka lands moving up the valley present opportunities for cooperative farming. Historically the land was used by Lihu‘e plantation for sugar cultivation. While much of the land has irrigation ditches running through it, portions of the land can be irrigated by the heavy rainfall alone. Accordingly, catchment is an option for both potable water and irrigation water.

Potable Water – DHHL and the County Department of Water operate two wells and storage facilities in Anahola. Development is currently limited to the lower portion of the parcels, below the existing water storage facility elevation. Enough water is available for approximately 350 more houses in the makai area. More well and storage facilities are needed before development can expand mauka.

Wastewater – There is no wastewater treatment plant servicing the area. Houses are currently serviced by IWS. Future residential development will require a sewage treatment plant to best protect Anahola Bay and the entire natural environment in the area.

8.3 LAND USE PLAN

A Development Plan was prepared for Anahola/Kamalomalo‘o in 1987 which envisioned the area as a contemporary ahupua‘a. The plan provided a mixture of land uses, cultural, homestead, income-generating and public services.

No major changes to the overall ahupua‘a concept of the Development Plan are recommended in the KIP. However, specific land use alterations are recommended to reflect changes that have occurred in the last 15 years (*Figure 8.2*). The Plan increases the residential areas to reflect Department’s emphasis on residential awards.

PLANNING CONSIDERATIONS

Opportunities

- Established DHHL community
- Ahupua‘a intact-mountain & ocean resources available
- Areas of good agricultural land
- Catchment possibilities
- Good amount of land suitable for building

Constraints

- Water limitations
- No sewage system
- Large area can increase development costs
- Flood hazard in coastal & river areas



Anahola Mountains



Some agricultural areas are designated but overall, there is a homestead reduction from the 1987 plan. Only one area is designated Pastoral.

Environmentally sensitive areas that are not within the State Land Use Conservation District are designated Special District. These areas should be protected but appropriate commercial or agricultural activities may be permitted.

Land previously designated for agriculture or pastoral homesteads has been designated as General Agriculture to make it available to cooperative, beneficiary farming and/or development groups rather than being permanently given out as individual agriculture or pastoral homestead lots.

A mountain camp is proposed in addition to the Community Use areas proposed near the residential community.

Land designated as Conservation in the State Land Use designations is also designated Conservation in this plan.

8.3.1 Residential Development

Anahola will continue to be the largest residential homestead area on Kaua‘i and is a priority development area in the KIP.

The KIP proposes to increase residential development around the existing residential core, both mauka and makai of Kūhiō Highway (*Figure 8.2*). Approximately 359 residential homesteads already exist in this core area. 1,218 additional residential lots are proposed, approximately 3 times the number of lots currently in place. By increasing the acreage designated Residential, more lots can be awarded and at a lower per lot cost.

The proposed residential development and the complementary Commercial and Community Use areas will require substantial infrastructure improvements including new wells, water storage facilities, and a sewage treatment plant (*Table 8.1*).

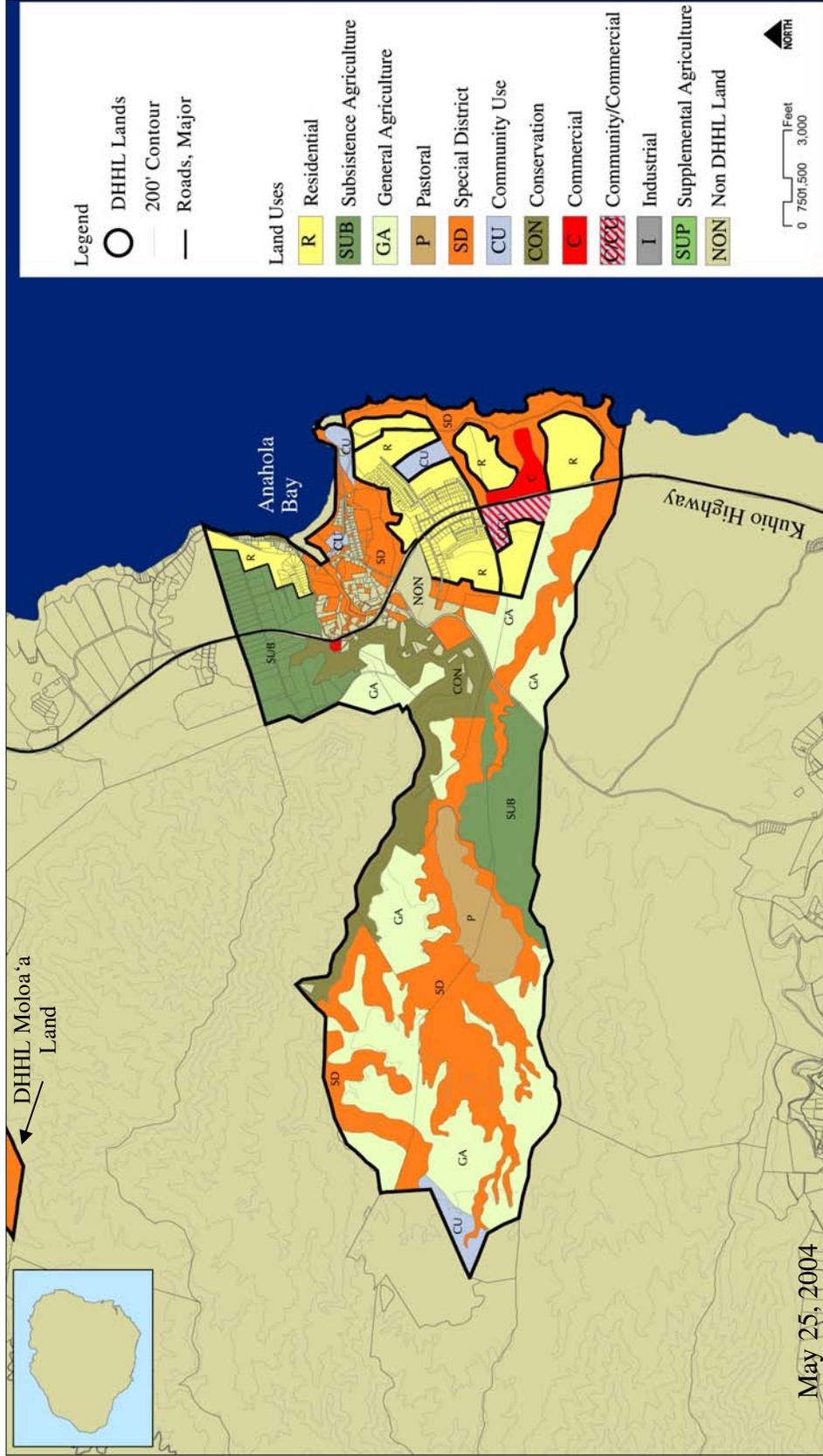
The existing wells could service up to 350 more houses but new wells will need to be developed for further development. A traditional wastewater treatment plant or innovative package plant is

LAND USE PLAN	
<i>Residential</i>	
•	1,218 new 10,000 sf lots on 400 acres
<i>Subsistence Agriculture</i>	
•	103 new 2-acre lots on 292 acres
<i>Pastoral</i>	
•	(14) 10-acre lots on 148 acres
<i>General Agriculture</i>	
•	1,018 acres
<i>Special District</i>	
•	1,419 acres
<i>Conservation</i>	
•	350 acres
<i>Community Use</i>	
•	127 acres
<i>Commercial</i>	
•	68 acres

ANAHOLA/KAMALOMALO‘O TOTAL INFRASTRUCTURE COSTS	
	Total Cost
On-site	\$ 91.3 M
Off-site	\$ 33.7 M
TOTAL	\$ 125 M



Kaua'i Island Plan
 DEPARTMENT OF HAWAIIAN HOME LANDS
 • Anahola / Kamalomalo'o •



R = 565 acres; 359 existing lots & 1,218 planned @ 10,000 sf
 SUB = 533 acres; 47 existing lots & 103 planned @ 2 acres
 GA = 1,018 acres;
 P = 148 acres; 14 lots @ 10 acres
 CU = 127 acres; 44 acres mauka & 83 acres makai
 SD = 1,419 acres
 CON = 350 acres
 C = 68 acres total

Figure 8.2
 Anahola/Kalomalo'o Land Use Plan

recommended rather than the continuation of the reliance on individual sewage disposal systems. Sewage treatment plants, when developed properly, have a minimal impact on the surrounding environment and moreover their effluent can be re-used to irrigate crops, gardens, and yards. Contamination of ground and surface water, on the other hand, is often attributed to poorly performing individual sewage disposal systems. The risks of contamination are of special concern in Anahola because of Anahola Bay and the use of near shore resources for subsistence gathering and other traditional practices.



Anahola – Existing Residential Development

8.3.2 Subsistence Agriculture & Pastoral

Two agriculture homestead areas and one pastoral area are designated in the Plan.

The two Subsistence Agriculture areas will create a total of (103) 2-acre homestead lots. The larger of the two areas is 267 acres and is located deeper in the Kamalomalo‘o valley portion of the property, just mauka of Kealia road. Access to this area will be a challenge except for the small portion of land adjacent to Kealia Road. High rainfall in this area can provide water for this area.

The second agriculture area is near the existing agriculture subdivision at the northern edge of DHHL’s Anahola property, spanning both sides of Kūhiō Highway. Infrastructure systems servicing the existing agriculture subdivision could be used to develop these remaining 2-acre infill lots.

“Anahola will continue to be the largest residential homestead area on Kaua‘i”

RESIDENTIAL

- (1,218) 10,000 sf lots
- 400 acres total
- \$ 83,000 per lot

	Water	Sewage	Roads	Site Prep	Electricity	TOTAL
Major Factors	New tanks, well, & transmission lines	STP necessary, transmission lines	Extend, fix cane haul	4,000 sf pad	Transmission lines	
On-site	\$ 10 M	\$10 M	\$ 33.8M	\$ 12.2 M	\$ 10.1 M	\$ 76 M
Off-site	\$ 9.9M	\$ 15 M	--	--	--	\$ 25 M
TOTAL	\$ 20 M	\$ 25 M	\$ 33.8 M	\$ 12.2 M	\$ 10.1 M	\$101 M

Costs are estimates for complete residential community. Community Use and Commercial costs are included but will likely change depending on future use.

Table 8.1

Anahola/Kalomalo‘o Residential Infrastructure Costs



The only new pastoral areas designated in the KIP are located in Anahola. The pastoral homesteading area is further mauka of the larger subsistence agriculture area which borders Kealia Road. Approximately 148 acres are set aside allowing for a total of (14) 10-acre homestead lots. The site is remote with difficult access making infrastructure costs very expensive.

The development costs are summarized in *Table 8.2*. In response to the beneficiary demand to live on the lots, the costs include wastewater treatment, paved roads built to rural standards, site preparation, and electricity. The total cost for both Subsistence Agriculture and Pastoral is \$ 15 Million. Infrastructure could be reduced to only gravel roads and catchment water to reduce overall infrastructure costs.

8.3.3 General Agriculture

Most areas that were previously designated Pastoral or Subsistence Agriculture in the 1987 Development Plan are now designated General Agriculture. Specifically 1,018 acres total will be in General Agriculture compared to approximately 75 acres in the 1987 plan.

The General Agriculture areas will be available for cooperatives or hui to develop, farm, or ranch. The group action concept, in which many hands make for light work, may be a quicker, more effective way to get beneficiaries on the land.

“The only new pastoral areas designated in the KIP are located in Anahola.”

AGRICULTURE & PASTORAL

Subsistence Agriculture

- (103) 2-acre lots
- 292 acres total
- \$103,000 per lot

Pastoral

- (14) 10-acre lots
- 148 acres total
- \$302,000 per lot

		Water	Sewage	Roads	Site Prep	Electricity	TOTAL
	Major Factors	Catchment	IWS	Hwy. & Kealia Rd access, upgrade cane haul rd	4,000 sf pad	Transmission lines	
SUB AG	On-site	--	\$ 1 M	\$ 6.2 M	\$ 1 M	\$ 2.3 M	\$ 10.5 M
	Off-site	--	--	--	--	--	0
	TOTAL	--	\$ 1 M	\$ 6.2 M	\$ 1 M	\$ 2.3 M	\$ 10.5 M
Pastoral	On-site	--	\$ 140,000	\$ 2.9 M	\$ 140,000	\$ 1.1 M	\$ 4.2M
	Off-site	--	--	--	--	--	0
	TOTAL	--	\$ 140,000	\$ 2.9 M	\$ 140,000	\$ 1.1 M	\$ 4.2M

Table 8.2
Anahola/Kamolomalo‘o Subsistence Agriculture and Pastoral Infrastructure Costs

The General Agriculture areas presented in the land use map below have great potential for agriculture or tropical forestry. The areas can be irrigated by rainfall alone; therefore the cost to develop crops would not be great. The hui could then harvest and sell crops to local restaurants, farmer’s markets, or roadside stands within their own Anahola community.

8.3.4 Special District

The large Special District areas indicate lands that need to be protected for cultural and environmental reasons or pose challenges to development. Portions of the special district areas could be used for low intensity activities such as farming, ranching, or other outdoor recreation. The Special District areas could be developed similarly to the General Agriculture areas discussed in above with hui or cooperative groups leading the initiative.

Most of the 1,419 acres of land designated Special District is located mauka of Kūhiō Highway. This land consists of deep gullies, and steep slopes. The Special District areas makai of the Highway are designated around the Anahola Stream and flood zone as well as the shoreline. Residents of Anahola have an inextricable link to the ocean and its resources, making it essential that the coastal region remain healthy and thriving. With this in mind, the Plan designates a coastal buffer in Special District to maintain beach access for recreation and subsistence activities and to serve as the makai node for the ahupua‘a. Other uses for this area may include a coastal trail.

8.3.5 Commercial & Community Use

Commercial and community use areas will complement the expanding residential community. The overall residential community cost outlined in *Table 8.1* includes the water cost for the neighborhood Community Use sites as well as the water and sewage costs for the 45 acre mauka Commercial / Community Use area. The development of these areas will largely rely on market forces, community initiative and entrepreneurship.

“The General Agriculture areas will be available for cooperatives or hui to develop, farm, or ranch. The group action concept, in which many hands make for light work, may be a quicker, more effective way to get beneficiaries on the land.”



*Coastline Near Special District Area
Bordering Federal Lighthouse*

“Special District Areas indicate lands that need to be protected for cultural or environmental reasons or pose challenges to development.”

The core commercial and community use area is approximately 88 acres spanning either side of Kūhiō Hwy. Beneficiaries have already indicated possible uses for these lands such as a cemetery, youth gymnasium, primary health care services, fire station, meeting facility, and kūpuna housing.

There is a community initiative to develop a mixed use commercial and community support area mauka of the highway on 45 acres. An area across the highway from this development is designated commercial to serve as a business incubator of new local businesses. Possible ventures include a farmer’s market, bed and breakfasts, and water sports concessions.

In addition to the central, core commercial and community use area, smaller pocket areas have been designated on the makai lands for community uses. For instance, an area known as Camp Faith near the mouth of the Anahola River could make an ideal youth camp or retreat facility. Two other small parcels totaling 31 acres have been set aside in the core residential area for either parks or schools.

At the end of the valley is an approximately 44 acre community use area set aside for a mauka camp. This camp site could have multiple functions such as a site for forestry education; a logistical base for tropical forestry operations not only on DHHL lands but on DLNR lands further mauka; a recreational camp; or an educational retreat area.

The mauka area would be connected to the makai and ocean portion of the ahupua‘a via a trail.

8.3.6 Conservation

The Conservation area along the Anahola Stream corridor is also designated Conservation by the State Land Use District Commission. No development is proposed in these areas.



Beach Park at Anahola Bay

“Commercial and Community uses will complement the expanding residential development.”

<p>COMMUNITY USE & COMMERCIAL</p> <p><i>Community Use</i></p> <ul style="list-style-type: none">• 127 acres <p><i>Commercial</i></p> <ul style="list-style-type: none">• 68 acres
--

Section 9.0

Moloa'a

9.1 EXISTING CONDITIONS

There are 316 acres of undeveloped DHHL land in Moloa‘a: 210 acres located mauka of Kūhiō Highway and 106 acres makai (*Figure 9.1*). The parcels are located inland and upland with beautiful views of the ocean and Moloa‘a Bay. The mauka parcel borders the Moloa‘a Forest Reserve.

Moloa‘a is located on the windward, wetter side of the island. Rainfall averages 80 inches per year on the makai lands and 120 inches per year on the mauka land. The land consists of flat plateaus cut by river valleys and gulches with elevations ranging from 200-600 feet above sea level.

Moloa‘a is an agricultural community located north of Anahola before Kilauea. Although the area has not experienced major development, its beautiful views and rolling hills are attractive for exclusive estate type development proliferating in Kilauea to the North and Kealia to the South.

The property is designated Agricultural on the State Land Use map.

There are no homesteads on the property and the land is used for grazing.



Moloa‘a: Most Mauka point looking across the land

EXISTING USES

- Permit for pasture (316 acres)

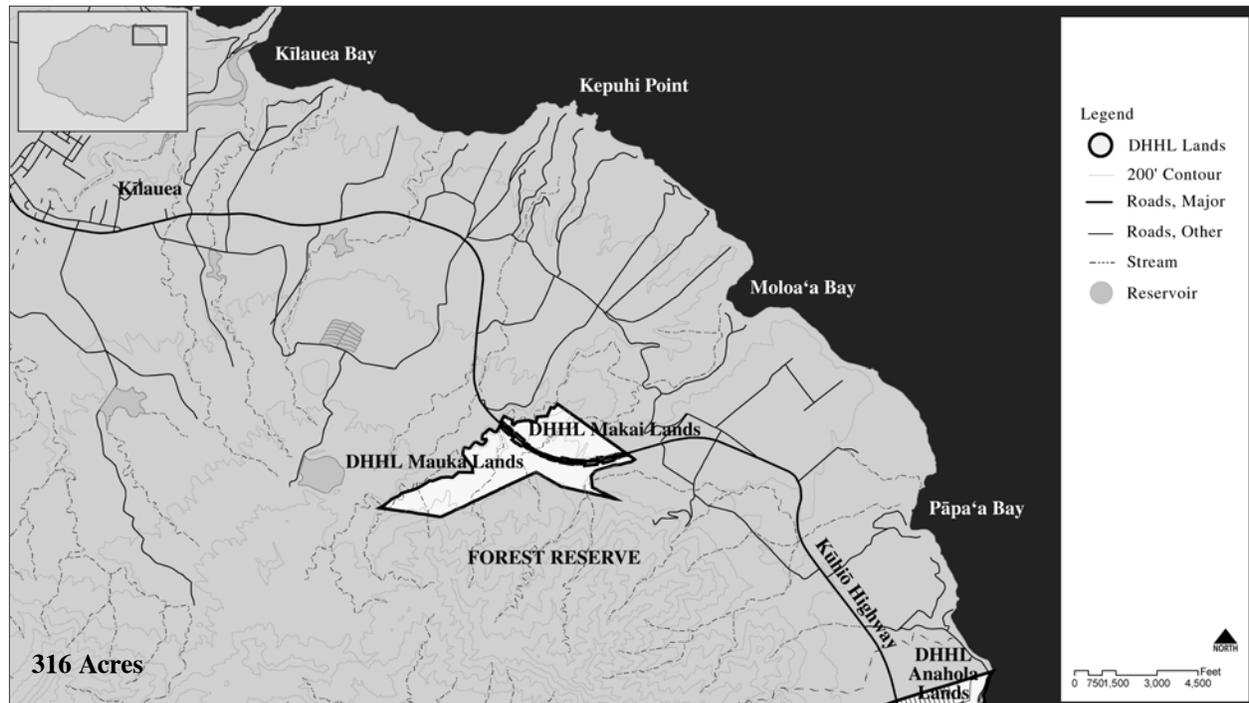


Figure 9.1
Moloa‘a



9.2 OPPORTUNITIES AND CONSTRAINTS

Location – Moloa‘a is located in a beautiful rural area far from major development, where the natural environment remains undisturbed. Despite its remoteness, the property is easily accessible from Kūhiō Highway which bisects the property.

Topography – The plateau areas create some development opportunities for house sites. Overall, however, the rolling hills make it difficult to develop the property.

Soils – The soils are not the most productive agricultural land and can be unfavorable to building due to the slope, water table, stream overflow and shrink swell.

Potable Water – County domestic water service is not currently available, but a test well is being drilled just above the mauka boundary. There is sufficient rainfall for potable water to be provided through a rainfall catchment system.

Sewage Treatment System – There is no sewage treatment system.

9.3 LAND USE PLAN

Moloa‘a will be developed as a small-lot agricultural community (*Figure 9.2*). This is in keeping with the surrounding agricultural uses and input from participants at DHHL hosted community meetings.

A strip of land along a runoff gulch that flows to the Moloa‘a Stream is designated Special District for flexibility of options and flood protection. This stream corridor might be usable as a community garden or lo‘i network.

The most difficult to develop areas are designated General Agriculture.

Moloa‘a is not recommended as a priority development for DHHL lands on Kaua‘i.

9.3.1 Subsistence Agriculture

Subsistence Agriculture is the primary proposed land use in Moloa‘a; 47 3-acre agricultural lots are planned.

PLANNING CONSIDERATIONS

Opportunities

- Located on highway
- Beautiful landscape and views
- Adequate rainfall for catchment system
- Some plateau areas

Constraints

- Poor agricultural land
- Difficult to develop areas
- No sewage system
- Rolling hills

LAND USE PLAN

Subsistence Agriculture

- (47) 3-acre lots on 200 acres
- \$177,000 cost per lot

Special District

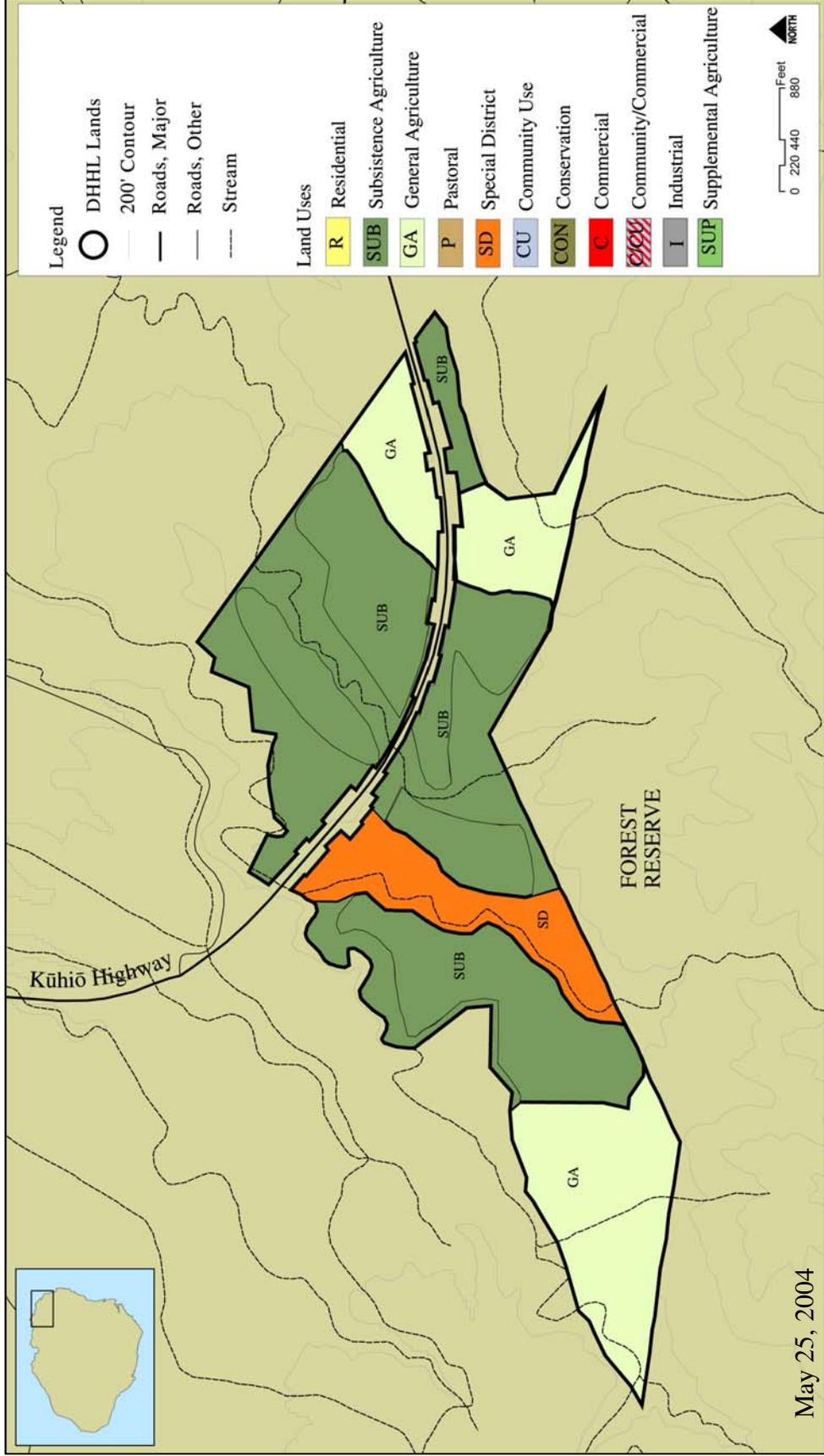
- 30 acres along stream

General Agriculture

- 86 acres of difficult to develop land



Kaua'i Island Plan
 DEPARTMENT OF HAWAIIAN HOME LANDS
 •Molokā'i•



SD = 30 acres

SUB = 200 acres; 47 lots @ 3 acres
 GA = 86 acres

Figure 9.2
Molokā'i Land Use Plan

• *Moloa‘a* •

Three-acre lots are proposed in Moloa‘a. These lots are small enough so beneficiaries will still qualify for certain types of loans. They are also large enough for a house lot and some agricultural activity. Portions of each lot are likely to be unsuitable for building and farming due to the hilly topography.

The land use plan below illustrates the flatter, plateau areas in Moloa‘a. The agriculture lots should be subdivided to ensure each homestead includes a flat area for a house lot.

Development costs are minimized by following agricultural standards, and the usage of catchment water and individual waste water disposal system. The estimated development costs total \$ 8.3 million (*Table 9.1*). These costs include infrastructure for houses and could be reduced by only providing gravel roads. An analysis of this alternative is found in *Appendix E*.

9.3.2 Special District

Approximately 30 acres around and along the stream are designated Special District. Wet conditions, intermittent stream flow, and the steep gully, make this area unsuitable for building. The special district designation would allow community groups to come together for taro cultivation.

9.3.3 General Agriculture

Two areas mauka of the highway and one makai are designated General Agriculture. The topography makes these areas too challenging to develop.

“Moloa‘a will be developed as a small lot agricultural community.”



Moloa‘a: Makai- looking Mauka



Moloa‘a: Most Mauka point looking across the land

	Water	Sewage	Roads	Site Prep	Electricity	TOTAL
Major Factors	Catchment	IWS	Improve 4WD road	4,000 sf pad	Transmission lines	
On-site	--	\$ 460,000	\$ 4.4 M	\$ 470,000	\$ 3 M	\$ 8.3 M
Off-site	--	--	--	--	--	--
TOTAL	--	\$ 460,000	\$ 4.4 M	\$ 470,000	\$ 3 M	\$ 8.3 M

Table 9.1
Moloa‘a Subsistence Agriculture Infrastructure Costs



Section 10.0

Development Priorities & Phasing

The KIP provides development priorities and phasing suggestions consistent with the DHHL General Plan. The overall priority of the different land uses is summarized in the table on the right.

Residential uses are the clear development priority. The KIP exceeds the DHHL General Plan goal of 40 residential lots per year or 840 lots over 20 years. The KIP assumes that the planned Kekaha residential lots will be completed and designates three priority residential areas: Wailua, Hanapēpē, and Anahola/Kamalomalalo‘o.

Agriculture and **Pastoral** lots are lower priorities than Residential. These awards are important but they are more costly and serve fewer beneficiaries than Residential.

Land can be designated as **General Agriculture** immediately but some areas may not be leased out immediately due to low demand for land for farming and ranching.

Special District areas should be set-aside now, but the development of these areas will be driven by the market and community interest.

Two types of **Community Use** areas are distinguished in the plan: neighborhood and regional. Neighborhood uses such as parks and schools should be developed with residential areas. Regional Community Uses, however, will require community input and initiative and should be implemented when there is community interest.

Conservation lands are a high priority to reflect the importance of protecting Hawaii’s natural environment.

Commercial and **Industrial** should be developed based upon anticipated market demand and upon availability of infrastructure.

10.1 PRIORITY AREAS

Three priority residential communities were identified. The top two priorities, Wailua and Hanapēpē are undeveloped former sugarcane areas. The third priority, Anahola/Kamalomalalo‘o, is already an established residential community.

These priorities were determined by an assessment of beneficiary preferences, the location of the parcels, the physical conditions of the land, and development costs. These priorities assume that the

Land Use	Priority
Residential (Homestead)	High, Medium & Low
Agriculture (Homestead)	Low
Pastoral (Homestead)	Low
General Agriculture	Market Driven
Special District	Community & Market Driven
Community Use	High & Community Driven
Conservation	High
Commercial	Market Driven
Industrial	Market Driven

Phasing

High -	1-6 years
Medium -	7-10 years
Low -	10 + years
Market Driven -	Depends on market
Community Driven -	Depends on community initiative

Priority definitions



residential development at Kekaha for 49 new residential lots, now awaiting approval by the County of Kaua‘i, continues as planned.

At full build-out, the 2,351 residential lots provided in these three areas exceeds the goals of the DHHL General Plan.

The priorities include not only the residential homesteads in these areas but also the community use areas that will provide the amenities to make these healthy communities.

Each priority area includes a suggested phasing plan. Preliminary lotting schemes are also included for the top two priorities: Wailua and Hanapēpē. The lotting schemes are very preliminary since there are no detailed topographic maps for these areas.

RESIDENTIAL PRIORITY AREAS	
	Lots
Wailua	651
Hanapēpē	482
Anahola/ Kamalomalō‘o	1,218
TOTAL	2,351

10.1.1 Priority 1: Wailua

The residential community in Wailua is the first priority of the KIP. This community includes not only 651 homesteads but also the 15 acre community use mauka of the highway.

Wailua was selected as the first priority for several reasons. The area was ranked high by beneficiaries in the survey conducted at the beginning of the planning process. Comments at the working group and community meetings reinforced the popularity of the Wailua area. It is not surprising that beneficiaries prefer this area since it is beautiful and located in close proximity to jobs in Kapa‘a and Līhu‘e and amenities such as Lydgate Beach Park. The relatively flat topography and reasonable infrastructure costs also make it practical to develop a large residential community in this area.

Two major phases of the residential area are recommended (*Figure 10.1*). The southern phase composed of 231 house lots on 76 acres is suggested as the first phase of development in Wailua. The residential lots will build-out from the defined mauka town center, community use area. This southern area is phased first because it includes the community amenities and is located closer to the major intersection of the Makai Regional Center.

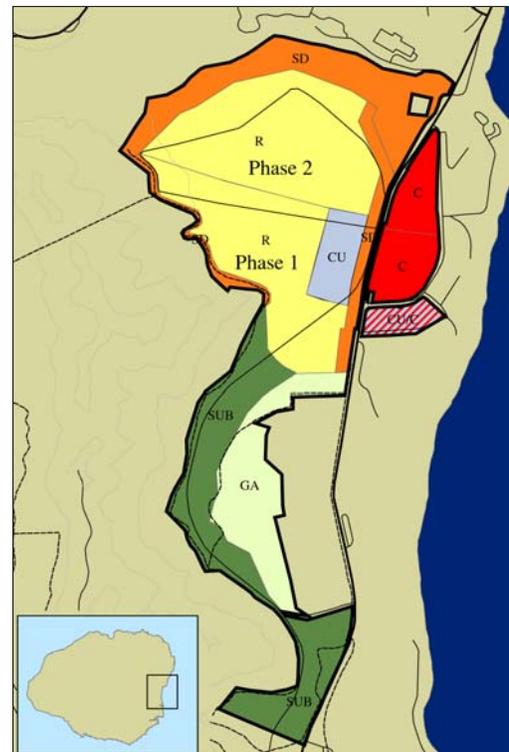


Figure 10.1
Wailua Residential Phasing



The second phase includes 420 residential homesteads on the northern portion of the parcel. Phase 2 is considered a medium priority.

Infrastructure costs are summarized in *Table 10.1*. Both phases require off-site water wells and storage facilities and on-site roads and water and sewage transmission lines. Phase 1 will also require intersection improvements and fill to level a topographic depression. The cost of fill may be up to \$9.75 million..

The cost estimates for off-site water improvements are based on drilling a new well and building new water storage facilities. It may be possible to utilize water from Grove Farm’s surface water treatment plant which could be substantially cheaper.

The preliminary lotting scheme illustrates a proposed layout of the community (*Figure 10.2*). This scheme is extremely preliminary because there are no detailed topographic maps for this area.

10.1.2 Priority 2: Hanapēpē

The second priority area is Hanapēpē, composed of 482 residential homesteads and 15 acres of Community Use for parks, a school, and other amenities.

Hanapēpē was selected as the second priority largely because the gently sloping topography and existing sewage treatment plant in the area reduces

WAILUA PHASING

Phase 1 - High

- 231 house lots
- 15 acres Community Use

Phase 2 - Medium

- 420 house lots

HANAPĒPĒ PHASING

Phase 1- High

- 40 house lots

Phase 2 - Medium

- 208 house lots

Phase 3 - Low

- 234 house lots
- 15 acres Community

Phase		Water	Sewage	Roads	Electricity	Site Prep	Total	Per lot
Major Factors		New Tanks, wells, & transmission lines	Existing STP & Transmission lines	Roads & Intersection Improvements	Transmission lines	4,000 sf pad & fill		
1*	On-site	\$ 1.7 M	\$ 1.7 M	\$ 5.6 M	\$ 1.7 M	\$ 12.1 M	\$26.6M	\$ 114,000
	Off-site	\$ 3.5M	--	\$ 250,000	--	--		
2	On-site	\$ 3.5 M	\$ 3.5 M	\$ 11.6 M	\$ 3.5 M	\$ 4.2 M	\$ 29.8 M	\$ 71,000
	Off-site	\$ 3.5 M	--	--	--	--		
Total		\$ 12.2 M	\$ 5.2 M	\$ 17.5 M	\$ 5.2 M	\$ 16.3 M	\$ 56 M	\$ 86,000

* Includes 15 acre Community Use water needs.

Table 10.1

Wailua Residential Phases Infrastructure Costs



Kaua'i Island Plan
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• *Development Priorities and Phasing* •

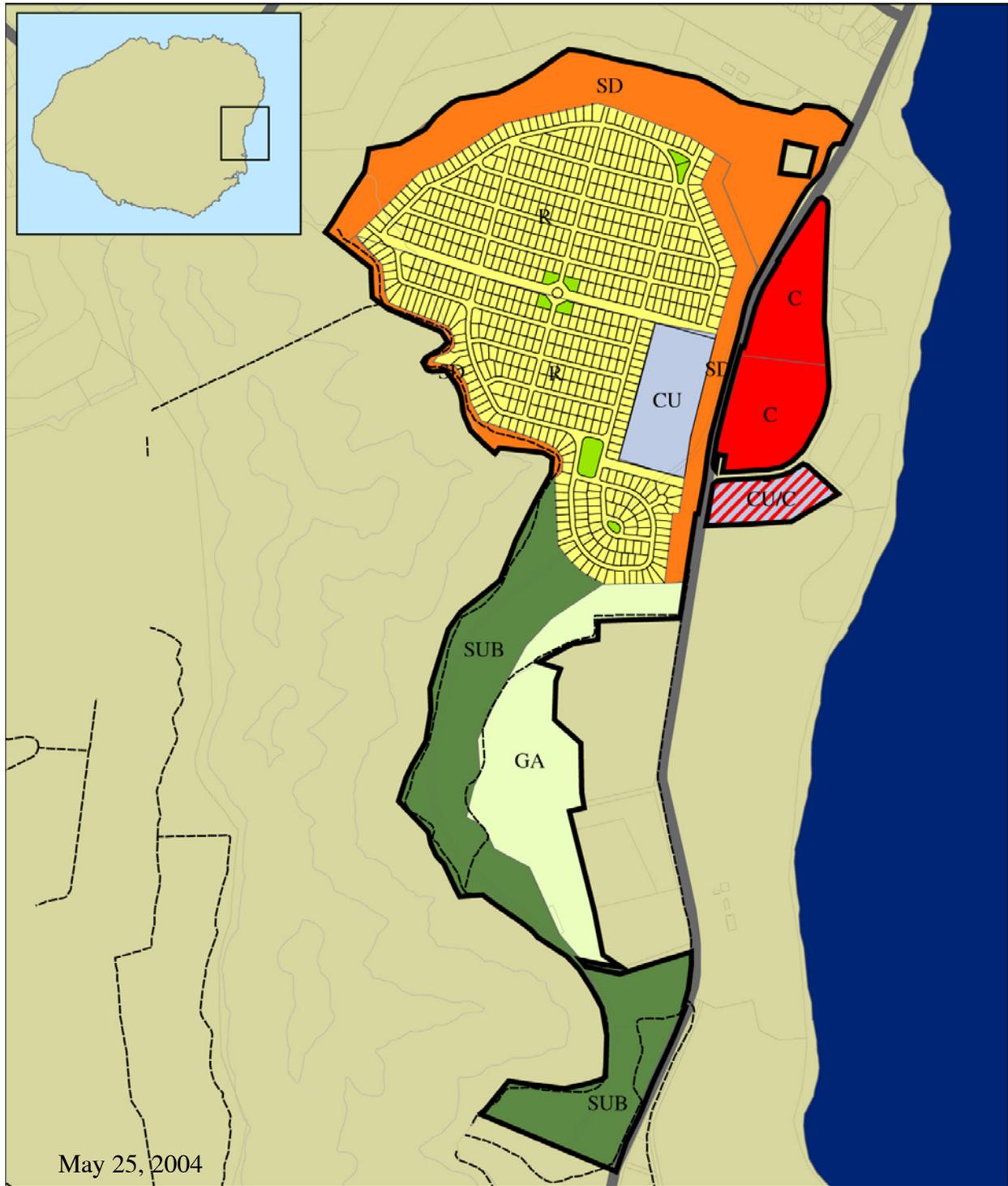


Figure 10.2
Wailua Preliminary Lotting Scheme (651 lots)



development and infrastructure costs. Also, Hanapēpē is a desirable residential location because it is near employment centers in PMRF and Po‘ipū.

Three phases of development are shown in *Figure 10.3*. The first phase of development entails construction of the first 40 houses west of the Hanapēpē Heights neighborhood to take advantage of existing water capacity in the area. This phase is a high priority.

The second phase, located east of the Kulamanu Gulch, includes 208 lots and is a medium priority.

Phase 3 is located west of the gulch and is composed of 234 residential homesteads and 15 acres of community use for neighborhood services, parks, and a school. Since, access to Phase 1 and 2 will be provided via Moi Road and no Community Use areas are designated, it is important that Phase 3 is finished in a timely manner even though it is ranked a low priority.

Infrastructure costs are summarized in *Table 10.2*. Phase 1 can be completed without major off-site infrastructure costs. However, Phases 2 and 3 will require off-site water improvements. A drainage detention basin at a cost estimated at \$ 500,000 should be constructed in Phase 2. Also, while there is adequate sewage treatment capacity for the proposed residential development, this assumes no capacity will be required for commercial development or non-DHHL development, which is unlikely. Therefore, depending on the timing, a

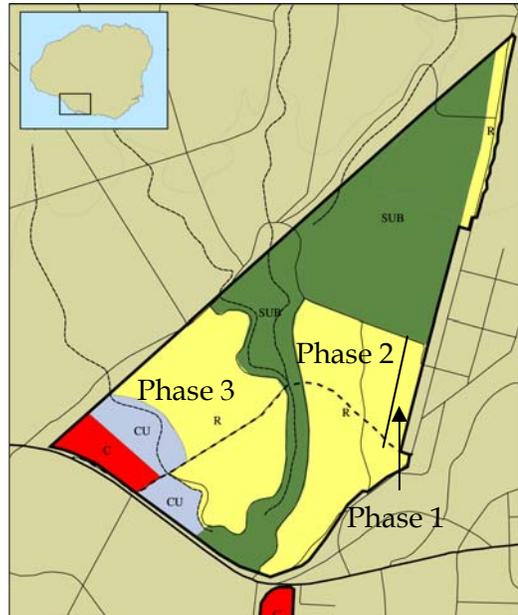


Figure 10.3
Hanapēpē Residential Phasing

Phase		Water	Sewage	Roads	Electricity	Site Prep	Total	Per lot
		40 lots. New well & transmission lines	Use existing STP. Transmission lines	Hwy & Moi Rd access. fix cane haul Rd.	Transmission lines	4000 sf pad & drainage		
1	On-site	\$ 315,000	\$ 315,000	\$ 1M	\$ 315,000	\$ 400,000	\$2.5 M	\$ 62,000
	Off-site	\$ 104,000	--	--	--	--		
2	On-site	\$ 1.5 M	\$ 1.5 M	\$ 5.1 M	\$ 1.5 M	\$ 2.1 M	\$ 14.5M	\$ 70,000
	Off-site	\$ 2.3 M	\$ 0 M	\$ 250,000	--	\$500,000		
3*	On-site	\$ 1.8 M	\$ 1.8 M	\$6.2 M	\$ 1.8 M	\$ 2.3 M	\$17 M	\$ 73,000
	Off-site	\$ 3 M	--	--	--	--		
Total		\$ 9 M	\$ 3.6 M	\$ 12.6 M	\$ 3.6 M	\$ 5.3M	\$ 34 M	\$ 71,000

* Includes 15 acre Community Use water needs.

Table 10.2
Hanapēpē Residential Phases Infrastructure Costs



Kaua'i Island Plan
DEPARTMENT OF HAWAIIAN HOME LANDS

• Development Priorities and Phasing •

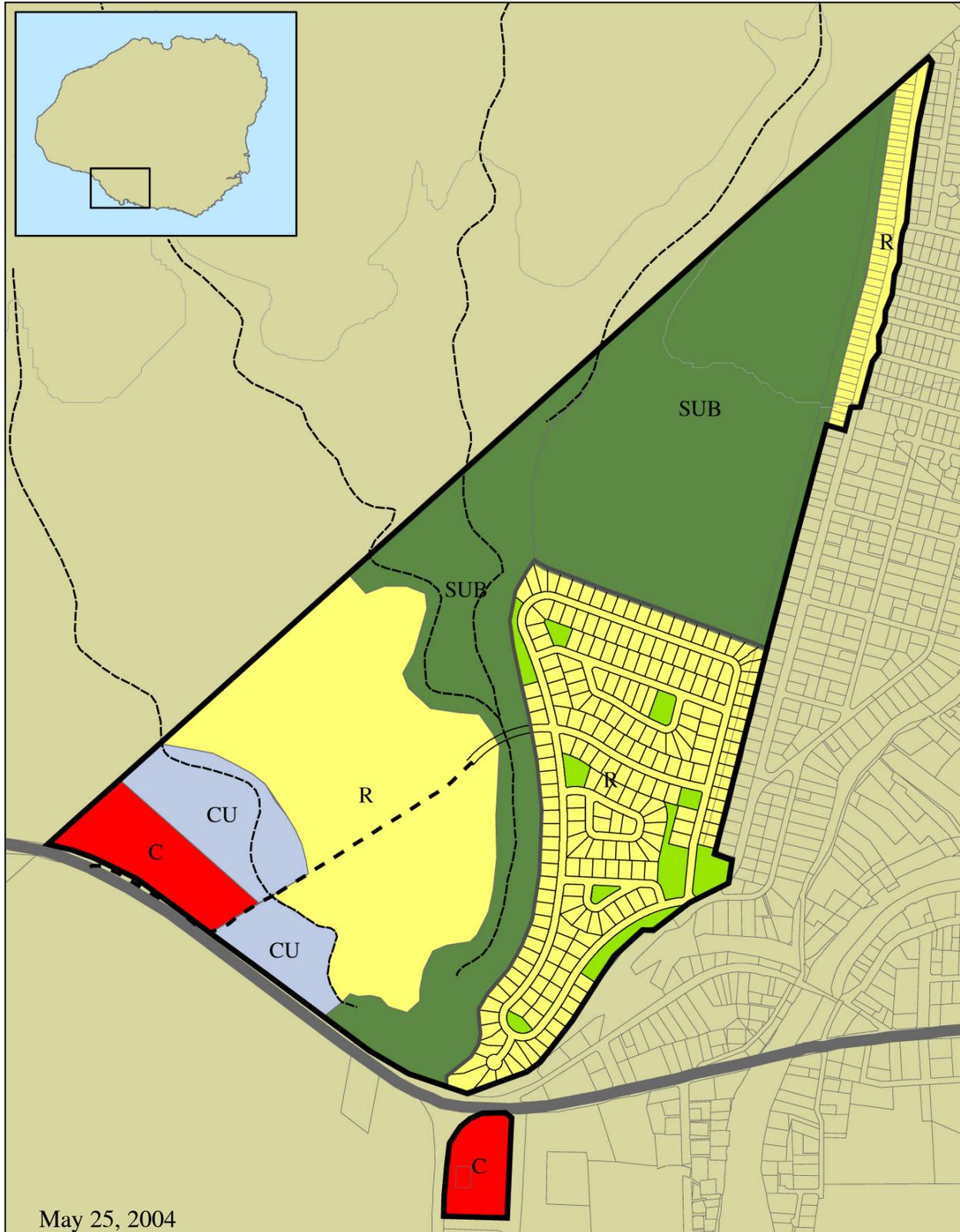


Figure 10.4
Hanapēpē Phase 1 & 2 Preliminary Lotting Scheme (248 lots)



new sewage treatment plant or expansion of the County system’s capacity may be required for Phase 3.

The preliminary lotting scheme provides a conceptual layout of the first and second phase of residential development (*Figure 10.4*). As with Wailua, this lotting scheme is very preliminary since there are no detailed topographic maps for the area.

10.1.3 Priority 3: Anahola/Kamalomalo‘o

Anahola/Kamalomalo‘o, the third priority area will add 1,218 Residential homesteads and 54 acres of Community Use. Although there is a high beneficiary demand for this area, Anahola/Kamalomalo‘o is ranked a lower priority than Wailua and Hanapēpē mainly because, unlike Hanapēpē and Wailua, major new development will require a new sewage treatment plant.

The residential development has been divided into six phases (*Figure 10.5*).

The first phase includes 350 new residential lots and a Community Use makai of the highway. This area is prioritized because there are larger tracts of undeveloped land that can be served by the existing wells. A sewage treatment plant should be constructed in this phase. It could be sized for this phase only or have capacity for future phases.

Phase 2 will continue the residential development towards the ocean. This phase is composed of 100 lots. Phase 2 and all subsequent phases will require new water facilities.

Phase 3 is located south of the first two phases and includes 158 residential lots.

Phase 4 is the southern most residential development in Anahola. It is composed of 261 lots.

Phase 5, located mauka of the highway includes 349 lots and 50 acres for community and commercial usage.

The northern undeveloped residential area (41 acres above Hundley Road) is ranked sixth because the relatively small size and steep slopes make this area more challenging and expensive to develop.

ANAHOLA/ KAMALOMALO‘O PHASING

Phase 1 - High

- 350 lots & 26 acres
Community Use

Phase 2 - Medium

- 100 lots

Phase 3 - Medium

- 158 lots

Phase 4 - Medium

- 261 lots

Phase 5 - Medium

- 349 lots & 50 acres
Community
Use/Commercial

Phase 6 - Low

- Lots on 41 acres



Kaua‘i Island Plan
DEPARTMENT OF HAWAIIAN HOME LANDS

• *Development Priorities and Phasing* •

Residential development in Anahola/Kamalomalo‘o will require major infrastructure improvements. A sewage treatment plant should be constructed to serve all phases of development and existing residential units that already have dry sewer lines installed. Once the sewage treatment plant is constructed, the 350 homesteads in Phase 1 could be built to take advantage of existing water capacity in the area. Any additional development would require a new well and storage facility.

Infrastructure costs are summarized in *Table 10.3*. The per lot costs for Phase 1 is \$67,000 which reflects the usage of existing water capacity. Up-front costs would be higher if a large sewage treatment plant was constructed during this phase to service subsequent phases.

The Phase 2 costs are also \$67,000 per lot but costs increase in the other phases to \$100,000 per lot. Cost figures for Phase 6 have not been determined.

The total cost, including off-site improvements is \$ 101 million.

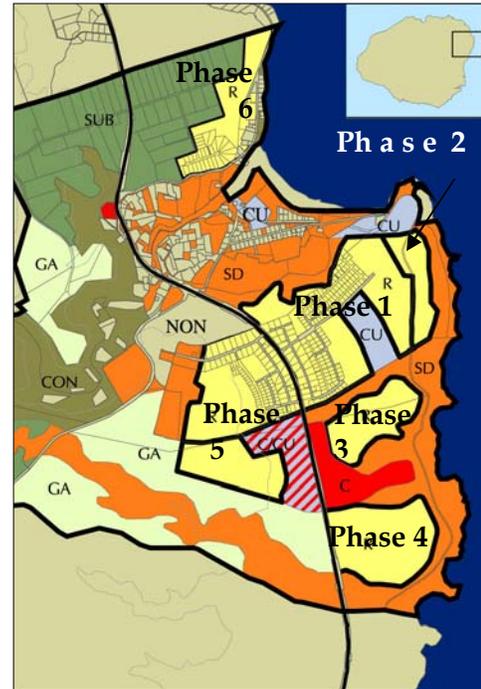


Figure 10.5
Anahola / Kamalomalo‘o Residential Phasing

Phase	Water	Sewage	Roads	Electricity	Site Prep	Total	Per lot	
	New Tanks, wells, & transmission	STP necessary	Extension & upgrades needed	Transmission lines	4,000 sf pad			
1*	On-site	\$ 2.5 M	\$ 2.5 M	\$ 8.5 M	\$ 2.5 M	\$ 3.5 M	\$ 24 M	\$ 67,000
	Off-site	\$ 1.8 M	\$ 2.8 M	--	--	--		
2	On-site	\$ 660,000	\$ 660,000	\$ 2.2 M	\$ 660,000	\$ 1 M	\$ 6.7 M	\$ 67,000
	Off-site	\$ 760,000	\$ 800,000	--	--	--		
3	On-site	\$ 1.6 M	\$ 1.6 M	\$ 5.2 M	\$ 1.6 M	\$ 1.6 M	\$ 14 M	\$ 88,000
	Off-site	\$ 1.2 M	\$ 1.3 M	--	--	--		
4	On-site	\$ 2.3 M	\$ 2.3 M	\$ 7.8 M	\$ 2.3 M	\$ 2.6 M	\$ 22 M	\$ 82,000
	Off-site	\$ 2 M	\$ 2.1 M	\$ 0 M	--	--		
5	On-site	\$ 3 M	\$ 3 M	\$ 10.1 M	\$ 3 M	\$ 3.5 M	\$ 35 M	\$ 100,000
	Off-site	\$ 4.1 M	\$ 8.2 M	\$ 0 M	--	--		
	Total	\$ 20 M	\$ 25 M	\$ 33.8 M	\$ 10 M	\$ 12 M	\$ 101 M	\$ 83,000

* Includes 26 acre Community Use water cost.

** Includes water costs for Commercial & Community Use, as well as STP cost for Commercial.

Table 10.3
Anahola / Kamalomalo‘o Residential Phases Infrastructure Costs



Section 11.0
Conclusion

• *Conclusion* •

The KIP provides a roadmap for managing DHHL’s 20,565 acres of diverse land on Kaua‘i to address strategic goals over the next 20 years.

The plan designates appropriate land uses which ensure DHHL land will be developed to its highest potential to meet the needs of native Hawaiian beneficiaries.

Proposed homestead land uses are summarized in *Table 11.1*.

11.1 ISLAND PLAN GOALS AND OBJECTIVES

The KIP report fulfills the DHHL’s island plan requirements. The KIP identifies:

- Land Designations for all 20,565 acres of DHHL land;
- Priority areas for new Residential homestead development;
- Appropriate areas for Community Use;
- Areas for more Agriculture and Pastoral leases; and
- Limited but adequate areas for income-generating Commercial and Industrial uses.

The plan was prepared using a comprehensive planning process that incorporated substantial beneficiary and community participation.

11.2 RESIDENTIAL PRIORITY

The emphasis in the KIP is residential homestead awards. The priority development areas are all residential developments. Furthermore, residential land uses are planned on all of DHHL’s Kaua‘i properties except Kapa‘a and Moloa‘a. Residential areas in Wailua, Hanapēpē, and Anahola/Kamalomalo‘o are designated as priority development areas. These three areas will provide 2,351 additional residential homesteads on both the west and east side of the island.

11.3 AGRICULTURE AND PASTORAL

The high cost of planned agriculture and pastoral lots may make development of these areas unrealistic.



Waimea Bus Tour (January 2004)



Wailua Bus Tour (January 2004)



Anahola Community Use Area



Kaua'i Island Plan
DEPARTMENT OF HAWAIIAN HOME LANDS

• Conclusion •

	Residential			Agriculture			Pastoral			Total	
	Lots	Cost/ Lot (\$)	Total Acres	Lots	Cost/ Lot (\$)	Total Acres	Lots	Cost/ Lot (\$)	Total Acres	Home- steads	Cost (\$)
Waimea	141	121,000	202	50	87,000	214	--	--	475	191	21,500,000
Kekaha	49	82,000	20	--	--	--	--	--	--	49	4,000,000
Hanapēpē	482	71,000	158	49	190,000	158	--	--	--	531	43,500,000
Wailua	651	86,000	216	35	180,000	99	--	--	--	686	62,300,000
Kapa'a	--	--	--	--	--	--	--	--	--	--	--
Anahola	1,218	83,000	400	103	103,000	292	14	302,000	148	1,335	115,900,000
Moloa'a	--	--	--	47	177,000	200	--	--	--	47	8,300,000
Total	2,541	--	996	284	--	963	14	--	623	2,839	
Total Cost	212,400,000			38,900,000			4,200,000			255,500,000	

Table 11.1
Summary of Proposed Homestead Land Uses and Costs



• *Conclusion* •

For example, the per lot agriculture homestead cost in Hanapēpē, Wailua and Moloa‘a exceeds \$ 175,000. However, agriculture costs in Waimea and Anahola are around \$ 100,000 per lot or less.

The development costs could be reduced by providing only potable water and gravel roads to homestead areas. This analysis is summarized in *Table 11.2*.

However, while this may make development more feasible it will not meet the beneficiary desire to be able to reside on their agriculture and pastoral homestead awards.

Infrastructure costs throughout the plan are conservative and are provided more to represent the order of magnitude costs. However, as the terrain and topography become better understood, the overall costs may change. It may be discovered that more lots can be created in the agricultural and pastoral areas thus reducing the cost per lot.

11.4 POINTS FOR FUTURE PLANNING STUDIES

Several points emerged during the planning process that should be incorporated into future planning studies and DHHL policies. They are described briefly below:

- Native Hawaiian beneficiaries want opportunities to collectively care for DHHL land. A group focus is more effective for large projects and responsibilities;
- Design guidelines and implementation tools need to be developed for the proposed developments. This will ensure that the envisioned healthy communities are created. Without these design guidelines, the goals and vision of the KIP may not be realized;
- Beneficiaries are eager for entrepreneurial opportunities. Adequate space in future development plans should be provided for entrepreneurial activities; and
- Community services and amenities are important for maintaining good community life. The community use areas designated in the plan are critical to the health of the proposed residential areas.

	KIP Cost Per Lot	Water & Roads Only Cost Per Lot
Wailua Agriculture	\$180,000	\$106,000
Hanapēpē Agriculture	\$190,000	\$114,000
Anahola Agriculture	\$103,000	\$ 45,000
Anahola Pastoral	\$302,000	\$154,000
Waimea Agriculture	\$ 87,000	\$ 41,000
Moloa`a Agriculture	\$177,000	\$ 80,000

KIP= potable water, roads, individual waste systems, site preparation, electricity

Table 11.2
Agriculture & Pastoral Infrastructure Cost Analysis

Section 12.0
References

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12.2 GIS DATA

DATA SOURCE: Hawai'i Statewide GIS Program, Office of Planning
<http://www.state.hi.us/dbedt/gis/download.htm>

GIS LAYER NAME	SOURCE	DATE
Agricultural Lands of Importance to the State of Hawai'i (ALISH)	State Department of Agriculture 1:24,000 hand drafted blue-line maps. Prepared with the assistance of the Soil Conservation Service, U.S. Department of Agriculture, and the College of Tropical Agriculture, University of Hawai'i.	1977
Coastline	USGS Digital Line Graphs	1983
Elevation Ranges	USGS Digital Elevation Models	2000
Flood Data	Federal Emergency Management Agency (FEMA); Scanned and compiled by FEMA from 1:24,000 Digital Flood Insurance Rate Maps (DFIRMs).	1996
Hawai'i Public Schools	USGS Geographic Names Information System (GNIS) DAGS Planning C&C of Honolulu	1992, 2000 & 2001
Hydrography Lines	USGS Digital Line Graphs	1983
Hydrography Polygons	USGS Digital Line Graphs	1983
LANDSAT images	Pacific Disaster Center	--
Land Study Bureau (LSB) Detailed Land Classification	Land Study Bureau's Detailed Land Classification Aerial Photos were hand drafted onto paper overlays of the U.S.G.S., 1:24,000 topographic and orthophoto quads. Ratings were developed for both over-all productivity, and for specific crops. This layer represents only the over-all productivity ratings.	1967
Major Roads	USGS Digital Line Graphs	1983
Minor Roads	USGS Digital Line Graphs	1983
National Wetlands Inventory Polygons	U.S. Department of the Interior, Fish and Wildlife Service	1978
Overwash from Hurricane Iniki	Aerial Photographs taken shortly after Hurricane Iniki	--
Parks	GDSI parcel data	1998
Perennial Stream Arcs	USGS Digital Line Graphs, & CWRM Hawai'i Stream Assessment database	1983 & 1993



• *References* •

**Continued- DATA SOURCE: Hawai'i Statewide GIS Program, Office of Planning
<http://www.state.hi.us/dbedt/gis/download.htm>**

GIS LAYER NAME	SOURCE	DATE
Rainfall	Giambelluca, T.W., Nullet, M.A., and Schroeder, T.A. 1986. Hawai'i Rainfall Atlas, Report R76, Hawai'i Division of Water and Land Development, Department of Land and Natural Resources, Honolulu. vi + 267	1990
Special Management Areas	County Planning Department blue-line maps; compiled and drafted on USGS quadrangle base	1998.
State Land Use Districts, 2000	State Land Use Commission 1:24,000 Mylar Maps	2000
Threatened and Endangered Plants	Division of Forestry and Wildlife	1992
200 Ft. Contours	USGS Digital Elevation Models	2000

DATA SOURCE: Department of Hawaiian Homelands, Office Of Planning

GIS LAYER NAME	SOURCE	DATE
Awarded Land	DHHL Kaua'i Lessee Database	July 2003
DHHL Land Classification	DHHL Kaua'i Lessee Database	July 2003

DATA SOURCE: County of Kaua'i, Department of Planning

GIS LAYER NAME	SOURCE	DATE
Community Plan	Kaua'i General Plan	2000
DHHL Parcels- Zoning	Kaua'i Planning Dept. designations	2003



