ISLAND OF MOLOKA‘I

HO‘OLEHUA • KALAMA‘ULA • KALAUPAPA • KAPA‘AKEA • ‘UALAPU‘E

REGIONAL PLAN

OCTOBER 2007

DEPARTMENT OF HAWAIIAN HOME LANDS

DEPARTMENT OF HAWAIIAN HOME LANDS
1099 ALAKEA STREET, 20th floor
HONOLULU, HAWAI'I 96813

www.hawaii.gov/dhhl

CHAIRMAN'S OFFICE
Telephone: (808) 586-3801
Facsimile: (808) 586-3899

MAILING ADDRESS
P.O. Box 1879
Honolulu, Hawai'i 96805

Introduction

The Department of Hawaiian Home Lands' (DHHL) mission is to manage effectively the Hawaiian Home Lands Trust and to develop and deliver lands to native Hawaiians. DHHL works in partnership with other government agencies, private sector entrepreneurs, and non-profit organizations to carry out this mission. This work includes collaborative visioning, long-range planning, resource allocation, and project-specific joint ventures. DHHL believes that these partnerships benefit not only its native Hawaiian beneficiaries but the larger community as well.

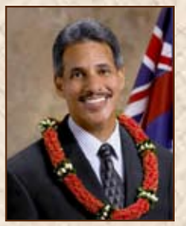
This report has been prepared to facilitate the work of such partnerships as DHHL and others to develop lands on the island of Moloka'i. Specifically, this report is intended to:

- *Help identify opportunities for partnerships with DHHL in the development of its Moloka'i lands;*
- *Provide information essential to the planning of projects, services, and entrepreneurial ventures;*
- *Identify key issues, opportunities, and constraints affecting regional development and area improvements;*
- *Assist in the efficient allocation of resources by DHHL and its partners; and*
- *Identify priority projects that are essential to moving development and community improvement projects forward.*

DHHL understands regional development is a dynamic process with constantly changing opportunities and emerging issues. With that in mind, this document will be regularly updated as development projects progress and priorities change.

State, Federal, & County Leaders

Linda Lingle
Governor

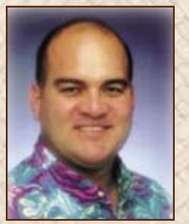


James "Duke" Aiona
Lt. Governor

Dan K. Inouye
U.S. Senator

Daniel K. Akaka
U.S. Senator

Mazie Hirono
Congressional District 2



Micah A. Kane
DHHL Commissioner Chairman

Milton Pa
DHHL Moloka'i Commissioner

Colette Machado
OHA Board Member, Moloka'i, Lana'i

J. Kalani English
State Senatorial District 6

Mele Carroll
State House of Representatives District 13

Charmaine Tavares
Maui County Mayor

Danny Mateo
Maui County Council Moloka'i

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

Political Boundaries

UNITED STATES CONGRESS DISTRICT 2

MAUI COUNTY COUNCIL DISTRICT (MOLOKA'I)

STATE HOUSE OF REPRESENTATIVES DISTRICT 13

STATE SENATE DISTRICT 6

Community Leaders

GOVERNMENT

Russell Tsuji, Land Division Administrator – State of Hawai‘i Department of Land & Natural Resources
Keith Chun, State Land Planning & Development Manager –
State of Hawai‘i Department of Land & Natural Resources
Laura Thielen, Chair – State of Hawai‘i Department of Land & Natural Resources
Mary J. Cochran, Complex Superintendent, Moloka‘i – State of Hawai‘i Department of Education
Linda Chinn, Administrator, Land Mangement Division – Department of Hawaiian Homelands
Milton Pa – Hawaiian Homes Commissioner (Moloka‘i)
Clyde Namu‘o, Administrator – Office of Hawaiian Affairs
Haunani Apoliona, Chairperson Aide: Scotty Bowman – Office of Hawaiian Affairs, Board of Trustees
Colette Machado, Moloka‘i Trustee - Office of Hawaiian Affairs, Board of Trustees
Thomas Phillips, Police Chief – Maui County Police Department
Carl Kaupalolo, Fire Chief – Maui County Department of Fire Control
Kalbert Young, Director – Maui County Department of Finance
Vanessa Medeiros, Director – Maui County Department of Housing & Human Concerns
Tamara Horcajo, Director – Maui County Department of Parks & Recreation
Jeff Hunt, Director – Maui County Department of Planning
Milton Arakawa, Director – Maui County Department of Public Works & Environmental Mangement
Jeffrey Eng, Director – Maui County Department of Water Supply
Clyde Sakamoto – Chancellor, Maui Community College/Moloka‘i University Center
Linda Puleloa – Principal, Moloka‘i High & Intermediate School

COMMUNITY

DeGray Vanderbilt – Chair, Moloka‘i Planning Commission
Steven Chaikin, Vice Chair, Molokai‘ Planning Commission
Lynn Decoite - Moloka‘i Planning Commission
Joseph Kalipi - Moloka‘i Planning Commission
Lance Dunbar – Moloka‘i Planning Commission
James Feeter – Moloka‘i Planning Commission
Sherman Napoleon, Jr. – Moloka‘i Planning Commission
Michelle Pescaia - Moloka‘i Planning Commission
Linda Kauhane - Moloka‘i Planning Commission
John Kaimikaua
Lawrence Aki
Harold Edwards
Rikki Cooke
Ed Misaki
Zhantell Dudoit
Cheryl Corbiell
Vannie Ainoa
Ella Alcon
George Benda
Pat Benda
Kekama Helm
Dewitt Jones
Barbara Kalipi
Halona Kaopuiki
David Lunney
Kuulei Perez
John Sabas
Matt Yamashita
Dan Bennett
Judy Egusa
Pearl Hodgins
Doris M. Miller
Tim Leong
Beverly Pauole-Moore
John Urauchi
Kip Dunbar
Irenio Vergara
Patrick Kansana

CULTURAL

Deldrine “Kau‘i” Kapuhi – Maui County Cultural Resources Commission (Moloka‘i)
Davianna McGregor

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Key Community Stakeholders

STAKEHOLDERS

William Akutagawa - Na Pu'u Wai Native Health Care
Hanapi Alapa'i - Culture Expert
Edward Ayau - Culture Expert
Alex Bishaw - Water
Ochie Bush - Ho'olehua Homestead Assn.
Judy Caparida - Kupuna
Mele Carroll – State House of Representatives
Stacey Crivello - Enterprise Community
Lyn DeCoit - Homesteader
Jimmy Duvauchelle - Kahu
J. Kalani English - State Senate
Barbara Haliniak - Moloka'i Chamber of Commerce
Vanda Hanakahi - Culture Expert
Adolph Helm - Homesteader/ MIS Board Member
Zachary Helm - Homesteader Assn.
Karen Holt - Moloka'i Community Service Council
Charlie Ice - CWRM
Ka'eo Kawa'a - Hawaiian Immersion School
Julie Ka'upu - Rep. - Community Health (Adults)
Moke Kim - Educator
Ron Kimball - KSBE
Sandy Kunimoto - DOAG
Wade Lee - Community Health
Keoni Lindo - Molokai Properties, LTD.
Shari Lyn - Ka Hale Pōmaika'i
Colette Machado - Office of Hawaiian Affairs
George Maioho - DHHL
Ruth Manu - Kupuna
Danny A. Mateo - County Council Member
Ed Misaki - The Nature Conservancy
Meyer Family; Roxanne French - Water
Viola Mundrick - Farmers Alliance & Livestock
Alan Murakami - Native Hawaiian Legal Corp.
Dean A. Nakano - DLNR
Peter Nichols - Moloka'i Properties
Daniel Ornellas - DLNR
Donna Paoa - Education
George Pescaia - Moloka'i Properties, LTD.
Ernest Puaoi, Sr. - Ho'olehua Homestead Agriculture Assn.
Kammy Purdy - SCHHA Homestead Assn. Council
Kawela Reese - Community Health (Teens)
Walter Ritte - Homesteader
Jeff Eng - Dept of Water Supply
Glenn Teves - CES

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Partnering Benefits & Examples

Shared Costs & Multiple Financing Options

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

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

Photo by Dennis Flanagan, USDA-ARS

DHHL brings to these partnerships:

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

Kūlana ʻŌiwi

- The consortium partnership includes: DHHL, The Queen Emma Foundation, Kamehameha Schools, Queen Liliʻuokalani Children's Center, ALU LIKE, Inc., and the Office of Hawaiian Affairs.
- The center is designed to house the offices and programs run by these Hawaiian organizations.
- The concept of a "one-stop service center" for the Hawaiian people will facilitate the coordinated delivery of government and private services more efficiently.
- At Kūlana ʻŌiwi, each agency provides different services, such as child welfare, social and educational services for youth, health care services, and vocational training services geared to strengthen Hawaiian families, values and culture.

Partnering Benefits & Examples

DHHL has participated in a number of successful partnerships. A few of these are highlighted here.

Public Facilities Partnership

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

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

Kamehameha Preschools on DHHL Property

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

Infrastructure Partnership

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

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

Residential Partnership

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

- Self-help housing partnerships:
  - Construction of 41 homes in La‘i‘ōpua with Kōkua Housing Corporation
  - Construction of 45 homes in Kapolei with Menehune Housing Corporation and Honolulu Habitat for Humanity
- Co-location of various Hawaiian agencies and services providers on O‘ahu, Moloka‘i, and Maui
- Location of Kamehameha Preschools on DHHL property on several islands
- Partnership to create a community resource center with Chaminade University, Association of Hawaiian Civic Clubs, and other Hawaiian organizations

History and Cultural Aspects of Moloka‘i

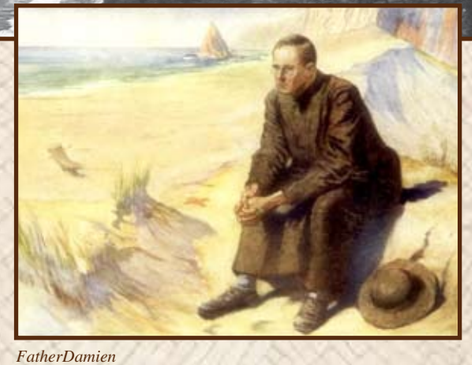
Like all islands within the Hawaiian Archipelago, the Island of Moloka‘i grew out of a series of basaltic eruptions from a “hot spot,” amassing two large shield volcanoes from the sea floor. The island’s formative volcanoes emerged from beneath the sea approximately 1.9 and 1.5 million years ago. Geologically the island’s most notable feature, its cliffs along the north shore are the tallest in the world, rising in excess of 1,200 meters from the sea. A separate small shield vent during the island’s volcanic rejuvenation stage created the Kalaupapa peninsula along its north shore.

The Island of Moloka‘i has long been known as a place where time’s effects are a little less evident, where the pace is just a little slower, and where an abundance of aloha can be found in the faces of the residents of the “Friendly Isle.” The fifth-largest island in the archipelago, Moloka‘i seems to have avoided the ravages of modernization and foreign influences creating an untouched atmosphere highly reminiscent of the “Old Hawai‘i” of decades ago, and is also traditionally held as the birthplace of hula, the quintessence of Hawaiian culture.

Predominately an aqua- and agricultural-based economy, many of the industries continue in the same vein as established by the early kanaka maoli (original people, or Native Hawaiians). This is evidenced by the dozens of ancient fishponds which dapple the southern coast of the island, some still in use. Ancient sacred sites are plentiful on the island, including Kaule o nānāhoa where Hawaiians believed in its powers of fertility.

Although Moloka‘i’s history provides deep insight into the lifestyle and way of the Hawaiian culture, its modern history also teaches us of the sometimes vicious nature of mankind, as well as the grace and kindness of others.

Photo of Kalaupapa Peninsula



FatherDamien

History and Cultural Aspects of Moloka‘i

Prior to western contact, as well as immediately after, Moloka‘i remained relatively free from the ravages of European foreign disease due to its continued legacy of relative isolation. The island’s isolation prompted Kamehameha V to banish those with leprosy, otherwise known as Hansen’s disease, to the remote Kalaupapa peninsula in an effort to contain the spread of the disease. The banishment of individuals to Kalaupapa split family units apart, with many never having the opportunity to see their kin again.

The mission of Blessed Father Damien to the sick of Kalaupapa is renown, such that Pope John Paul II beatified him in 2005. Father Damien was not the first missionary to go to the remote settlement. However, he was the first to stay. In addition to building over 300 homes, tending the sick, and burying the dead, Damien brought hope to the residents of the Kalaupapa settlement. Father Damien eventually contracted the same disease and succumbed to the same disease inflicting those to whom he missioned.

In 1921, the United States Congress passed the Hawaiian Homes Commission Act, which set aside 43,000 acres of land for those with at least 50 percent Hawaiian blood. This Act was the direct result of efforts made by Prince Kuhio Kalaniana‘ole who had been concerned with the rapid decline of the Hawaiian population throughout the islands. One year later, the first Hawaiian homesteader moved into the Kalaniana‘ole settlement on Moloka‘i. By 1924, the flourishing fields of the settlement had been dubbed the “Moloka‘i Miracle.” The Hawaiian Homestead Project represented the climax in a long controversy of the fate of the Hawaiians. It served as irrefutable evidence that the Hawaiian’s link to the land is both indivisible and essential.

Typical fishpond on Moloka‘i

Kaule o nānāhoa

Hawaiian Home Lands

1. **‘Ualapu‘e** – ‘Ualapu‘e comprises 401.409 acres, which is located on the eastern end of the island. The parcel is mauka of Kamehameha V Highway and is highlighted by its sloped terrain from its mountainous regions interspersed by deep ravines of Kahananui Gulch, Ki‘inohu Gulch, and Mo‘omuko Gulch. The elevation ranges from 25 to 1,000 feet above sea level.

2. **Kapa‘akea, Kamiloloa, and Makakupa‘ia** – The 5,182.899 acres of Kapa‘akea, Kamiloloa, and Makakupa‘ia are located along the southern portion of Moloka‘i, approximately one mile east of Kaunakakai town. Most of these DHHL lands are situated mauka of Kamehameha V Highway, highlighted by variable slope and major drainage channels that help form the wetlands near the shoreline. The elevation ranges from sea level to its mauka boundary at 2,000 feet above sea level.

3. **Kalama‘ula** – Kalama‘ula consists of 5,117.831 acres, located west of Kaunakakai. This parcel is mauka of Kamehameha V Highway, gently sloping upland to Pu‘u Luahine (372 ft. elevation) transected with the declining slopes of Kuhuaawi Gulch and Kaluaohe Gulch. The elevation ranges from sea level to 1,800 feet above sea level. Kalama‘ula consists of multiple uses with a growing residential community in the lowlands and coastal region, wetlands to the southwestern corridor, pastoral use, Kapuāiwa Grove, Church Row, and Kulana ‘Ōiwi.

4. **Kalaupapa and Pālā‘au (Apana 3)** – The DHHL lands of Kalaupapa and Pālā‘au (Apana 3) are 1,247.00 acres located on the northern plateau and peninsula of the island. The area of Pālā‘au is mostly ironwood forest under license to the State Parks Division until 2011. Kalaupapa peninsula is separated from the rest of the island by a 1,600-foot cliff.

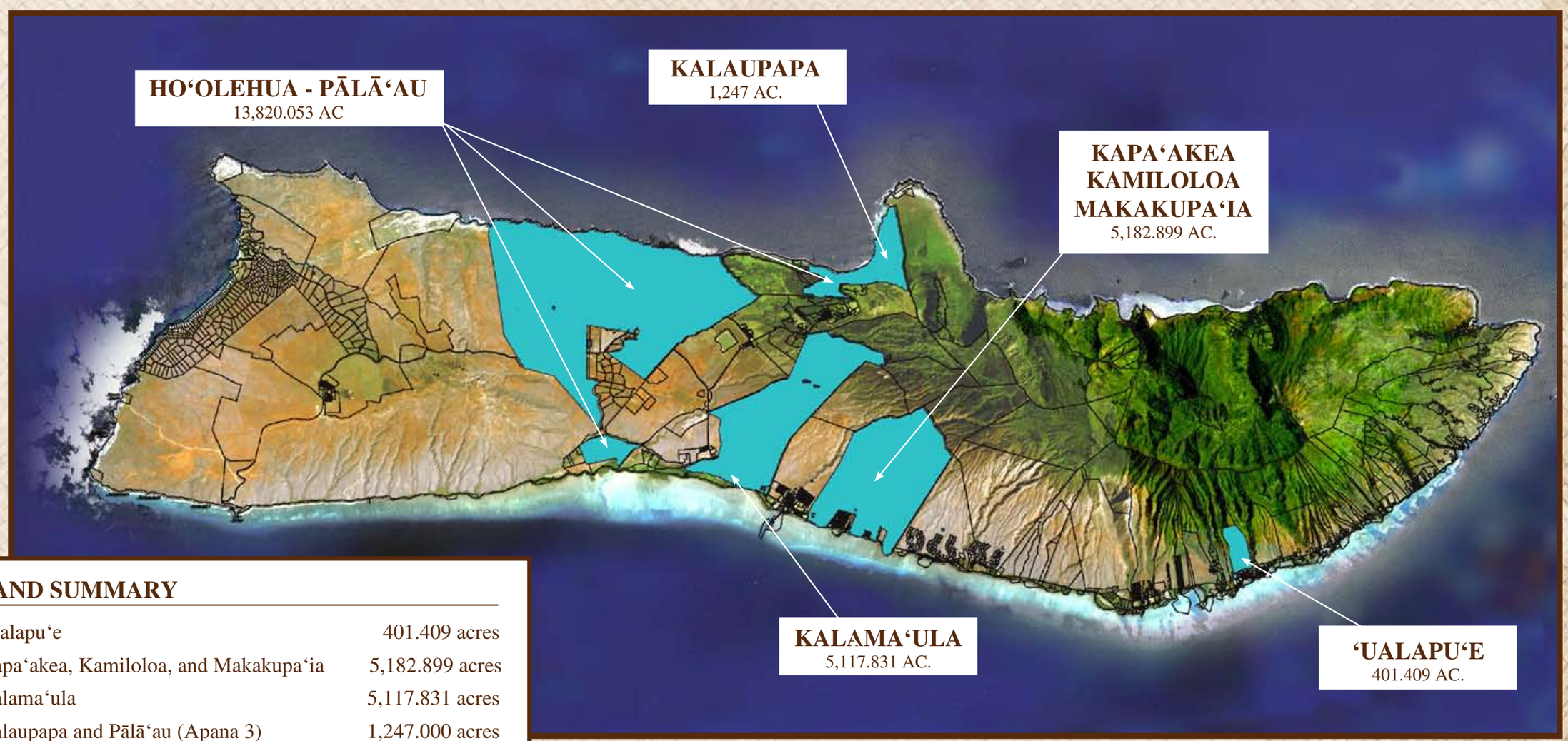
5. **Ho‘olehua-Pālā‘au (Apana 1 & 2)** – Ho‘olehua-Pālā‘au (Apana 1 & 2) comprises 13,820.053 acres within the northern central plateau and southern coastal corridor of Moloka‘i, respectively. Fronted by Maunaloa Highway, Ho‘olehua is a rural agricultural community, also known as the first Hawaiian homestead established following the passage of the Hawaiian Homes Commission Act in 1921. The lands of Ho‘olehua are varies in topography, ranging from level plains to rolling hills and sea cliffs at the northern coastal boundary. Kāluape‘elua and Mane‘opapa Gulches bisect the eastern section of Ho‘olehua, and Anahaki Gulch bisects the northwest.

LAND SUMMARY

‘Ualapu‘e	401.409 acres
Kapa‘akea, Kamiloloa, and Makakupa‘ia	5,182.899 acres
Kalama‘ula	5,117.831 acres
Kalaupapa and Pālā‘au (Apana 3)	1,247.00 acres
Ho‘olehua-Pālā‘au (Apana 1 & 2)	13,820.053 acres
Total DHHL land:	**25,769.192 acres**

As of June 30, 2006, DHHL currently has 841 active leases on Moloka‘i (391 residential, 422 agricultural and 27 pastoral).

Hawaiian Home Lands - Area Map



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Demographics

- Based on the 2000 US Census 2000, the resident population of Molokaʻi is 7,404 (7,257 without Kalaupapa) persons, making up 2,420 (2,305 without Kalaupapa) households. The population breakdown per region of Molokaʻi is: 4,688 persons in East Molokaʻi, 2,569 persons in West Molokaʻi, and 147 persons in Kalawao County (Kalaupapa). Population in specific census-designated places (CDP) were 2,726 people in Kaunakakai, 1,936 people in Kualapuʻu; and 230 people in Maunaloa.

- The gender breakdown is 3,168 males and 3,786 females. The race demographics on Molokaʻi include 4,599 Native Hawaiian or other Pacific Islander (62%), 3,101 Asian (42%), 2,299 Caucasian/White (31%), 702 Hispanic (9.5%), 189 Native American (2.5%), 75 African/Black (1%), and 169 of other descent (2%) (Note: The sum of the reported percentages is greater than 100 due to multiple racial identifications by an individual of mixed race).

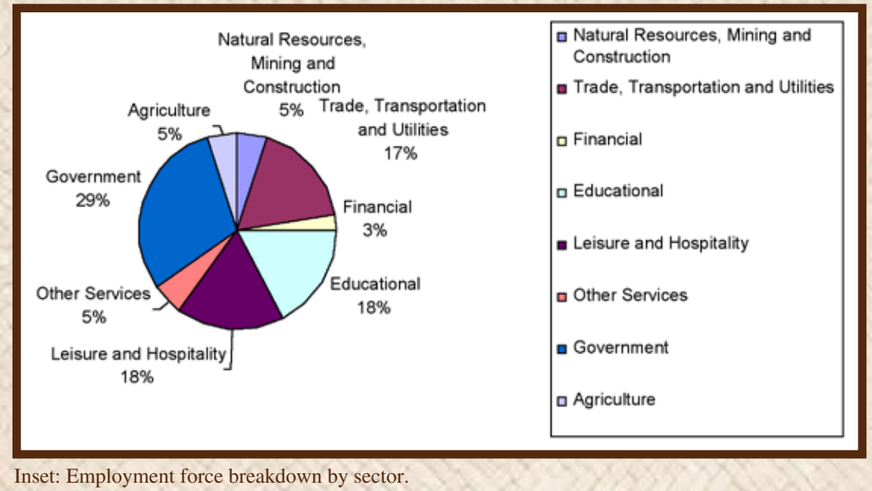
- According to the Molokaʻi Community Plan (2000), limited economic opportunity is the most significant problem facing the community, due to the limited availability of jobs. In the 1970s and 80s, the economy of Molokaʻi was devastated when two pineapple plantations closed down. Then, Kaluakoʻi Resort, Molokaʻi's only major resort, closed in 2000. With the state's unemployment rate at 4.5%, Molokaʻi's rate was 11.2% and the island's Hawaiian homesteaders' rate was 12.9%. Molokaʻi continues to have the highest jobless rate within the state historically.

- Median income on Molokaʻi is comparatively lower than the State's. The State's median income is $49,820, Molokaʻi's median income is $33,398, and Hawaiian homesteaders' median income is $37,714. In addition, the percentage of population below the poverty level statewide is 10.7%, whereas on Molokaʻi it is 16.0% and for Hawaiian homesteaders it is 15.7%. (DBEDT & DHHL Sources)

- Other socio-economic statistics for Molokaʻi include: 24.4% of the island's resident population receive food stamps; 32.5% receive Medicaid; and 20% of the population 18 years and older do not have a high school diploma.

- The majority of residents living in Molokaʻi tend to live and work in the Kaunakakai area. According to the 2000 US Census, in Kaunakakai, the median age of residents was 36, the median income for a household was $34,492, and the median income for a family was $39,348.

- The primary industry on Molokaʻi today is government, yet the island's economy still depends on tourism and agriculture as economic sources. More economic opportunities will be necessary to stem the high unemployment and the out-migration of Molokaʻi's youth. Nevertheless, the island's abundant agricultural land and potential for alternative energy development show a great deal of promise for the future.



Inset: Employment force breakdown by sector.

Regional Map

Development Trends

DHHL PROJECTS

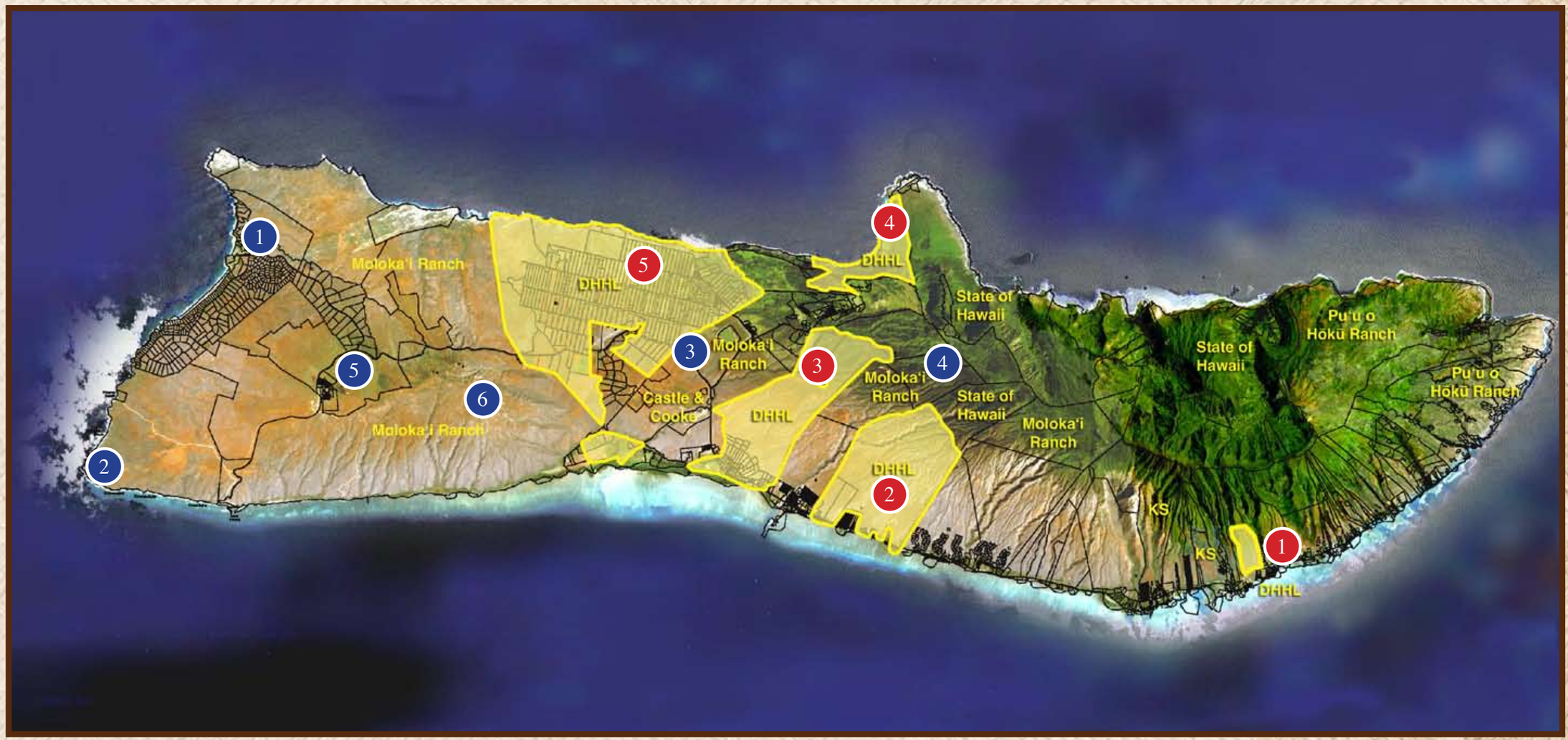
1. **‘Ualapu‘e** – This proposed residential area is a first priority for DHHL and will provide 74 residential lots on 25 acres to be developed in two phases. The first phase will consist of 27 lots on 9 acres on the east end, and the second phase would have 47 lots on 16 acres on the west end. Also planned at ‘Ualapu‘e are 299 acres general agricultural land, 85 acres of special district, and 3 acres of community use area.
2. **Kapa‘akea, Kamiloloa, and Makakupa‘ia** – Currently, there are 72 residential leases on 60 acres of this coastal homestead. The new residential area will comprise 204 acres of 286 half-acre lots on lands mauka of Kamehameha V Highway. Also available at Kapa‘akea are 465 acres of pastoral homesteads, 2,165 acres general agricultural land, 2,247 acres of special district, 58 acres of community use area, and 17 acres of industrial land.
3. **Kalama‘ula** – Currently, there are 160 existing lots on 210 acres. Future plans include limited growth of a new residential development of 57 lots on 81 acres. Also included at Kalama‘ula are 2,353 acres general agricultural land, 1,719 acres of special district, 76 acres of community use area, and 12 acres of commercial use land.
4. **Kalaupapa & Pālā‘au (Apana 3)** – Of the 621 acres designated as special district land, approximately 224 acres in Pālā‘au (Apana 3) will remain as forested reserve. Another 609 acres will remain Conservation District. Two areas totaling 7 acres will be designated for community use.
5. **Ho‘olehua-Pālā‘au (Apana 1 & 2)** – There are two existing residential areas on 55 acres in Ho‘olehua. Approximately 5,862 acres have been designated as supplemental agriculture and 3,681 acres as general agriculture. Other land uses include 922 acres of pastoral homesteads, 660 acres of special district, 73 acres of community use areas, 46 acres of Conservation District, and 40 acres of commercial use land.

MOLOKAI PROPERTIES LIMITED (MOLOKAI RANCH) – timing on Molokai Ranch developments are unknown.

1. **Kaluako‘i Resort** – Plans are underway for a $35 million restoration and renovation of the Kaluako‘i Resort. The hotel has been closed since 2000.
2. **Lā‘au Point** – Plans by MPL call for the eventual development of a 200-lot subdivision, located in southwest Moloka‘i. The plans include the dedication at 1,000 acres of cultural preserves and conservation land, two County shoreline parks, and access for subsistence gathering and hunting. This subdivision is part of an overall community-based master land use plan for Molokai Ranch.
3. **Kaunakakai** – As part of the implementation of their master plan, Molokai Ranch plans to donate 1,100 acres of land mauka of Kaunakakai to a community Land Trust for future housing development, another 5 acres of land zoned for light-industrial development.
4. **Kualapu‘u** – Molokai Ranch intends to designate 100 acres around Kualapu‘u to the Land Trust for community expansion. MPL will retain ownership of the land, but it will be managed by the community Land Trust.
5. **Maunaloa** – Molokai Ranch also intends to designate 100 acres around Maunaloa to the Land Trust for community expansion. MPL will retain ownership of the land, but will be managed by the Land Trust.
6. **Moloka‘i Land Trust** – As a consequence of its plans to develop La‘au Point, MPL has plans to turn over control of approximately 50,000 acres to a community land trust either by title or restrictive easement.

***Note**: Any references to non-DHHL development projects are for information purposes only, and should not be interpreted as an endorsement of the projects by the department.*

Major Landowners - Map



Infrastructure - Water

INFRASTRUCTURE - WATER

The major water systems on Molokaʻi include: DHHL, Maui County DWS, Molokaʻi Irrigation System (MIS), and private systems.

Nearly all of Molokaʻi's water comes from wells dug to tap the basal reservoirs. The west and central regions have aquifer systems that produce relatively low amounts of potable water. Total sustainable yield for the island is 81 mgd (Wilson Okamoto 2003).

DHHL WATER SYSTEM

DHHL owns two wells (0801-01 and 0801-02) in Kualapuʻu, and has a groundwater reservation of 2.905 million gallons per day (mgd) from the Kualapuʻu Aquifer System.

The existing DHHL Molokaʻi Water System serves three areas in Central Molokaʻi: Kalaʻe, Kalamaʻula Homestead, and the Palaʻau-Hoʻolehua Homestead. The water sources for the system are two 1,000-foot deep wells at Kalaʻe, in operation since 1980. The two wells at Kalaʻe are located within the Kualapuʻu Aquifer System. Water is pumped to a 1.0 million gallon reservoir at Kalaʻe. Two 6-inch parallel pipes direct water westward from the reservoir at Kalaʻe to two 3.5 million gallon concrete storage tanks located north of Kualapuʻu (SSFM 2002).

Numerous water lines from the storage tanks branch out in a westerly direction towards Hoʻolehua along Keonelele Avenue. Service in the Hoʻolehua area is along water lines within the rights-of-way of Farrington Avenue, and intersecting avenues. The water system also serves the Kalamaʻula homestead area located west of Kaunakakai, via a 12-inch diameter, gravity-flow pipe to a 200,000-gallon concrete reservoir above Kalamaʻula. Water transmission and distribution lines from the reservoir were installed in 1985 to service the Kalamaʻula homestead area (Wilson Okamoto 1993).

In addition to the two wells at Kalaʻe, DHHL's water system also has two surface water sources located in the Forest Reserve area in the upper reaches of East Molokaʻi western drainage area: Waihānau Stream and Kamiloloa Gulch intake. Both surface sources deliver water for filtration and storage at elevation 1,412 feet in Kauluwai (PBR 1986).

The Waihānau Stream drains to the north side of the island at Kalaupapa Peninsula. Water is diverted from the stream at the 2,264-foot elevation through 2,800 feet of tunnel to an intake structure in Kahapaʻaki Gulch. From there, it is delivered through 3,000 feet of 8-inch and 14,000 feet of 6-inch cast iron pipes with lead joint to the storage tank at Kalaʻe. The stream's yield varies seasonally from 800,000 gallons per day average in rainy months to as low as 3,000 gallons per day in dry summer months.

The other surface source is an intake on Kamiloloa Gulch at 3,100 feet. The yield averages 15,000 to 20,000 gallons per day with substantial seasonal fluctuation. The water is delivered by 3- and 4-inch transmission pipeline.

DHHL WATER RIGHTS

Water Code states that County and State Water plans shall incorporate the current and foreseeable need of DHHL (HRS §13-171-60(b)).

HRS provides that the Hawaiian Homes Commission and its lessees have prior right to two-thirds of the water in the Molokaʻi Irrigation System, with Supreme Court rulings affirming that primary uses of water include Native Hawaiian and traditional and customary rights.

COUNTY DWS WATER SYSTEM

(Source: Belt Collins 1982 report for DWS)

The County of Maui owns and operated four systems: Kawela-Kaunakakai, ʻUalapuʻe, Kalaʻe, and Hālawa.

The Kawela-Kaunakakai system is sourced by a well (0801-03) fed by the Kualapuʻu aquifer. This well, which has a permit to withdraw 0.5 mgd, is in close proximity to the DHHL wells.

The ʻUalapuʻe system is sourced by well, which has a 41-foot deep vertical shaft and is fed by 180 feet of skimming tunnels. A 9.5-mile long pipeline system extends from Kamalō to Moanui Stream, and is served by a 12-inch distribution main along Kamehameha V Highway. There is a 1.0 million gallon storage tank at elevation 250 feet above the well.

The Kalaʻe system is sourced by Waikalae and Waiʻalalā tunnels at elevations 1,715 and 1,625 feet, respectively. The tunnels yield perched water and deliver to thy system by gravity. Another source is by purchase from the DHHL tank in Kualapuʻu and pumped via an 8-inch main to DWS tanks in Kalaʻe.

The Hālawa system is sourced from a diversion in Makaʻeleʻele Gulch at elevation 250 feet. There is no storage tank; service is by direct diversion into the system's single 1.5-inch transmission/distribution pipeline.

MIS WATER SYSTEM

(Source: Santo, L. (2001). Assessment and Improvement Recommendations for the Molokai Irrigation System. Hawaii Agriculture Research Center: Aiea, Hawaii.
CWRM website)

The MIS, managed by the State Department of Agriculture, has three wells (0855-01, -02, and -03), which withdraw water from the dike complex in northeastern Molokaʻi to irrigate farmlands in central and western parts of the island.

• MIS operated by an irrigation manager and 2 irrigation system service workers employed by the DOA.

Infrastructure - Water (Existing Water Map)

Operation and maintenance costs of the MIS are provided by water use revenues and supplemented by DOA operating funds. Capital improvements are financed with State bonds.

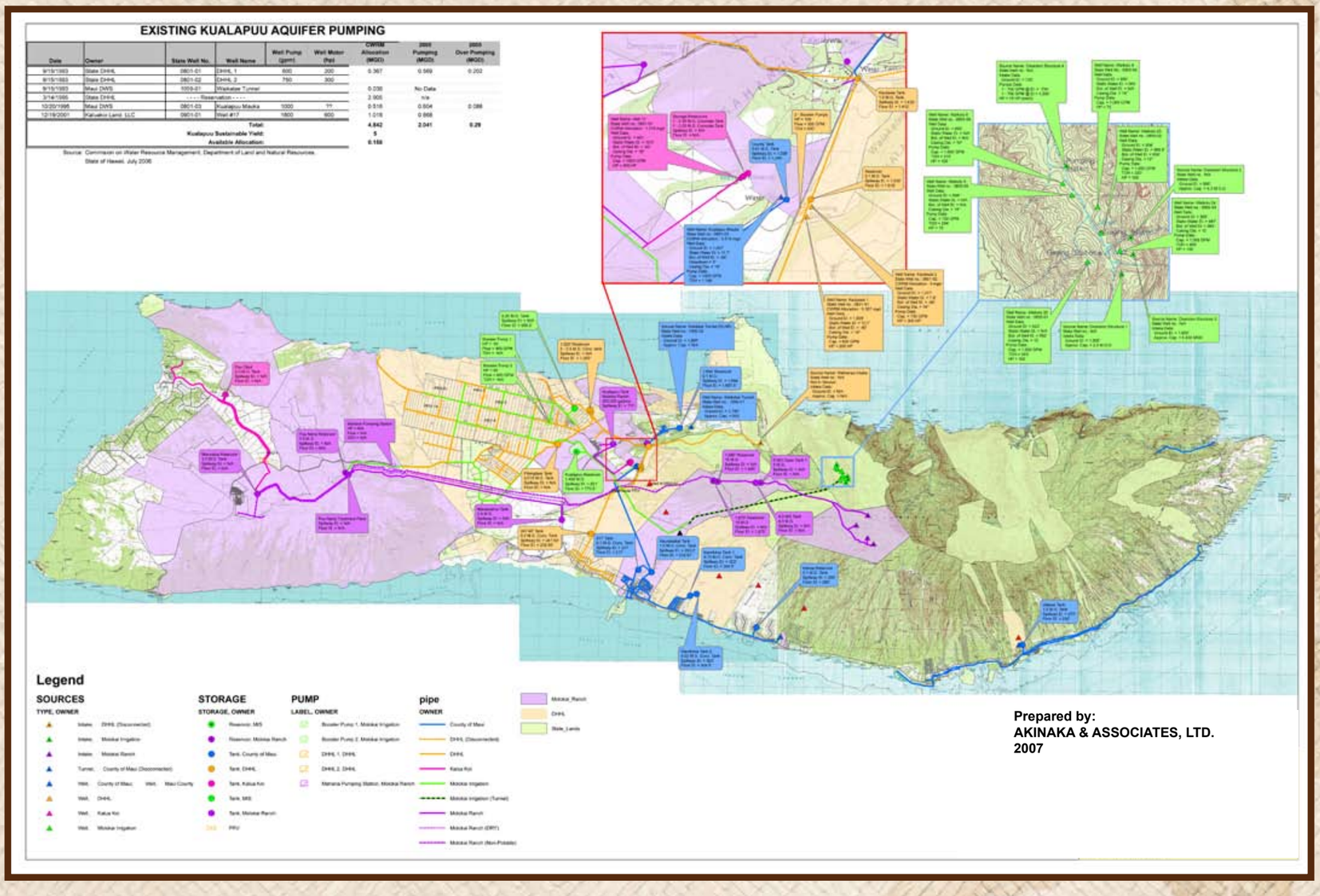
- Sole water source is the Waikolu Valley Watershed.
- Surface water system: 54% comes from 4 surface water diversion dams in Waikolu Valley, 28% from groundwater intercepted by the Waikolu tunnel, and 18% pumped from wells.
- Three intakes divert stream flows at the 1,000-ft elevation into the Moloka‘i Tunnel. The 4th intake with a pump station at the 800-ft elevation lifts stream flows to the Moloka‘i Tunnel inlet portal.
- Collected surface water and pumped groundwater are transported by gravity through a 5.1 mile-long tunnel, 0.3 mile-long concrete flume, and a 3.85 mile-long 30-inch steel pipeline connecting to a 1.4 billion-gallon Kualapu‘u reservoir, before being delivered to the customers.
- The Kualapu‘u reservoir has high evaporation losses (estimated at 1 mgd), seepage losses, and water quality problems related to sediments, algae, animals, and organic matter.
- From the reservoir outlet, water is distributed via 22 miles of pipeline to customers.
- The MIS serves approximately 235 customers on 3,102 acres with water use of 3.35 mgd; customers include diversified agricultural operations, native Hawaiian homesteads in Ho‘olehua, a large coffee farm, and a seed corn operation.

PRIVATE WATER SYSTEM

There are also various private systems owned by Molokai Ranch, Meyers Estate, and Kawela Plantation.

PROPOSED WATER SYSTEM

Because DHHL and DWS are currently over-pumping from the Kualapu‘u aquifer, there will need to be an exploration of new water sources and wells. DHHL is currently in discussions with the major island water stakeholders to collaborate on a USGS model for groundwater resources.



Infrastructure - Sewer

Existing Wastewater System

1. **Kaunakakai --** Wastewater service is provided by Maui County in Kaunakakai Town and the Kualapu‘u subdivision. Wastewater from the Kaunakakai system is coveyed to the County-owned Kaunakakai Wastewater Reclamation Facility for treatment and reuse as recycled irrigation water from excess disposed of via injection wells.

   The Kaunakakai collection system consists of one County-owned and operated pump station, eight miles of gravity sewers, and 0.2 miles of force main. The majority (85%) of lines in the Kaunakakai system are 8-inch diameter pipes constructed of VCP or PVC material. Small portions (approx. 6%) consist of 6-inch pipes, and approximately 9% of the sewer lines are larger than 8-inches in diameter. The County began using plastic pipe as a construction standard in the late 1970s; majority of areas constructed prior to 1970s are clay pipe.

   The Kaunakakai Wastewater Reclamation Facility has a capacity of 0.3 mgd. Current allocation is 0.289 mgd (96%) (Wilson Okamoto 2003).

   The Kaunakakai Wastewater Reclamation Facility provides secondary treatment of sewage, featuring rotating biological contractors, secondary clarifier, effluent filters, and chlorinators. Reclaimed or recycled water is reused for irrigation purposes, with the excess disposed of by injection wells.

2. **Kualapu‘u** -- Wastewater from the Kualapu‘u system is conveyed to a private wastewater treatment facility owned and operated by Moloka‘i Ranch. Information regarding this system is not available.

Proposed Wastewater System Improvements

Wastewater Treatment Facility for Kapa‘akea, Kamilola, and Makakupa‘ia Homestead – In order to construct the proposed homesteads at Kapa‘akea, Kamilola, and Makakupa‘ia, an onsite wastewater treatment facility will be required. This new facility is estimated to cost $12.5 million.

1) Conversion to septic
2) No more municipal sewer systems
3) Churches on large capacity septic systems
4) Cesspool variance for Ho‘olehua (Costs associated with septic conversion)

Existing State Roads

1. Route 450, Kamehameha V Highway, Kaunakakai to Hālawa Valley – this two-lane, divided highway provides access to DHHL homesteads at ʻUalapuʻe, Kapaʻakea, Kamilola, and Makakupaʻia.

2. Route 460, Maunaloa Highway, Maunaloa Village to Kaunakakai • Maunaloa Highway runs from an intersection at Kamehameha V Highway just east of the Molokaʻi Airport to Maunaloa Town in the West End. The Kalamaʻula Homestead is accessed from Maunaloa Highway.

3. Route 465, Airport Loop off of Maunaloa Highway (Route 460)
   • This road accesses the Molokaʻi Airport in Hoʻolehua.

4. Route 470, Kalaʻe Highway, Intersection with Maunaloa Highway (Route 460) to Kalaupapa Lookout
   • This road provides access to Kalaupapa & Pālāʻau (Apana 3).

5. Route 480, Puʻupeʻelua Avenue, Intersection with Maunaloa Highway to Intersection with Farrington Avenue
   • This road provides access to the Hoʻolehua Homestead.

Proposed Road Improvements

1) Nenehanaupo (Airport to Puukapele)
2) Naiwa Road (DHHL)
3) Road to Storage Tank (Hoolehua)
4) Kapaakea finished road
5) Keonelele ave. (Maintenance Problems)
6) Lihipali Ave. (work with DOT)

Funded Road Improvements

The 2007 Hawaiʻi State Legislature appropriated $5.7M in improvements for highways on Molokaʻi (Act 213, SLH 2007). These projects include:

• $3.5M in funding for the replacement of the Kawela Stream Bridge, including new sidewalks and other related improvements
• Stabilization of the sloped embankment at mile markers 13 and 14 along Maunaloa Highway
• Construction to upgrade the existing drainage culvert along Kamehameha V Highway near mile 12.5

Infrastructure - Utilities

Electrical Services

- The Maui Electric Company, Inc. (MECO) supplies electricity for the County of Maui and the island of Molokaʻi. A power plant is located in Pālāʻau, and a substation at Puʻunānā. Main transmission voltage is 34.5 kV (Wilson Okamoto 2003).

- In 2004, MECO was awarded $1.1 million from USDA Rural Development to install solar water heating on the island of Moloka'i. Application for installation is available through ALU LIKE, Inc., Dept. of Hawaiian Home Lands, Office of Hawaiian Affairs, Queen Liliʻuokalani Children's Center, Kulana ʻOiwi Complex across from the Coconut Grove in Kalamaʻula.

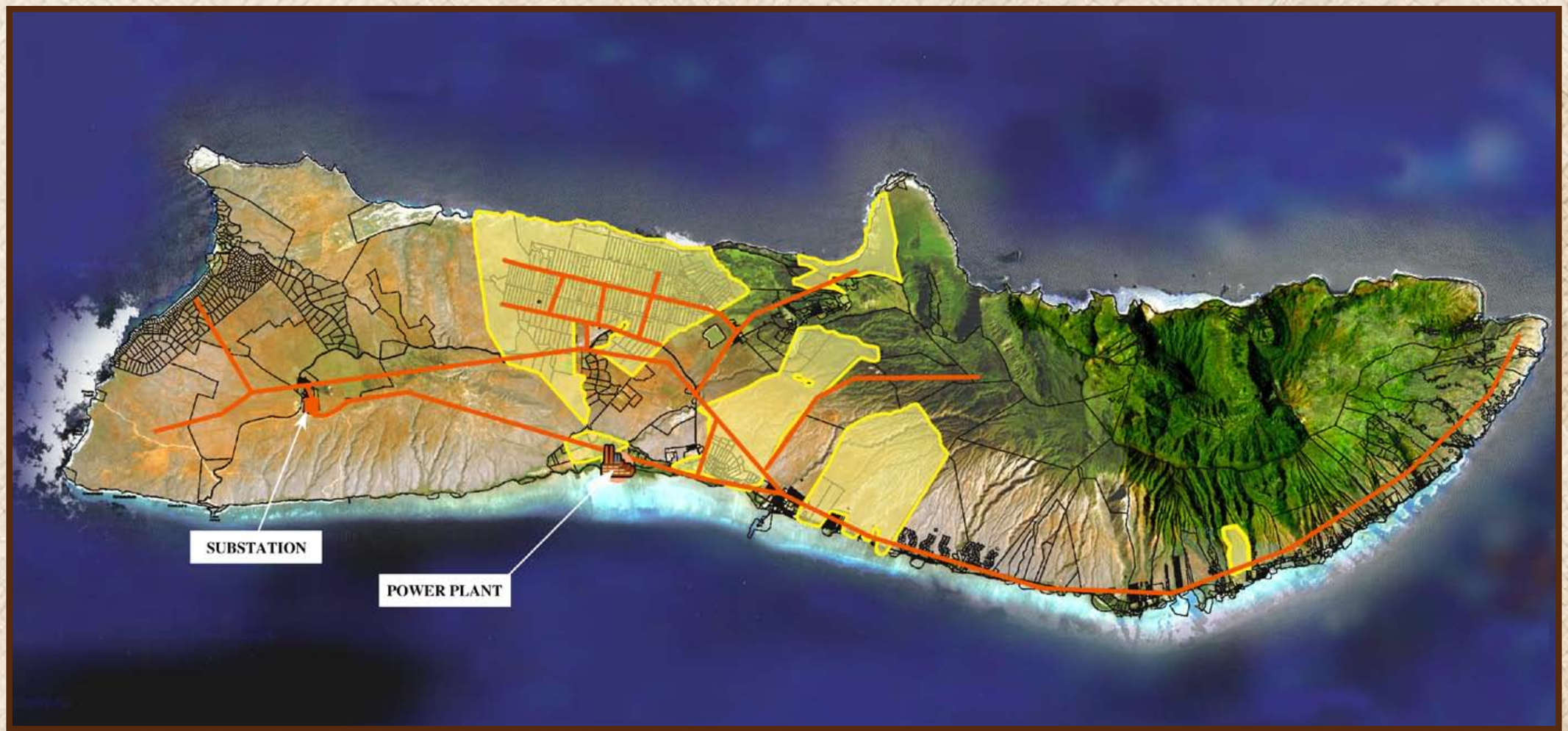
Telephone Service

Sandwich Isles Communications will provide fiber optic telephone service to DHHL's lands. Hawaiian Telcom will provide telephone service to the non-DHHL lands.

Cable Television Service

Cable television will be supplied by Oceanic Time Warner Cable.

Infrastructure - Utilities



Infrastructure - Public Facilities

Education – Moloka‘i currently has six public schools and four private schools. Twenty-one percent of the students are enrolled in special education. Although there is currently a surplus of classrooms, there is a high level of dependence on portable classrooms. At Kualapu‘u Elementary School, 64% of all classrooms are portable. With the projected enrollment of intermediate-high school significantly higher than current enrollment, it is expected that 35-40 additional classrooms will be needed by 2020. The elementary schools have enough facilities for future demands; however, a second intermediate-high school for the island may be needed.

The implementation of weighted student formula funding for public schools throughout the state has negatively impacted the schools on Moloka‘i. The low number of students has directly translated to a decrease in funding for the schools leading to cutbacks in discretionary programs.

With regard to Capital Improvements, Moloka‘i High School received $1.7M from the State Legislature to construct two new science classrooms.

	Private / Public	Grades	Enrollment	Projected Enrollment
Aka‘ula School	Private	5-8	45 (2005)	N/A
Ho‘omana Hou School	Private	9-10	16 (2005)	N/A
Kaunakakai Elementary	Public	K-5	218 (2006)	184 (2012)
Kilohana Elementary	Public	K-5	98 (2006)	87 (2012)
Kualapu‘u School (Charter)	Public	K-5	350 (2005)	N/A
Maunaloa Elementary	Public	K-5	57 (2006)	55 (2012)
Moloka‘i Christian Academy	Private	Pre K-12	57 (2005)	N/A
Molokai High	Public	9-12	394 (2006)	296 (2012)
Molokai Middle	Public	6-8	160 (2006)	160 (2012)
Moloka‘i Mission School	Private	K-8	14 (2006)	N/A

Library -- The Moloka‘i Public Library is located in a 3,627-square foot building in Kaunakakai. It has a space deficit of about 2,428 – 3,962 gsf. The Hawai‘i State Public Library System does plan to build a larger replacement for the library in Kaunakakai that would serve the entire island.

Higher Education - The University of Hawai‘i opened a permanent facility in 1999 on Moloka‘i. Administratively attached to Maui Community College, the Moloka‘i Education Center services approximately 120 students with face-to-face and distance learning options.

Police – Moloka‘i is protected by Maui Police Department’s (MPD) Moloka‘i Patrol District V. The Police Station is located in Kaunakakai, next to the Kaunakakai Fire Station. There are 28 officers at Moloka‘i Station. There are no State correctional facilities located on Moloka‘i.

Fire Protection – There are three fire stations on the island: Kaunakakai, Ho‘olehua, and Pūko‘o. The main station is the Kaunakakai Fire Station located next to the Police Department. The Kaunakakai Fire Station has an Engine and Tanker, a rescue boat and a utility truck. There are five to six firefighters on duty every twenty-four hours. The Pūko‘o Fire Substation is 16 miles east of Kaunakakai and houses a two-man engine company. The Ho‘olehua Fire Station serves the west end, and houses a full five-man engine company.

A $10.5 million new fire station for Kaunakakai is starting development. This new station will house full equipment, apparatus, and personnel, and will serve as an Emergency Operations Center in case of disasters.

Hospital – Moloka‘i General Hospital has the only emergency room and urgent care clinic for residents and visitors to the island. Moloka‘i General is a 15-bed rural health care facility located in Kaunakakai. The hospital provides acute, long-term care, and low-risk obstetrical in-patient services. It also offers kidney health, diabetes management, preventive health, high-risk weight management, planning and family support services on an outpatient basis. Moloka‘i General Hospital is also in partnership with Na Pu‘uwai Native Hawaiian Health Care System. The 2007 State Legislature approved a $1.7M grant to help upgrade and expand the facility.

Airports – Moloka‘i is serviced by two airports, one in Ho‘olehua and the other on the Kalaupapa Peninsula. Moloka‘i Airport at Ho‘olehua receives the bulk of off-island air traffic, and is the only airport on the island with regularly scheduled air service. Moloka‘i Airport processed 219,195 passengers in 2006. Kalaupapa Airport processed 12,009 passengers that same year. Both airports are under the jurisdiction of the Hawai‘i State Department of Transportation.

The 2007 State Legislature approved $700,000.00 in matching funds to qualify for federal monies that would help construct a new Aircraft Rescue and Fire Fighting facility. The project will cost $6.9 million.

Harbors – Moloka‘i has three operable ports of call in Kaunakakai, Kalaupapa, and Hale ‘o Lono. The State Department of Transportation operates a commercial port at Kaunakakai where most of the goods and services flow into the island. The State Department of Health is responsible for the harbor at Kalaupapa. Small boat harbors at Kaunakakai, Hale ‘O Lono, and an anchorage at Kalaupapa are under the jurisdiction of the Department of Land and Natural Resources.

Funding in the amount of $1M was made available by the 2007 State Legislature to build improvements.

Regional Services - Public Facilities

LEGEND

- Fire / Police
- Airport
- Health Facilities
- Parks
- Schools
- Harbors

Development Projects

The identification of "priority projects" from various development and community activities helps DHHL focus its energies on supporting or shepherding these initiatives toward realization. The priority projects process is largely driven by a conversation between the community and DHHL in order to more appropriately identify area needs.

Development Projects

WATER SYSTEM

* 1. **Implement Recommendations Outlined in Akinaka & Associates Study** -- Of the recommendations, the community has outlined four projects they would like to move forward with in priority order: 1) Purchase of a Diesel Generator; 2) Install a SCADA System; 3) Conduct a Verification Test; and 4) Account for Missing Water.

2. **Upgrade existing DHHL Kualapu‘u water** – The Existing Kualapu‘u system is currently being over-pumped, is not efficient, and is not adequate to meet future DHHL water needs.

RESOURCE MANAGEMENT

* 1. **USGS Model –** The objective of this study is to estimate the hydrologic effects of additional ground-water pumping scenarios on water levels at existing wells, coastal discharge and address the conceptual effects of pumping on the brackish-water transition zone.

INFRASTRUCTURE

1. **Explore Alternative Energy Options** - Support planning to provide options for making Moloka‘i energy self-sufficient through alternative energies.

2. **Nā‘iwa infrastructure** – This agricultural subdivision is already planned and awarded but not-built community is comprised of 58 lots on 298 acres that was part of an accelerated award program in 1986. This project is awaiting completion of the Phase IV Ho‘olehua water system improvements and other infrastructure needs.

AGRICULTURAL

* 1. **Shared Equipment Access for Farmers** -- Community members have suggested the idea of a co-operative of mechanical farming equipment where usage time can be shared between area farmers in a cost-effective manner. As there are also concerns about the lack of funding for extramural farming-related activities at Moloka‘i High and Intermediate School, largely stemming from the state's new weighted student formula, allowing student access to the equipment could insight a renewed interest in the agricultural industry. This priority project focuses on facilitating the process of initiating the planning for such a co-operative, including grant writing and seeking other means of financing.

2. **Provide Assistance for Restarting Career and Technical Education Programs Focused on Agriculture at Moloka‘i High School** -- The implementation of weighted student formula funding for public schools throughout the state has negatively impacted the schools on Moloka‘i. The low number of students has directly translated to a decrease in funding for the schools leading to cutbacks in discretionary programs, including those related to agriculture. As career and technical education programs related to agriculture are a crucial element in sustaining the industry on Moloka‘i, community support would be provided to maintain agriculture-based classes, as well as a Future Farmers of America organization.

3. **MIS System** – Analyze the MIS and its relationship with DHHL agricultural users; coordinate with DOA in upgrading the system to increase water service to the agricultural lands.

** Priority Projects*

COMMUNITY

* 1. **Enhancement of Services and Facilities at Lanikeha Community Center** – The community has expressed their desire to increase the amount of services available at the center as well as providing more opportunities for community utilization. The community has not settled on elements of an enhancement plan. However, suggestions include the construction of a luʻau pit, a hula mound, a multi-purpose ballfield, garden area and a larger kitchen.This priority project outlines the initiation of an assessment of the center's current uses, and the present and future needs of the community.

2. **Kūpuna Housing in Kalamaʻula** – The community strongly expressed their desire for Kūpuna Housing near existing social support services at Kulana ʻŌiwi. This would be an affordable housing project for native Hawaiians over the age of 62.

3. **Native Hawaiian Healing and Wellness Center in Kalaupapa** – This wellness center would accomplish several things, which include: maintaining the historical integrity of the area which the National Park Service (NPS) will continue to oversee; promoting the sense of how this area was engaged by its residents for purposes of finding inner healing and resolve to address the circumstances that evolved in their isolation and how the land does heal and continues to do so if maintained properly; establishing a native Hawaiian presence with cultural practitioners of lāʻau lapaʻau and lomilomi providing therapy and treatments that could be interwoven with the educational curriculum of traditional hālau and other academic institutions, such as the Maui Community College-Molokaʻi Campus and other community organizations dedicated to physical and spiritual wellness; allowing for those families of non-Hawaiian Hansen Disease residents to maintain presence and access to the area; and finally, advocating that the DOH as the health care providers and DHHL as the land stewards have a kuleana to those remaining patients as long as they continue to live in Kalaupapa.

4. **Cultural and Educational Community Center in Pālāʻau** – This center would perpetuate the traditional cultural practices of Hawaiʻi, but would be specific to the historical legacy of Molokaʻi and Kalaupapa. DHHL envisions the community center to be a full-service center where charter schools or immersion schools could utilize the center in the daytime, other hālau and community could share it in the evenings and weekends. Further this center could integrate efforts of NPS to create a visitors' center that would provide educational programs and experiences without the necessity for visitors to physically visit and disturb the peninsula.

5. **Affordable Housing Program** – Warehouse affordable building materials, more support from DHHL that goes beyond financing.

6. **Ongoing Expansion of Facilities at Kiowea Park (Coconut Grove)** – Approximately $190,000 remains from a settlement pay-out from the County of Maui that shall be spent on Molokaʻi for community-based projects. Plans are underway for the planning and purchase of materials to construct an additional pavilion at the park. Additional funding is required to construct restrooms and a supporting septic system.

** Priority Projects*

Priority Projects - Implement Water Study Recommendations

Priority Project: Dhhl Molokai Water System Upgrades

In June 2007, Akinaka & Associates released a study commissioned by DHHL assessing its existing water system that services Ho‘olehua and Kalama‘ula. The study outlined recommended improvements to provide adequate and more dependable water service to these areas. The study also determined the potable water requirements necessary to further maximize the use of lands within the Ho‘olehua and Kalama‘ula homesteads, in accordance with the Molokai Island Plan.

The study set forth eight specific recommendations to enhance the existing potable water system serving Ho‘olehua and Kalama‘ula. The eight recommendations (not listed in any particular order) included:

1. Kualapu‘u Aquifer Safe Pumping Yield (Verification Test)
2. Investigate Disparities in Water Usage Leading To Unaccounted Water
3. Additional Water Source Development
4. Enhance Electrical Power System to Efficiently Suit Water Needs by Purchasing a Diesel Generator
5. Well Site Water Storage Capacity
6. System Control and Operation – Installation of a SCADA (Supervisory Control and Data Acquisition) System
7. Lower Outlet Pipe of 1,000,000 gallon Kauluwai Tank
8. Minimizing Agricultural Use of Potable Water By Utilizing MIS water

Of the recommendations, four projects are ready to move forward with in priority order: 1) Purchase of a Diesel Generator; 2) Install a SCADA System; 3) Conduct a Verification Test; and 4) Account for Missing Water.

Priority Sub-Project # 1 Purchase of a Diesel Generator

DHHL currently operates its well and booster pumps during the off-peak hours to take advantage of lower energy costs. However, the timing restricts efficient and proper operation of the DHHL water system. As the pumps are linked to the power grid, past outages have kept the well pumps out of service long enough to drop the water to critical levels in both the Kalama‘ula and Kauluwai tanks.

Many of these complications can be avoided by the purchase of a diesel generator to provide power for the water pumps and remove them from the Maui Electric grid. At minimum, the system requires a stand-by generator to ensure continued water service in the event of an emergency or during extended power outages.

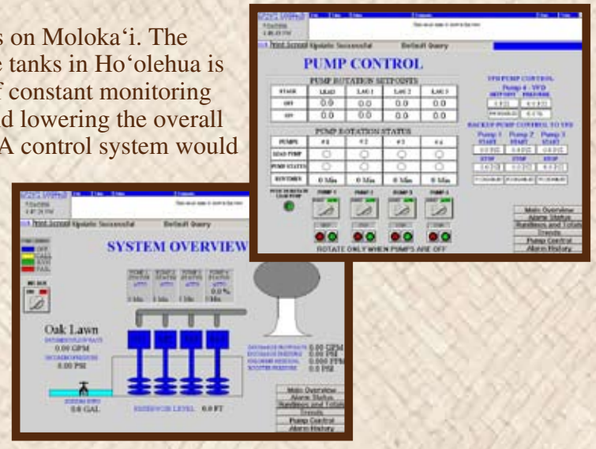
CRITICAL PATH:

Early 2008: Obtain Funding
Late 2008: Purchase Equipment
Early 2009: Install Equipment

COSTS & SOURCE OF FUNDING:

A sufficient diesel generator, as estimated by Akinaka & Associates, would cost approximately $200,000. Funding for the equipment could be obtained from the Department of Hawaiian Home Lands, The U.S. Department of Agriculture, or private sources. The Hawaiian Homes Commission recently authorized an appropriation of $100,000 to help fund the purchase of a diesel generator.

Priority Sub-Project # 2: Installation of a SCADA Control System



Manual timers currently are used to operate the wells on Moloka‘i. The transmission of water from the Kauluwai Tank to the tanks in Ho‘olehua is also controlled manually by a gate valve. The lack of constant monitoring leads to either the tank over filling or under filling and lowering the overall efficiency of the system. The installation of a SCADA control system would allow for greater system control and monitoring, ultimately leading to increased operational efficiency.

CRITICAL PATH:

Early 2008: Obtain Funding
Late 2008: Purchase Equipment
Early 2009: Install Equipment

COSTS & SOURCE OF FUNDING:

The installation of a SCADA system, as estimated by Akinaka & Associates, would cost approximately $200,000. Funding for the equipment could be obtained from the Department of Hawaiian Home Lands, The U.S. Department of Agriculture, or private sources. The Hawaiian Homes Commission recently authorized the appropriation of $200,000 to install a SCADA system.

Priority Projects - Implement Water Study Recommendations

Priority Sub-Project # 3: Water Verification Test

Current pump records show that DHHL and Maui DWS are exceeding their water allocations permitted under order by the Commission on Water Resource Management for the Kualapu'u Aquifer. The rise in chloride concentrations at the two DHHL wells and Maui County's well indicate the negative influence these wells may have on each other due to their close proximity. The increased amount of chloride in the water may also indicate pumping activities have gone beyond their respective capacities.

The priority sub-project would entail the performance of a coordinated verification-test of both the DHHL and Maui DWS wells to confirm the safe pump operating capacity and preserve the integrity of the aquifer. The identification of safe well operating capacities will help establish a water resource baseline – information critical for future development.

CRITICAL PATH:

Early 2008: Identify Funding
Late 2008: Execute Contract the Consultant/Contractor
Mid 2009: Receive Draft Report
Late 2009: Receive Final Report

COSTS & SOURCE OF FUNDING:

A validation test of this magnitude, as estimated by Akinaka & Associates, would run approximately $200,000. Funding for the equipment could be obtained from the Department of Hawaiian Home Lands, The U.S. Department of Agriculture, the County of Maui Department of Water Supply, adjacent large landowners utilizing water from the wells, or other private sources.

Priority Sub-Project # 4: Determination of Unaccounted Water

The two DHHL well pumps yield an average of 570,000 gallons per day (gpd). During the same period, the recorded consumer meter readings show an average consumption of 350,000 gpd. A discrepancy of 200,000 gpd between the water being put into the system and the water being consumed by users is a major concern. A survey and study is necessary to determine whether well and consumer meters are out of sync, or the system has a "leak." Part of this study would entail the calibration of the existing meters.

CRITICAL PATH:

Early 2008: Identify Funding
Late 2008: Execute Contract with Consultant/Contractor
Mid 2009: Receive Draft Report
Late 2009: Receive Final Report
Early 2010: Initiate Remedial Steps

COSTS & SOURCE OF FUNDING:

The water loss study, as estimated by Akinaka & Associates, would run approximately $100,000. Funding for the equipment could be obtained from the Department of Hawaiian Home Lands, The U.S. Department of Agriculture, adjacent large landowners utilizing water from the wells, or other private sources.

Priority Projects - Ensure Timely Completion of USGS Model

Priority Project: Moloka‘i Water Resources Study

In an island freshwater lens system, increased withdrawals may, in the long term, result in a decline in water levels, a rise in the transition zone between freshwater and saltwater, and a reduction of natural ground water discharge to streams or the ocean. The extent to which water levels decline and the transition zone rises is dependent on factors including the distribution and rates of withdrawals and the hydraulic characteristics of the aquifer system.

Most of the ground water on Moloka‘i is from the Kualapu‘u area, the south shore of eastern Moloka‘i, and the dike complex in northeastern Moloka‘i. The sustainable yield of the Kualapu‘u aquifer is estimated at 5.0 mgd. 1.937 is currently being withdrawn, 2.905 mgd is reserved for DHHL, and only 0.158 mgd remains unassigned.

CURRENT WITHDRAWALS (Net Averages)
0.552 mgd = Maui Department of Water Supply (DWS)
0.367 mgd = State Department of Hawaiian Home Lands (DHHL)
1.018 mgd = Molokai Properties, Ltd. (MPL)
1.937 mgd Total

There are new wells being proposed in adjacent aquifer sectors of Maunawainui and Kamiloloa. The DHHL Moloka‘i Island Plan projects the need for an additional 2.2 mgd for residential, commercial and community uses on the island over the next 20 years. DHHL’s ability to its future water needs and the impact of increased pumping nearby on water and salinity levels is a concern.

In 1997 USGS developed a numerical ground-water flow model for Moloka‘i. This numerical model estimates the hydrologic effects of additional ground-water pumping scenarios on water levels near existing wells and coastal discharge. The model is also able to simulate long-term conditions of the various pumping scenarios. One shortcoming of the model was its inability to simulate the effects of ground-water pumping on the brackish-water transition zone, however USGS has since updated its model to address this.

This updated model has spawned interest by the water purveyors and various water stakeholders on the island to initiate a new study with the updated numerical model. The objective of this study is to estimate the hydrologic effects of proposed withdrawals on water and salinity levels and coastal discharge on the island of Moloka‘i.

This study will enhance DHHL’s efforts to protect its water reservation at the Kualapu‘u aquifer, better manage the level of pumping and placement of future wells, and make the most effective and efficient use of this renewable resource. This study will also complement other work involving water on Molokai, including the CWRM Molokai Water Working Group, DHHL Molokai Regional Plan, and DHHL Molokai Water System Report.

COST

$315,000	Federal (Corps of Engineers)
$300,000	Federal (USGS)
$315,000	Non-Federal ($63,000 x 5 Partners)
$939,000	**Total**

DHHL’s estimated share of $63,000 represents 7% of the total cost.

SOURCE OF FUNDING
66% of the cost will carried by the Federal government and 33% equally by the five non-federal partners – Commission on Water Resource Management, DHHL, DWS, Department of Agriculture, MPL, and possibly the Office of Hawaiian Affairs.

CRITICAL PATH

The project will requires three years to complete.

1. Revise Existing Numerical Model = 3-6 months
2. Data Collection(Compile existing pumping data) = 3-6 months
3. Numerical Model – Run selected withdrawal scenarios, generate figures and 3-D simulations, archive model runs = 8 -12 months
4. Report – Prepare draft, colleague review, report approval, comments and publish = 8 – 12 months

Priority Project - Lanikeha Community Center Upgrades

Priority Project: Enhanced Utilization Of Lanikeha Community Center

Located on Farrington Avenue in Hoʻolehua, the $3 million 10,250 square foot Lanikeha Community Center was completed in 2001 to provide a community gathering space, as well as educational and social services. Support for the facility was provided by the County of Maui, the Department of Hawaiian Home Lands, the Office of Hawaiian Affairs, the United States Department of Agriculture, and private sources including in-kind services.

Tenants of the center include Punana Leo O Molokaʻi, ALU LIKE, The Molokai Community Services Council, and the Molokaʻi Habitat for Humanity. ALU LIKE manages the hall portion of the facility while the Molokaʻi Community Services Council manages a business incubation kitchen certified by the State Department of Health.

Throughout discussions, members of the community have expressed their desire to increase the amount of services available at the center as well as providing more opportunities for community utilization. The community has not yet settled on the elements of such an enhancement plan. However, suggestions have included construction of a luʻau pit, a hula mound, a multi-purpose ballfield, garden area, larger kitchen, and other recreational facilities.

This priority project would begin the process of assessing the center's current uses, and the present and future needs of the community.

COSTS

Phase I: Community Needs and Site Assessment
$20,000.00

Phase II: Planning and Design - TBD
The cost of the planning and design is incumbent on the actual need

Phase III: Construction - TBD
Construction costs would be incumbent on the elements included in the program. For example, baseball field installation costs run roughly $500,000.00. Renovations to the existing building to expand capacity of the current kitchen could run between $1-2M.

SOURCE OF FUNDS

Assessment funds could be derived from the U.S. Department of Agriculture, U.S. Department of Housing and Urban Development, Department of Hawaiian Home Lands, The Office of Hawaiian Affairs, The University of Hawaiʻi System, Hawaiʻi State Legislature and the County of Maui.

CRITICAL PATH

Early 2008: Assessment of current community utilization of the community center, and community needs, identification of enhancement projects. Obtain money for planning

Late 2008: Planning
Early 2009: Grant applications, government lobbying for funding
Late 2009: Design
Early 2010: Construction

Priority Projects - Agricultural Related

Priority Project: Equipment Access To Farmers On Dhhl Lands

The Moloka‘i community has raised concerns regarding the need to maintain and expand the agricultural industry which is critical to preserve a rural way of life and provide opportunities for jobs. The island and State as a whole would benefit from efforts to reduce our reliance on imported goods and develop an agricultural industry.

Although most of the leased acreage on Moloka‘i has been designated for agricultural cultivation, many of the agricultural lots are not being used to their maximum economic potential. The disparity between optimum and current production is the result of many factorsm including the farmers’ inaccessibility to the appropriate tools and equipment.

For example, the high cost to purchase and maintain farming equipment (e.g. tractors, sprayers, tillers, etc.) makes accessibility virtually out a reach for start-up homestead farmers. Furthermore, the equipment is use only occasionally, leaving long periods where the gear is left idle.

Conversations with area farmers and community members suggest the need for a co-operative for mechanical farming equipment where costs and use can be shared among area farmers in a cost-effective manner. Such a program could be seek funds from user fees and public or private grants to purchase, maintain and coordinate use. Allowing high school students access to the equipment would help develop new interest in the agriculture as a vocation.

This priority project focuses on a facilitated process of defining needs among the user base, putting together a proposal for such a co-operative, and seeking means of financing.

COSTS

PHASE I: Planning
Development of Plan and Solicit Funds: $75,000

PHASE II: Implementation TBD

FUNDING OPPORTUNITIES

Funding could come in the form of grants from Federal or State agencies. Equipment loans are also possible.

KEY STAKEHOLDERS

- Hawai‘i Department Labor & Industrial Relations
- Homestead Farmers
- Department of Hawaiian Home Lands
- United States Department of Agriculture
- United States Department of Housing and Urban Development
- Hawaii State Department of Agriculture
- Moloka‘i High and Intermediate School
- Produce Wholesalers
- University of Hawai‘i System
- Trade Unions

CRITICAL PATH

PHASE I:

Early 2008: Obtain funding for planning.

Late 2008: Engage farming community to develop a framework for the co-operative, and a strategy for financing and implementation. Develop the proposal and applications for grants and alternative financing

Early 2009: Implement legal structure of co-operative.

Timeline Matrix of Projects

Project	Type	Lead	Status	1st Half 2008	2nd Half 2008	1st Half 2009	2nd Half 2009	1st Half 2010	2nd Half 2010	1st Half 2011	2nd Half 2011
Implement Akinaka Study Recommendations: Purchase of a Diesel Generator	Water	Funded by DHHL	Preliminary Proposal	Obtain Funding	Purchase Equipment	Install Equipment					
Implement Akinaka Study Recommendations: Installation of SCADA System	Water	Funded by DHHL	Preliminary Proposal	Purchase Equipment	Install Equipment						
Implement Akinaka Study Recommendations: Water Verification Test	Water	DHHL/County of Maui	Preliminary Proposal	Identify Funding	Execute Contract with Consultant	Receive Draft Report	Receive Final Report				
Implement Akinaka Study Recommendations: Determination of Unaccounted Water	Water	DHHL	Preliminary Proposal	Identify Funding	Execute Contract with Consultant	Receive Draft Report	Receive Final Report	Initiate Remedial Steps			
USGS Water Resources Study	Water Management	US Army Corps of Engineers	Ongoing	Revise Numerical Model	Data Collection	Apply Modeling	Apply Modeling	Receive Draft Report	Receive Final Report for Publication		
Feasibility Studies, Grant Writing and Fundraising for Possible Program for Shared Access to Farming Equipment	Agriculture	DHHL/USDA	Preliminary Proposal: Focus on Study and Fundraising	Obtain Funding for Planning	Develop Structure and Initiate Grant Writing/Fundraising	Legally Create Entity to Manage Program					
Assessment of Facilities and Services at Lanikeha Community Center; Outline Future Needs	Community	DHHL	Preliminary Proposal: Focus on Assessment Only	Obtain Funding; Initiate Assessment	Planning	Grant Writing/Fundraising; Lobby for Funding	Design	Construction			
Upgrade Existing DHHL Kualapu'u Water System	Water	DHHL	Proposed/No Action								
Na'iwa Infrastructure	Infrastructure		Pending Completion of Phase IV Ho'olehua Water System Improvements								
Assist Moloka'i High School with Agriculturally Based Career and Technical Education Programs	Agriculture/Education	DOE/USDA/DHHL/OHA	Proposed/No Action								
Kupuna Housing in Kalama'ula	Community	DHHL	Proposed/No Action								
Native Hawaiian Healing and Wellness Center in Kalaupapa	Community	DOH/DHHL	Proposed/No Action								
Cultural and Educational Community Center in Pala'au	Community	DHHL	Proposed/No Action								
Affordable Housing Program	Community	DHHL	Proposed/No Action								
Expansion of Facilities at Kiowea Park (Coconut Grove)	Community	DHHL	$190,000 in funds available for planning and purchase of materials	Planning/Fundraising	Purchase of Materials						
Replacement of Kawela Stream Bridge	Infrastructure	DOT-Highways	$3.5M Funded (Act 213, SLH 2007)		Right of Way Acquisition	Right of Way Acquisition	Construction	Construction	Construction	Pau	
Makakupaia Bridge Replacement	Infrastructure	DOT-Highways	Design Ongoing		Right of Way Acquisition			Construction	Construction	Construction	Pau
Culvert Replacement Along Kamehameha V Hwy Mile 12.5	Infrastructure	DOT-Highways	Funded			Design	Construction	Construction	Pau		
Kaunakakai Harbor Ferry System Improvements	Infrastructure	DOT-Harbors	Funded; Design Ongoing		Design	Design	Construction	Construction	Construction	Pau	
				Priority Project	Potential Priority Projects						

DEPARTMENT OF HAWAIIAN HOME LANDS